

**CONSTANT-MARKET-SHARE ANALYSIS OF
EXPORT GROWTH: The Indian case***

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ticity pessimism), internal supply bottlenecks or the combined effect of both the factors. This paper represents an attempt to discern the extent to which the export-performance of India is attributable to the combined effects of price and non-price factors, the so called total competitiveness effect.

II. India's Position in World Markets

India's export performance can be seen in the movement of her share in the world exports. It is, therefore, interesting to trace India's relative share in the world market vis-a-vis the growth trends in world exports and that of developing countries.

Table 1 depicts the position of relative share of India in world exports in relation to that of developing countries as a whole. India's share shows a declining trend. By 1976 the share had fallen to 0.27 per cent of the world export as compared to 2.05 per cent in 1951; 0.83 per cent in 1960 and 0.99 per cent in 1966. This decline in India's share in the world market has occurred at a time period when the share of developing countries as a whole has increased.

The results of regression analysis (Table 2) of quantum index of exports against time for the more recent period, 1961 to 1976, shows that whereas Indian exports recorded a modest rate of improvement of 4.1 per cent, world trade experienced a much higher growth rate of 8.1 per cent. Further, over the longer period, 1951 to 1976, Indian exports increased at a rate of 2.9 per cent, whereas the rate of growth of world exports and exports of developing countries recorded a much better performance of 7.3 and 6.7 per cent respectively. This underlines the poor performance record of India's export. It is, therefore, relevant to examine the factors responsible for India's poor export performance so that corrective measures could be identified. The constant-market-share model provides the analytical scaffolding to our exercise.

III. Constant-Market-Share Model: Basic Framework

The Constant-Market-Share Model (CMS)¹ is employed to describe a country's export growth. Here, the export performance of a particular country is compared with the 'world average'. For this, we define the following:

$$X_{ij}^0 = \text{Export by the } i\text{th country to the } j\text{th market in the base year,} \\ (i = 1, \dots, n; j = 1, \dots, m);$$

¹ CMS model has been extensively used in the literature on international trade, for instance, Tyszynski (1951), Baldwin (1958), Spiegeglas (1959), Narvekar (1960), Naya (1967), Leamer et. al. (1970), Richardson (1971), Benergi (1975), and Biswas (1982).

- X_{ij}^1 = export by the i th country to the j th market in the terminal year, ($i = 1, \dots, n$; $j = 1, \dots, m$);
 X_i^0, X_i^1 = total export by the i th country in the base year and terminal year respectively;
 r = proportionate change in total world exports;
 r_i = proportionate change in world exports of the i th commodity;
 r_{ij} = proportionate change in world export of the i th commodity to the j th market.

TEBLE 1

The relative share of world exports of developing countries and India:
1951-1976

| Years | Developing Countries | India (%) |
|-------|----------------------|-----------|
| 1951 | 25.30 | 2.05 |
| 1952 | 23.72 | 1.32 |
| 1953 | 28.57 | 0.98 |
| 1954 | 31.97 | 1.00 |
| 1955 | 30.79 | 0.99 |
| 1956 | 29.52 | 0.86 |
| 1957 | 28.15 | 0.88 |
| 1958 | 27.74 | 0.82 |
| 1959 | 26.57 | 0.85 |
| 1960 | 24.47 | 0.83 |
| 1961 | 23.36 | 0.85 |
| 1962 | 22.25 | 0.80 |
| 1963 | 23.35 | 0.83 |
| 1964 | 23.44 | 0.75 |
| 1965 | 22.88 | 0.73 |
| 1966 | 21.66 | 0.99 |
| 1967 | 21.23 | 0.89 |
| 1968 | 20.00 | 0.86 |
| 1969 | 19.67 | 0.80 |
| 1970 | 19.21 | 0.72 |
| 1971 | 18.60 | 0.63 |
| 1972 | 18.81 | 0.65 |
| 1973 | 23.20 | 0.54 |
| 1974 | 37.41 | 0.45 |
| 1975 | 34.90 | 0.47 |
| 1976 | 32.53 | 0.27 |

Source: International Financial Statistics, International Monetary Fund, Various Issues.

