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SOME REFLECTIONS ON EXPORT PERFORMANCE OF SELECTED COMMERCIAL CROPS

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The basic premise to export goods is to import goods from other countries. The capacity of a country to import is a function of the quantum of its exports and relative price of the exportable commodity. The ratio between the index of unit value of a commodity (export price) to the unit value of general imports may be defined as the relative price or terms of trade of the export commodity/general exports. An improvement in the terms of trade of a commodity will enable the country to import more for the given quantity of exports. Depending upon the elasticities of demand and supply within the country and outside the country, the relative price of an export commodity may rise more or less than the prices of general exports or another exportable commodity.

The composite index which takes into account both the changes in the terms of trade and quantum of exports is an index of purchasing capacity. The index of purchasing capacity may be obtained by multiplying the index of net terms of trade by the quantum index.

Agricultural production including commercial crops is subjected to variations due to weather, pests and diseases, etc. The exports are made only after meeting the domestic requirements. Consequently, the variations in the production of commercial crops result in a more than proportionate change in the quantum of its exports.

The following indicators were considered for examining the export performance of commercial crops: (1) unit value, (2) volume of export, (3) export earnings, (4) net terms of trade, (5) purchasing capacity of the exported commodity and (6) instability of unit values, quantum and export earnings of commercial crops.

The commercial crops covered by the study were raw cotton, tobacco, oilcakes and sugar. The time-series data from 1960-61 to 1984-85 were collected from various official publications. Under the major objective of examining the export performance of selected commercial crops, the specific objectives set for the study were (i) to study the trends in the unit values, quantum, export earnings, net terms of trade and purchasing capacity of selected commercial crops, (ii) to examine the impact of internal factors affecting the quantum of exports of commercial crops and (iii) to measure the extent of fluctuation in the unit values, quantum and export earnings of commercial crops and compare the same with those of general exports and other domestic indicators.

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The views expressed in the paper are those of the authors and not necessarily of the Institute they serve.

METHODOLOGY

All the variables, namely, unit value, quantum, export value, terms of trade, purchasing capacity, wholesale prices and domestic production of raw cotton, tobacco, oilcakes and sugar as well as the general exports, general imports and net national product (per capita net national product) taken at constant prices (1970-71), were in terms of index numbers with 1968-69 as the base year.

Indices of general exports and imports stand for exports and imports of all commodities.

Net terms of trade (N_{in}) and purchasing capacity (I_{in}) of i th commercial crop for the n th year is defined as follows:

$$N_{in} = \frac{U_{in}}{U_{mn}}$$

$$I_{in} = N_{in} \times Q_{in}$$

where

U_{in} = unit value index of export of i th commodity,

U_{mn} = unit value index of general imports for n th year,

Q_{in} = quantum index for export of i th commodity,

i = raw cotton (rc), oilcakes (oc), sugar (S) and tobacco (t).

To study the factors affecting the quantum of exports of i th commercial crop (Q_{in}), the following functional form was fitted separately for each of the selected commercial crops, namely, raw cotton, tobacco, oilcakes and sugar.

$$Q_{in} = A O_{in}^{b_1} Y_n^{b_2} \left(\frac{U_{in}}{W_{in}} \right)^{b_3} e_n$$

where

O_{in} = domestic production index of i th crop in the previous year,

Y_n = (Y_{np}) = the country's net national product (per capita net-national product) at constant (1970-71) prices for n th year,

$\frac{U_{in}}{W_{in}}$ = unit value index of i th commodity for n th year deflated by the corresponding wholesale prices of that commodity for that year (relative export price),

b_1, b_2, b_3 are the export elasticities of lagged production (of the concerned crop), national income (or per capita income), and relative export prices respectively,

e_n = stochastic term.

The extent of fluctuations in the various indicators of these commercial crops has been studied with the help of the coefficient of variation of the respective indicators.

