CHAPTER V

EXPORT PERFORMANCE OF INDIA

A LONG-RUN ANALYSIS:

5.1: INTRODUCTION :

In the previous three chapters, we have observed that both theoretically and statistically exports have played a positive role in the process of development of India. It is against this background that long-run export performance of India is to be judged. Before we do so, it may be noted at this stage that Indian export policy during the period of twenty years from 1951-52 to 1970-71 developed from gross neglect or even positive discouragement to growing encouragement culminating into the 1966 devaluation.[1] The former corresponds to the period 1951-52 to 1960-61 and the latter to the period 1961-62 to 1970-71.

The First Five Year Plan was an agricultural Plan in the sense that it placed greater emphasis on agricultural

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[1]Bhagwati J.N. & Padma Desai, India: Planning for Industrialization, Industrialization and Trade Policies since 1951, (London: Oxford University Press, 1970).

production. The implicit idea behind this emphasis is balanced programme of investment in which increased food production was needed to stabilize the prices of the wage goods before expansion of industrial output in the subsequent plans. During this Plan, the export sector was totally neglected due to the optimistic attitude on export front. This was naturally due to the Korean war boom which gave great fillip to Indian exports prior to the First Plan.

The Second Five Year Plan placed greater emphasis on heavy industry, partly on the assumption of stagnant import capacity represented by stagnant export earnings. This hypothesis of stagnant exports was based on low price and income elasticity of demand for India's traditional exports like jute, cotton textiles and tea.[2] Alternatively, it was also held that the failure of Indian exports to increase during this period was not so much due to low price and income elasticity of demand for Indian exports as to the utter neglect by the Indian planners on the one hand and inelastic supply of the exportables due to the inflationary demand pressure internally, on the other.[3]

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[2]S.J. Patel, "Export Prospects and Economic Growth - India," Economic Journal, September, 1959.

[3]Prof. Manmohan Singh, India's Export Trends, (Oxford: Clarendon Press, 1964).

In order to meet the growing import bill, the Third Five Year Plan placed great emphasis on import substitution on one hand and export promotion on the other. The various measures undertaken by the government to boost exports can be divided into three: (i) creation of institutional facilities for exports, (ii) export incentive schemes, and (iii) devaluation of the Indian rupee in 1966. In the first group of measures can be placed, among other things, the establishment of Export Promotion Councils for various groups of commodities, recognition of many export houses, formation of Market Development Fund to find new markets for the existing commodities as well as for the new commodities, the establishment of the various specialised institutions for stimulating and supporting the export effort of the country, and above all, the constitution of high level body, namely, Board of Trade, to review and advise the government on all aspects of trade and commerce. Among the export incentive schemes, the drawbacks on import duty paid by exporters, refund of excise duty, and the import replenishment scheme may be mentioned. Finally, it was contended since long[4] that there was a case for devaluation of the over-valued Indian rupee, which was

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[4] J. Bhagwati, "More on Devaluation," Economic Weekly, October, 1962.

devalued in June 1966, for the purpose of stimulating exports and import substitution.

The natural consequence of this gross neglect on the export front during the first two Plans has been sluggish growth of Indian exports. It has grown at an average annual rate of 0.024 % between 1951-1958, ranking India 33rd among the 40 developing countries considered in Table 5.1 ~~below~~ :

From the Table it will be observed that the maximum, mean and median growth rates of exports of forty developing countries have been .76 %, .128 % and .085 % respectively. These rates are much higher than those of Indian exports during the period.

In spite of the various export promotion measures during and after the Third Five Year Plan, Indian export growth has been 3.9 % during 1960-1968, ranking India 34th among the 46 developing countries considered as can be seen from the Table. The maximum, mean and the median growth rates of exports of these 46 countries have been 52.6 %, 6.3 % and 5.4 % respectively. In comparison with these growth rates, Indian growth rate is quite low during the 1960-1968 period also.