TABLE 2
Growth trends in world exports, exports of developing countries and of India
[log Y = a + bt]

| | Year | Constant term (a) | Regression Coefficient (b) | R ² | Annual Average Compound Rate of Growth (%) |
|---|-----------|-------------------|----------------------------|----------------|--|
| Quantum Index of World Export (1970 = 100) | 1951-1960 | 3.2369 | 0.0593* (17.4191) | 0.97* | 6.11 |
| | 1961-1976 | 3.8033 | 0.0777* (36.1651) | 0.99* | 8.08 |
| | 1951-1976 | 3.1633 | 0.0707* (54.4787) | 0.99* | |
| Quantum Index of Exports of Developing Countries (1970 = 100) | 1951-1960 | 3.2123 | 0.0810* (9.3167) | 0.92* | 8.44 |
| | 1961-1976 | 3.9605 | 0.0625* (30.9933) | 0.98* | 6.45 |
| | 1951-1976 | 3.2972 | 0.0647* (39.7485) | 0.98* | 6.68 |
| Quantum Index of India's Export (1970 = 100) | 1951-1960 | 4.2102 | -0.0008 (0.0822) | 0.0008 | -0.09 |
| | 1961-1976 | 4.2137 | 0.0399* (11.1342) | 0.90* | 4.07 |
| | 1951-1976 | 4.0379 | 0.0283* (10.4867) | 0.82* | 2.87 |

Note: Figures in the parenthesis denote 't' values.

* Indicates significance at 1 per cent level.

Source: Estimated from the *Monthly Bulletin of Statistics*, United Nations and *Year Book of International Trade Statistics*, United Nations, Various Issues

The total change, ΔX , in exports of the i th country is given by

$$\Delta X = \sum_{i=1}^n X_i^1 - X_i^0$$

This can be written as

$$\begin{aligned} \Delta X = & \left[\sum_{i=1}^n r X_i^0 \right] + \left[\sum_{i=1}^n r_i X_i^0 - r X_i^0 \right] + \\ & \left[\sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^0 - \sum_{i=1}^n r_i X_i^0 \right] + \left[\sum_{i=1}^n X_i^1 - X_i^0 - \sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^0 \right]. \end{aligned}$$

Therefore, the total change in exports can be decomposed into four components, as follows:

1. World trade effect = $\sum_{i=1}^n r X_i^0$
2. Commodity composition effect = $\sum_{i=1}^n (r_i X_i^0 - r X_i^0)$.
3. Market distribution effect = $\sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^0 - \sum_{i=1}^n r_i X_i^0$.
4. Competitiveness effect = $\sum_{i=1}^n (X_i^1 - X_i^0) - \sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^0$.

The magnitude of the world trade effect indicates what the change in exports for the particular country would have been if it had just maintained its share of world exports. A positive/negative sign of the commodity composition effect suggests that the particular country's exports are concentrated in commodity markets which have grown relatively fast/slowly. Similarly, the positive/negative sign of a market distribution effect indicates that exports of a reference country are concentrated in relatively fast/slow growing markets.

The general competitiveness effect is derived essentially as a residual, as indicated above. It is influenced by supply and demand considerations. Both price and non-price factors play a role with domestic factors being the major determinants. The positive/negative sign of the residual implies an improvement/deterioration in the competitiveness of exports.

It will be noted that the CMS model is merely an identity which does not have strong theoretical foundations. Also, as the CMS model does not have a stochastic basis, it cannot be considered useful for future projection of the market shares. Further, it assumes the relative prices of export products are constant. Despite the above limitations, the model helps in

identifying the areas wherein the export expansion of a country may be made.

IV. Decomposition Analysis of India's Export Growth

The competitiveness of India's export has been examined at one digit SITC product-groups, viz., (0.0) Food and live animals, (1.0) Beverages and tobacco, (2.0) Crude material inedible, except fuels, (3.0) Mineral fuels, lubricants and related materials, (4.0) Animal, vegetable oils and fats, (5.0) Chemicals, (6.0) Manufactured goods classified by materials, (7.0) Machinery and transport equipment, and (8.0) Miscellaneous manufactured articles. These product-groups at two digit level cover 55 commodities. Given the constraints of data, 29 foreign-markets are considered in the present study. These markets are: USA, UK, Japan, France, Germany Federal, Italy, Sweden, Ireland, Canada, Belgium-Lux, Netherlands, New Zealand, Switzerland, Norway, Austria, Finland, Israel, Greece, Indonesia, Korea Republic, Ivory Coast, Turkey, Singapore, Malaysia, Sri Lanka, Thailand, Kenya, Kuwait and Brazil. These countries together constitute 60 per cent of Indian exports in 1977. The term 'World Export' as traditionally defined is the summation of exports from developed, developing and centrally planned economies minus the Indian export. The two points of reference periods are 1970 and 1977. A study covering up to the year of 1970 is already available [Banerji (1975)]. The present study is primarily based on secondary sources, which include various volumes of the United Nations: [Commodity Trade Statistics (1970 and 1977), Year Book of International Trade Statistics (1970 and 1977)], and DGCI&S: [Monthly Statistics of Foreign Trade of India (1970 and 1977)].