TRENDS IN SELECTED INDICATORS

Table I presents the annual compound rates of growth of quantum, unit value, export value, terms of trade, purchasing capacity, home production

and domestic wholesale prices of raw cotton, tobacco, oilcakes, general export and general imports.

TABLE I. GROWTH OF SELECTED INDICATORS* OF COMMERCIAL CROPS DURING 1961-62 TO 1983-84

(per cent per annum)

Indicator	Commercial crops					
	Raw cotton	Tobacco	Oil-cakes	Sugar	General exports	General imports
Quantum	0.20	4.12	0.79	2.80	5.20	4.27
Unit value	8.75	8.36	8.38	8.15	8.40	8.93
Export value	8.85	12.85	9.11	11.06	14.03	—
Terms of trade	-0.16	-0.52	-0.50	-0.81	-0.48	—
Purchasing capacity	0.00	3.51	0.17	1.96	4.81	—
Domestic production	1.82	2.17	1.80	4.84	3.61	—
Domestic wholesale prices	7.24	8.11	8.11	6.29		

* Sources of data:

1. Government of India: Statistical Abstract of India, Central Statistical Organisation, Ministry of Planning, New Delhi.
2. Government of India: Basic Statistics Relating to Indian Economy 1950-51 to 1970-71, Central Statistical Organisation, Ministry of Planning, New Delhi.
3. Government of India: The Economic Survey, Ministry of Finance, New Delhi (relevant issues).
4. Reserve Bank of India: Report on Currency and Finance, Volume II—Statistical Tables, Bombay (relevant issues).

The higher growth rate of unit value of raw cotton and sugar as compared to the corresponding growth rates of domestic wholesale prices indicated that the internal rate of inflation in these commodities was higher than the domestic rate of inflation.

As can be seen from Table I, the annual compound rate of growth of the quantum of tobacco export was higher, but the same was lower for raw cotton, oilcakes and sugar than the growth rates of domestic production of the corresponding commodities. This situation indicates that increasing population and incomes at home exerted pressure on the available supplies of raw cotton, oilcakes and sugar, reducing thereby their exportable surplus.

When the growth rate of the quantum (or its value) of export of an individual commodity is higher or lower than the growth rate of the quantum (or its value) of general exports, its share in the total quantum (or its value) accordingly increases or decreases. It may be seen from the table that the annual compound rates of growth of the quantum and value of exports of individual commercial crops were lower than those of general exports, indicating merely a decline in the share of cotton, tobacco, oilcakes and sugar in the total exports both in terms of quantum and value.

Tobacco

$$Q_t = 1.44 O_t^{1.02} Y^{0.33} \left(\frac{U_t}{W_t}\right)^{-0.44} \quad R^2 = 0.74$$

(2.49)** (2.73)** (1.18)

Figures in parentheses are 't' values of the coefficients.

*** Significant at 1 per cent level.

** Significant at 5 per cent level.

* Significant at 10 per cent level.

The developed equations showed that other things remaining the same, lagged output had a positive and significant influence on the quantum of export of raw cotton, oilcakes, sugar and tobacco. The result indicated that a one per cent increase in the index of lagged production of the respective commercial crop would increase sugar exports by 3.4 per cent, raw cotton by 3.2 per cent, tobacco by one per cent and oilcakes by 0.7 per cent.

An increase in the real national income/per capita national income increases the demand for goods and services within the country. The negative coefficient for raw cotton, oilcakes and sugar indicated that an increase in the national income would reduce the exportable surplus. However, in the case of tobacco, the elasticity coefficient was positive, indicating thereby that an increase in the per capita national income will also raise the quantum of export by 0.3 per cent.

The positive elasticity coefficient of per capita national income for tobacco exports may perhaps be explained in terms of the disparities in taxes on this commodity for internal and external markets and also the discouragement of home consumption of tobacco by advertising and education.

Only in the case of sugar export the relative prices had a positive influence on the quantum of sugar exports. In the case of raw cotton, oilcakes and tobacco, the relative export prices had a negative influence on the quantum of exports of these commercial crops because excise duties on the export of these commodities were flexible. Whenever international prices of raw cotton, oilcakes and tobacco became low, the excise duties were reduced so that the export could be maintained even at the low international prices.