In the framework of CMS model, an attempt is made to examine the competitiveness of India's export. The analysis of Table 3 suggests that as compared to the rest of the world India's export of traditional commodities is noncompetitive, whereas the export of non-traditional commodities is competitive. The above finding thus indicates the failure of India to maintain its export market share with respect to the traditional commodities vis-a-vis the rest of the world. In contrast, a positive sign of competitiveness in respect of non-traditional sector has underlined that India vis-a-vis the rest of the world has maintained her market share in terms of competitiveness.

The effect of competitiveness of export across the one-digit-SITC-product groups is shown in Table 4. Analysis of the table presents a mixed pattern. In the export groups of Food and live animal, Crude materials inedible, except fuels, and in Mineral fuels, lubricants and related materials the signs of the competitiveness residual are negative. In the rest of the

traditional export group the signs of competitiveness are positive. It is satisfying to note that the export product-group of Manufactured goods classified by materials which constitutes a significant share of India's export has performed quite well vis-a-vis the rest of the world.

All product-groups in the non-traditional sector have the positive signs of competitiveness. That is to say India has maintained her market share vis-a-vis the rest of the world. This seems to have happened primarily due to improved competitiveness. It may be pointed out here that studies by Banerji (1975), and Biswas (1982) have shown the lack of competitiveness of India's export during 1960s. Obviously since then the competitiveness of India's aggregate export has improved substantially during 1970-77. Indian exports of Chemicals and Machinery and transport equipment were more competitive during 1970-77 respectively by seven and around two times as compared to 1967-68. The competitiveness of India's export of Manufactured goods classified by materials was negative by 20 million US\$ [Biswas (1982)], in 1967-68, but improved significantly in the positive

TABLE 3

A summary of analysis of India's export performance: 1970-77

| (Value in Million US \$) | | | |
|--------------------------------------|--------------------------------------|---|----------------------|
| | Traditional export commodities | Non-tradi- tional Ex- port commo- dities | All commo- dities |
| 1. Export in 1970 | 1196.68 | 93.54 | 1290.22 |
| 2. Export in 1977 | 3525.65 | 683.58 | 4209.23 |
| 3. Change in Export 1970-77 | 2328.97 | 590.04 | 2919.01 |
| 4. Of the above due to: | | | |
| (i) World trade effect | 2181.55 (93.67) | 243.27 (41.23) | 2425.18 (83.08) |
| (ii) Commodity composition effect | 482.10 (20.70) | 3.01 (0.51) | 485.29 (16.62) |
| (iii) Market distribution effect | -269.00 (-11.55) | 96.29 (16.32) | -172.79 (-5.91) |
| (iv) Competitiveness effect | -65.68 (-2.82) | 247.46 (41.94) | 181.33 (6.21) |
| Total | 2328.97 (100.00) | 590.04 (100.00) | 2919.01 (100.00) |

Note: Figures in brackets indicate percentage values.

Source: *Commodity Trade Statistics*, United Nations, *Year Book of International Trade Statistics*, United Nations, *Monthly Statistics of Foreign Trade of India*, DGCI&S, Calcutta, Various Issues.

TABLE 4

Analysis of India's export performance: 1970-1977

| SITC Code No. | Description of Commodities | (In Million US\$) | | | | | | |
|--|---|-------------------|----------------|--------------------------|--------------------|------------------------------|----------------------------|------------------------|
| | | Export in 1970 | Export in 1977 | Change in export 1970-77 | World trade effect | Commodity composition effect | Market distribution effect | Competitiveness effect |
| A. Traditional Commodities | | | | | | | | |
| 0.0 | Food and live animals | 312.93 | 1038.68 | 725.75 (100.00) | 778.13 (107.22) | 572.14 (78.83) | -569.41 (-78.83) | -55.11 (-7.59) |
| 1.0 | Beverages and tobacco | 32.48 | 88.30 | 55.82 (100.00) | 52.27 (93.64) | 2.83 (5.07) | -21.66 (-38.80) | 22.38 (40.09) |
| 2.0 | Crude materials inedible, except fuels | 383.80 | 697.85 | 314.05 (100.00) | 520.73 (165.81) | -77.63 (-24.72) | -32.99 (-10.50) | -96.06 (-30.59) |
| 3.0 | Mineral fuels, lubricants and related materials | 13.81 | 8.13 | -5.68 (100.00) | 94.42 (1662.32) | -13.83 (-243.48) | -1.80 (-31.69) | -84.47 (-1487.15) |
| 4.0 | Animal, vegetable oils and fats | 0.26 | 26.21 | 25.95 (100.00) | 0.46 (1.77) | 0.04 (0.15) | -0.21 (-0.81) | 25.67 (98.89) |
| 6.0 | Manufactured goods classified by materials | 453.40 | 1667.08 | 1213.68 (100.00) | 736.12 (60.65) | -1.25 (-0.10) | 357.09 (29.42) | 121.72 (10.03) |
| B. Non-traditional Export Commodities | | | | | | | | |
| 5.0 | Chemicals | 14.83 | 80.27 | 65.44 (100.00) | 40.20 (61.44) | -2.64 (-4.04) | -3.72 (-5.69) | 31.60 (48.29) |
| 7.0 | Machinery and transport equipment | 31.58 | 164.02 | 132.44 (100.00) | 73.70 (55.66) | -1.27 (-0.96) | 14.65 (11.06) | 45.35 (34.24) |
| 8.0 | Miscellaneous manufactured articles | 47.13 | 439.29 | 392.16 (100.00) | 129.52 (33.03) | 6.88 (1.76) | 85.23 (21.73) | 170.53 (43.48) |

Note: Figures in brackets indicate percentage values.

Source: Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India, DGCI&S, Calcutta, Various Issues.

direction by 121.72 million US\$ in 1970-77. The competitiveness of export products like Mineral fuels, lubricants and related materials worsened during both the periods of 1960s and 1970s. However, the analysis generally underlines the improved position of India's export in terms of competitiveness in non-traditional items.

The analysis at one digit level might have incorporated aggregation bias. It would, therefore, be more interesting to analyse the nature of competitiveness at a greater level of disaggregation of export commodities. India's export growth attributable to the effect of competitiveness in respect of top 21 two digit SITC commodities is presented in Table 5. The share of each commodity was one per cent or more of the total value of India's export in 1977. The analysis of Table 5 indicates that under the broad export group of Food and live animals (0.0), the important products have negative signs for competitiveness. These products are Coffee, Tea, Cocoa and Spices, and Fruits and Vegetables. In the product group of Crude materials (inedible), except fuels (2.0), all items (excepting the Crude animals and Vegetable materials n.e.s.) have the negative signs. Under the broad group of Manufactured goods classified by materials (6.0), and Beverages and Tobacco (1.0), all products excepting Iron and steel and Leather dressed, fur, etc., have the positive signs. This is in confirmity with earlier results regarding the decline in competitiveness in traditional exports.

The above feature of competitiveness is seen all the more vividly when we examine the change in the non-traditional sector. The competitiveness effect is positive in all important commodities (except Miscellaneous manufactured articles) in the non-traditional sector. It is satisfying to note that the growth in India's export over the period for engineering goods is explainable mainly in terms of the large positive competitiveness effect.

V. Determinants of Competitiveness of Exports

As argued earlier, the state of competitiveness of export products is determined by the numerous price and non-price factors which primarily belong to the side of external demand and internal supply. The factors on external demand constitute the elements such as price competitiveness, quality of the products, production and trade policies of the buyer countries, etc. The internal supply of the export product is determined by factors such as pressure of internal demand, cost structure and the export promotion policies.

As far as the factors on demand side are concerned it is stressed that the internal prices of India's engineering goods have exceeded the international prices by 40-60 per cent and in numerous products the price difference even exceeds 100 per cent [Patil (1970)]. The non-price factors

TABLE 5

Change in exports due to competitiveness effect of India's top 21 product-groups (SITC two digit level) between 1970-1977

| SITC Product Groups | Percentage share in total export in 1977 | Change due to competitiveness effect (in million US\$) |
|---|--|--|
| A. Traditional Items | | |
| 0.0 Food and live animals | | |
| 03 Fish and fish preparations | 3.59 | 14.54 |
| 05 Fruits and vegetables | 3.19 | -22.75 |
| 06 Sugar, sugar preparations and honey | 3.02 | 40.86 |
| 07 Coffee, tea, cocoa and spices | 9.67 | -170.90 |
| 08 Feeding stuff for animals | 5.16 | 78.04 |
| 1.0 Beverages and tobacco | | |
| 1.2 Tobacco and tobacco manufactures | 2.06 | 22.14 |
| 2.0 Crude materials inedible except fuels | | |
| 22 Oil seeds, oil nuts and oil kernals | 1.43 | -4.07 |
| 26 Textile fibres | 1.05 | -30.72 |
| 28 Metalliferous and metal scraps | 6.00 | -39.34 |
| 29 Crude animals and vegetable materials n.e.s. | 2.14 | 15.26 |
| 61 Leather dressed, fur etc. | 5.30 | -338.68 |
| 65 Textile yarn fabrics etc. | 14.41 | 42.95 |
| 66 Non-metallic mineral manufactures n.e.s. | 6.24 | 276.36 |
| 67 Iron and Steel | 7.79 | -35.29 |
| 68 Non-ferrous metals | 3.58 | 126.25 |
| 69 Metal manufactures n.e.s. | 2.64 | 34.70 |
| B. Non-traditional items | | |
| 7.0 Machinery and transport equipment | | |
| 71 Machinery other than electric | 2.38 | 27.09 |
| 72 Electric machinery apparatus and appliances | 1.67 | 16.88 |
| 73 Transport equipment | 1.86 | 1.38 |
| 8.0 Miscellaneous manufactured articles | | |
| 84 Clothing | 6.54 | 166.48 |
| 89 Miscellaneous manufactured articles | 1.96 | -1.03 |