The above results clearly brought out as to how India, a sugar exporting country, turned into a net importer of sugar during 1984-85. The country's export surplus turned into domestic deficit, partly on account of a decline in the domestic production (supply side) of sugar and partly due to an increase in the per capita real national income (demand side). The production of sugar declined from 82.32 lakh tonnes in 1982-83 to 59.09 lakh tonnes in 1983-84 and to 61.43 lakh tonnes in 1984-85. The per capita net national income at constant prices increased from the preceding years at an annual rate of 5.9 per cent and 1.4 per cent during 1983-84 and 1984-85 respectively.

FLUCTUATIONS

Table II presents the coefficient of variation of the quantum of export, unit value, export value, terms of trade, purchasing capacity, domestic production and domestic wholesale prices of raw cotton, tobacco, oilcakes, sugar and also of general exports.

TABLE II. COEFFICIENTS OF VARIATION OF SIGNIFICANT INDICATORS OF EXPORTS OF SELECTED COMMERCIAL CROPS AND OF GENERAL EXPORTS

Indicator	Commercial crops				
	Raw cotton	Tobacco	Oilcakes	Sugar	General exports
Quantum	82.83	31.27	21.03	79.03	37.04
Unit value	61.80	58.57	54.12	72.67	58.23
Export value	123.56	82.98	54.32	145.46	88.01
Terms of trade	31.49	25.92	27.69	43.36	—
Purchasing capacity	61.95	33.96	30.99	113.88	—
Domestic production	17.56	19.05	15.89	41.89	—
Domestic wholesale prices	49.42	52.07	54.08	44.60	—

The coefficients of variation of the quantum of export of raw cotton, tobacco, oilcakes and sugar were higher than those of the respective domestic production of these commercial crops. This is because exports are made out of home production after meeting the needs of home consumption. Thus the fluctuation in the domestic production of the crop results in a more than proportionate fluctuation in the exportable surplus of that crop.

The coefficients of variation of the quantum and unit value of exports of sugar and raw cotton were higher than those of the corresponding indicators of tobacco and oilcakes. Thus exports of raw cotton and sugar suffered from relatively higher fluctuations as compared to the exports of tobacco and oilcakes.

CONCLUSION

During the period 1961-62 to 1983-84, the share of exports of raw cotton, tobacco, oilcakes and sugar declined both in terms of quantum and value. This may not be treated as an unsatisfactory indicator, since as the economy develops the share of exports of agricultural commodities in total exports is likely to decline. Evaluating the performance of commercial crops on the basis of net terms of trade, it appeared that none of the commercial crops and also general exports had done better during the period under study. Evalua-

ted on the basis of purchasing capacity, the performance of tobacco and sugar may be termed as satisfactory. The study indicated that the unit value, quantum, export value and purchasing capacity of sugar and raw cotton exports were highly unstable both in relation to the export of tobacco and oil-cakes and also in relation to general exports.

A positive export elasticity of production of sugar, raw cotton and oil-cakes suggested that exports of these commodities could be increased only by increasing the production of these commodities. Negative national income elasticity of exports of sugar, raw cotton and oilcakes showed that increasing incomes were putting pressure on available supplies, reducing thereby the exportable surplus. The pressure of a rise in per capita national income on exportable surplus was particularly strong in the case of sugar exports. Thus in order to neutralise the impact of increasing national income on the exportable surplus of commercial crops, we have to plan for a higher production rate of these commodities.

Now, since the production of sugar has picked up and the yield of sugar is comparable to other major exporters of sugar (Brazil and Cuba) in the world, it is hoped that the country would start exporting sugar in the near future. Domestic production of sugar can be enhanced substantially if choice is made between sugar production in relation to khandsari and gur production. It can be concluded that there appeared to be great scope for improvement in the export performance of these commodities provided domestic production is enhanced.