*Competitiveness effect is measured by the following formula:

$$\sum_{i=1}^n (X_i^1 - X_i^0) - \sum_{i=1}^n \sum_{j=1}^m r_{ij} X_{ij}^0$$

Source: Commodity Trade Statistics, United Nations, Year Book of International Trade Statistics, United Nations, Monthly Statistics of Foreign Trade of India, DGCI&S, Calcutta, Various Issues.

are also important. It is pointed out that the export demand of electric motors and transformers lagged behind in world export market mainly due to 'larger size' and heavier weights [Frankena (1974)]. Also, the export demand of diesel engines, has stagnated mainly due to their 'higher weights', 'lower speed' and because they are 'water cooled' with 'horizontal size'. On the contrary, foreign made engines are of superior quality with 'higher speed', are 'air cooled' and have 'vertical size' [Frankena (1974)]. It is noted that the packaging of electric fans and sewing machines 'compares unfavourably with those of main competitors from Japan and Hongkong' [Rao (1970)].

The above is only a partial picture. The analysis needs to be corroborated by the role played by internal supply side factors on India's export competitiveness. Table 6 examines the cost structure² of Indian export vis-a-vis the rest of the world. This indicates that annual labour cost (i.e., number of labourers to produce one dollar worth of output) has declined in 1977 as compared to 1970.

The decline in labour cost is however more marked in the case of rest of the world compared to India. At individual product level also the findings are similar. In terms of material cost (i.e., the annual requirement of material cost to produce one dollar worth of output), except the Mineral fuels, lubricants and related materials (3.0), the decline in material cost is more marked in all the export products pertaining to the rest of the world vis-a-vis India. It is thus evident that Indian export is less competitive in terms of the labour and material cost factors.

It seems clear that the role of external demand factors and cost factor of internal supply has negative influence on competitiveness of India's exports. It is, therefore, pertinent to search for factors that might be responsible for favourable competitiveness of India's exports. In this context the role of India's trade policies cannot be disregarded. Under the broad head of 'trade and export promotion' there have been various kinds of policy incentives given to enhance India's export performance. These include numerous general and some selective incentives, such as, duty drawback, cash compensatory support, cash assistance, import replenishment scheme. It is notable that in relative terms the expenditure on export promotion was more in India as compared to the countries like U.K., Italy, Japan, France, USA, Germany and Canada (Table 7). Moreover, the budgetary expenditure on 'trade and export promotion' in India increased from 42 crores to 295.93 crores [Verghese (1978)] from 1970 to 1977. The

² Ideally, the cost structure of the export-products should take into account the labour, capital and material costs. However, owing to the inadequacy of the information, cost structure is only examined in terms of labour and material cost.

TABLE 6
Cost structure of Indian export vis-a-vis rest of the world

| SITC Code No. | Description of Sectors | L/O (in Nos.) | | | | M/O (in Million US\$) | | | |
|---------------------|---|---------------|------|----------------------|------|-----------------------|------|----------------------|------|
| | | India | | Rest of the world | | India | | Rest of the world | |
| | | 1970 | 1977 | 1970 | 1977 | 1970 | 1977 | 1970 | 1977 |
| 0.0 | Food and live animals and vegetable and oil fats | 181 | 166 | 31 | 12 | 0.88 | 0.89 | 0.64 | 0.71 |
| 1.0 | Beverage and tobacco | 286 | 324 | 32 | 12 | 0.72 | 0.82 | 0.36 | 0.63 |
| 2.0 | Crude materials, inedible except fuels | 318 | 177 | 51 | 20 | 0.68 | 0.76 | 0.52 | 0.56 |
| 3.0 | Mineral fuels, lubricants and related material | 54 | — | 26 | 6 | 0.49 | 0.67 | 0.68 | 0.64 |
| 5.0 | Chemicals | 147 | 74 | 33 | 13 | 0.68 | 0.80 | 0.45 | 0.57 |
| 6.0 | Manufactured goods classified by materials | 343 | 180 | 50 | 24 | 0.72 | 0.79 | 0.58 | 0.61 |
| 7.0 | Machinery and transport equipment | 335 | 148 | 46 | 11 | 0.69 | 0.73 | 0.54 | 0.72 |
| 8.0 | Miscellaneous manufactured articles | 515 | 286 | 63 | 27 | 0.62 | 0.67 | 0.43 | 0.43 |
| | Overall | 271 | 144 | 44 | 15 | 0.73 | 0.79 | 0.55 | 0.65 |

Where, L = Represents labourers in numbers.

O = Represents output in million US\$.

M = Represents material cost in million US\$.

Source: United Nations, Year Book of Industrial Statistics, 1970 and 1977, Various Issues.

TABLE 7

Expenditure on export
promotion: India and principal developed countries

| Country | (Million US\$) | |
|--------------|----------------|-------|
| | 1970 | 1975 |
| U.K. | 31.8 | 9.8 |
| Italy | 27.4 | 39.9 |
| Japan | 35.7 | 31.5 |
| France | 19.2 | 27.3 |
| U.S.A. | 15.9 | 23.7 |
| West Germany | 8.3 | 10.8 |
| Canada | 13.1 | 10.7 |
| India | 55.2 | 170.2 |

Source: Verghese, [(1978), p. 251].

amount of duty drawback sanctioned by the Customs department increased from 33 crores in 1970-71 to 120 crores in 1976-77 [Verghese (1978)].

Table 8 gives the percentage of cash assistance to FOB value of export. This shows that average cash assistance was largest (17.64 per cent) for the sports goods followed by engineering (15.6 per cent) and chemical products (14.16 per cent). Also, the mode of import replenishment scheme (Table 9) varied between the range of 2 to 66 per cent. The export items covered under this scheme are gems and jewellery, woollen textiles, hosiery and mixed fabrics, plastics, natural fibre products, cinematographic films, engineering goods and chemicals.

Another measure for subsidisation is the effective exchange rate across the export items. Table 10 gives the effective exchange rate for various commodity groups during 1976-77. This includes the benefits due to the cash assistance and import replenishment schemes. These effective exchange rates varied from Rs. 9.4005 per US\$ in Cashew Kernels to Rs. 25.5157 per US\$ for gem and jewellery products. The rate for export groups like engineering, chemicals and allied products and miscellaneous export products are estimated at Rs. 12.6637, 12.5644 and 10.0241 respectively. In items like cotton textiles and leather and leather goods, the effective exchange rate was seen to be Rs. 10.9241 and Rs. 11.5572 respectively.

The above discussion reveals the extent to which the Indian trade regime was oriented towards promotion of export through various policy measures. However, by and large, the degree of policy support was more intensive in modern sectors like Chemicals, Machinery and transport equipment and

TABLE 8
Percentage of cash assistance to FOB value of exports

| Sl. No. | Products | 1970-71 | 1971-72 | 1972-73 | 1973-74 | 1974-75 | 1975-76 | 1976-77 | Simple Average for the period |
|---------|--|---------|---------|---------|---------|---------|---------|---------|-------------------------------|
| 1. | Engineering goods | 14.5 | 15.9 | 16.7 | 15.9 | 16.1 | 14.8 | 15.3 | 15.6 |
| 2. | Chemicals and allied products and paper products | 13.7 | 15.3 | 15.3 | 14.4 | 14.4 | 13.3 | 12.7 | 14.2 |
| 3. | Plastic goods | 9.4 | 11.3 | 9.3 | 9.3 | 9.2 | 9.7 | 10.1 | 9.8 |
| 4. | Sports goods | 14.5 | 19.9 | 18.9 | 19.7 | 19.4 | 16.2 | 14.9 | 17.6 |
| 5. | Woolen carpets, rugs and druggets | 10.5 | 10.1 | 9.3 | 10.2 | 5.7 | 11.0 | 15.1 | 10.3 |
| 6. | Processed good items | 8.5 | 7.9 | 11.0 | 7.4 | 8.0 | 13.8 | 12.8 | 9.9 |
| 7. | Wollen blended knitwear | — | — | — | — | — | 15.0 | 12.1 | 13.6 |
| 8. | Fish and fish preparations | — | — | — | — | — | 6.1 | 4.9 | 5.5 |
| 9. | Instant teas, packet teas and tea bags | — | — | — | — | — | 10.0 | 9.9 | 10.0 |
| 10. | Jute manufactures | — | — | — | — | — | 9.8 | 9.2 | 9.5 |
| 11. | Rayon and synthetics | — | — | — | — | — | 14.9 | 13.9 | 14.4 |
| 12. | Finished leather and leather manufactures | — | 8.4 | 8.5 | 5.2 | 5.6 | 5.2 | 6.1 | 6.5 |
| 13. | Natural silk fabrics, garments and made-ups | — | 9.9 | 10.1 | 9.2 | 7.6 | 9.6 | 10.9 | 9.6 |
| 14. | Instant coffee extracts and essence | — | — | — | — | — | — | 10.0 | — |
| 15. | Walnut kernels and walnut in shell | — | — | — | — | 5.1 | 8.7 | 12.1 | 8.6 |
| 16. | Iron and steel scrap (ferrous scrap) | 5.0 | 4.5 | 5.0 | 5.0 | 3.8 | 19.9 | — | 7.2 |
| 17. | Decorticated cotton seed cakes | 12.6 | 12.6 | 10.2 | 10.1 | 10.8 | 10.8 | 18.6 | 14.2 |
| 18. | Groundnut cake extractions | 3.2 | 10.1 | 1.9 | 2.9 | — | — | — | 4.5 |
| 19. | Prime iron and steel | 14.2 | 14.2 | 17.9 | 16.0 | — | 5.9 | 4.9 | 12.2 |
| 20. | Iron ore and maganese ore | 0.5 | 7.2 | 6.6 | — | — | — | — | 4.8 |
| 21. | Machine twisted/curled coir fibre and carpets | 14.3 | 14.5 | 14.3 | 6.9 | 4.7 | 5.1 | 6.3 | 9.4 |
| 22. | Rice bran (extraction) | — | — | 13.7 | N.A. | 1.0 | — | 7.3 | 7.3 |

Source: Verghese, [(1978), p. 258 (Table 14)].

TABLE 9

Summary of import replenishment during 1976-77 (%)

| Items | Import Replenishment | | |
|---|----------------------|------|------|
| | High | Low | Mode |
| A: Engineering goods | 80.0 | 5.0 | 20.0 |
| B: Chemical and allied products | 75.0 | 1.0 | 20.0 |
| C: Plastics | 60.0 | 8.0 | 50.0 |
| D: Leather and leather goods and other animal products | 40.0 | 1.0 | 15.0 |
| E: Sports goods | 15.0 | 1.0 | 15.0 |
| F: Fish and fish products | 35.0 | 5.0 | 10.0 |
| G: Processed food | 25.0 | 1.0 | 10.0 |
| H: Handicrafts | 50.0 | 2.0 | 10.0 |
| I: Cashew Kernel | 5.0 | 5.0 | 5.0 |
| J: Tobacco and tobacco products | 60.0 | 3.0 | 10.0 |
| K: Carpets, rugs and druggets | 40.0 | 15.0 | 20.0 |
| L: Woollen textiles hosiery and mixed fabrics | 70.0 | 30.0 | 50.0 |
| M: Coir products | 30.0 | 5.0 | 5.0 |
| N: Cotton textiles | 6.5 | 6.5 | 6.5 |
| O: Readymade garments (other than natural silk) | 52.0 | 2.5 | 9.0 |
| P: Natural silk fabrics, garments | 20.0 | 10.0 | 20.0 |
| Q: Stainless steel products | 75.0 | 50.0 | 50.0 |
| R: Ship repairing | 20.0 | 20.0 | 20.0 |
| S: Gem and Jewellery | 80.0 | 10.0 | 66.0 |
| SS: Gem and jewellery sales to foreign tourists | 50.0 | 25.0 | 50.0 |
| T: Cinema tographic films | 50.0 | 25.0 | 25.0 |
| U: Natural fibre products | 45.0 | 5.0 | 45.0 |
| V: Non-cellulosic products | 40.0 | 31.0 | 35.0 |
| W: Cellulosic products | 37.0 | 5.0 | 5.0 |
| X: Mixed blended products from mixture of cotton cellulosic fibre or yarn/nylon/poly-ester fibre or yarn natural silk (mode values) | 36.0 | 5.0 | 28.0 |
| Y: Miscellaneous export products | 35.0 | 2.0 | 2.0 |
| (All items) MGDE | 80.0 | 1.0 | 20.0 |

Source: Verghese, [(1978), p. 259].

TABLE 10

Effective exchange rate for various commodity groups during 1976-77

| Items | Effective Exchange Rates | Weights |
|--|--------------------------|---------|
| A: Engineering goods | 12.6637 | 10.40 |
| B: Chemicals and allied products | 12.5644 | 3.70 |
| C: Plastics | 18.7541 | 0.20 |
| D: Leather and leather goods and other animal products | 11.5572 | 5.10 |
| E: Sports goods | 12.0825 | 0.20 |
| F: Fish and fish products | 11.9073 | 3.20 |
| G: Processed food | 10.9159 | 1.50 |
| H: Handicrafts | 11.4112 | 0.90 |
| I: Cashew Kernel | 9.4005 | 2.50 |
| J: Tobacco and tobacco products | 9.9228 | 2.50 |
| K: Carpets, rugs and druggets | 12.2795 | 1.00 |
| L: Woollen textiles, hosiery and mixed fabrics | 17.8610 | 0.04 |
| M: Coir products | 9.8705 | 0.20 |
| N: Cotton textiles | 10.9841 | 5.40 |
| O: Readymade garments (other than natural silk) | 11.2858 | 4.80 |
| P: Natural Silk fabrics garments | 12.8376 | 0.30 |
| Q: Stainless Steel products | 17.8610 | 0.05 |
| R: Ship repairing | 11.1631 | 0.30 |
| S: Gem and Jewellery | 25.5157 | 0.20 |
| SS: Gem and Jewellery sales to foreign tourists | 17.8610 | 1.00 |
| T: Cinematographic films | 11.9073 | 0.20 |
| U: Natural fibre products | 16.2373 | 0.02 |
| V: Non-cellulosic products | 15.1132 | 0.10 |
| W: Cellulosic products | 10.8106 | 0.05 |
| X: Mixed blended products from mixture of cotton cellulosic fibre or yarn/nylon/polyester fibre or yarn natural silk (mode values) | 14.2640 | 0.20 |
| Y: Miscellaneous export products | 10.0241 | 0.40 |

Source: Verghese, [(1978), p. 260].

TABLE 10

Effective exchange rate for various commodity groups during 1976-77

| Items | Effective Exchange Rates | Weights |
|--|--------------------------|---------|
| A: Engineering goods | 12.6637 | 10.40 |
| B: Chemicals and allied products | 12.5644 | 3.70 |
| C: Plastics | 18.7541 | 0.20 |
| D: Leather and leather goods and other animal products | 11.5572 | 5.10 |
| E: Sports goods | 12.0825 | 0.20 |
| F: Fish and fish products | 11.9073 | 3.20 |
| G: Processed food | 10.9159 | 1.50 |
| H: Handicrafts | 11.4112 | 0.90 |
| I: Cashew Kernel | 9.4005 | 2.50 |
| J: Tobacco and tobacco products | 9.9228 | 2.50 |
| K: Carpets, rugs and druggets | 12.2795 | 1.00 |
| L: Woollen textiles, hosiery and mixed fabrics | 17.8610 | 0.04 |
| M: Coir products | 9.8705 | 0.20 |
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| R: Ship repairing | 11.1631 | 0.30 |
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| U: Natural fibre products | 16.2373 | 0.02 |
| V: Non-cellulosic products | 15.1132 | 0.10 |
| W: Cellulosic products | 10.8106 | 0.05 |
| X: Mixed blended products from mixture of cotton cellulosic fibre or yarn/nylon/polyester fibre or yarn natural silk (mode values) | 14.2640 | 0.20 |
| Y: Miscellaneous export products | 10.0241 | 0.40 |

Source: Verghese, [(1978), p. 260].

Miscellaneous manufacturing articles. Considering this, one may infer that the apparent favourable competitiveness observed in Manufacturing goods classified by material, Chemicals and allied products, Machinery and transport equipment and Miscellaneous manufacturing articles has been mainly the outcome of the generous policy support.

VI. Concluding Remarks

During the period 1970-77, Indian exports increased by 181.33 million US\$ on account of an improvement in competitiveness. The analysis of product-wise-competitiveness shows that traditional exports like Food and Live animals, Crude materials inedible, except fuels, Mineral fuels, lubricants and related materials, are non-competitive as compared to the rest of the world. In contrast to this, India's exports of Beverages and tobacco, Animal vegetable oils and fats and Manufactured goods classified by materials are competitive vis-a-vis rest of the world. In the non-traditional group all export products in India as compared to the rest of the world are found to be competitive. These products are: Chemicals, Machinery and transport equipment and Miscellaneous manufactured articles. Therefore, it appears that incentives need to be continued in the case of commodities of manufacturing sector and enhanced for the non-traditional sector to sustain their export growth.

A number of caveats need, however, to be made to the analysis. First, the study is based on two points of time and as such fails to reveal the nature of competitiveness of exports on a year to year basis. Second, the constant market share model used in the study includes almost all export determining variables such as price and non-price factors. From this it is difficult to separate the effect of each factor explicitly.

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