Finally, if period 1951-1968 is considered, the performance looks even more depressing. Thus during the period,

Table 5.1

Growth rate of Exports of Developing Countries (1951-68)

Sr. No.	Item	Growth rate of exports[1] (1951-58)	Annual average Growth rate of exports (1960-68)	Annual average Growth rate of exports (1950-68)
(1)	(2)	(3)	(4)	(5)
1:	No.of countries considered	40	46	43
2:	India	0.024	03.90	02.20
3:	Rank of India[2]	33	34	43
4:	Maximum	0.760	52.60	33.00
5:	Mean	0.128	06.30	06.10
6:	Median	0.085	05.40	05.10
7:	Std. Devi.	1.237	15.29	15.60
8:	(4) - (2)	+0.746	+48.70	+30.80
9:	(5) - (2)	+0.104	*04.60	+03.80
10:	(6) - (2)	+0.061	+02.40	+03.90
11:	(Q_1)- (2)	+0.126	+04.00	+05.50
12:	(Q_3)-(2)	+0.009	+00.80	+01.10

Source: (1) J.D. Coppock, International Economic Instability, Mc-Grow Hill Co., New York, 1962

(2) UNCTAD Secretariate, U.N.O., New York.

(3) International Financial Statistics, IMF, 1971.

1: Slope of least-square line through logarithms of annual export proceeds.

2: Countries are arranged in descending order according to the values of export growth rate.

while the world exports have grown at an annual average rate of 7.9 % and those of the developed and the developing countries at the rate of 8.5 % and 4.7 % respectively. Indian exports growth has been at 2.2 %, ranking India 43rd among 53 developing countries as shown in the Table. The corresponding maximum, mean and median growth rates have been 33.0 %, 6.1 % and 5.1 % respectively. What is more significant is that Indian exports growth is 50 % lower than the corresponding rate at the third quartile rank. In short, the growth of Indian exports has been significantly below normal even in comparison with those of some of the developing countries during the period 1951-1968. This requires systematic probe into the various causes of such an export growth of Indian economy.

Accordingly, this chapter seeks: (i) to test the hypotheses of demand and supply deficiency for the growing export lag of Indian exports; and (ii) to examine the effects of devaluation of Indian rupee in 1966 on Indian exports. The next section 5.2 is devoted to the sense in which Indian exports can be said to be lagging. Section 5.3 tests the demand and supply deficiency hypotheses of Indian export-lag; while section 5.4 examines the effects of the devaluation on Indian exports. This is followed by summary and conclusion in section 5.5.

5.2: MEANING OF LAGGIND INDIAN EXPORTS :

It may be recalled that during the period 1951-68, while the world exports have grown at an annual rate of 7.9 % and those of the developed and the developing countries at the rate of 8.5 % and 4.7 % respectively, Indian exports growth has been of the order of 2.2 % per annum. The questions that are to be asked are: (i) In what sense Indian exports are lagging? and (ii) What are the underlying causes for its lagging, and in turn, its slow growth? In this section effort will be made to answer the first question, leaving the second question to be answered in the next section.

In the literature of export-growth relationship of developing countries, in general and India in particular, the term 'export lag' is used in a variety of sense. They are:

Firstly, in the context of economic development, 'export lag' is used to mean unfavourable effects of exports on economic development.[5] Indian exports are not lagging in this sense, as per our conclusions from chapters III and IV.

Secondly, in the context of world exports trend, it is taken to mean declining share of country's exports in

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[5] Prebisch. op.cit.

the rising world exports.[7] In short, exports of the country are lagging behind world exports. Indian exports lag in this sense as can be observed from Table 5.2. This is reflected from the declining percentage share of Indian exports in the world exports as shown in column (4) of the table.

Thirdly, in the context of balance of payment analysis, it implied to mean exports exceeding imports. In other words, exports are lagging behind imports. Indian exports lag behind Indian imports as reflected from the export/import ratio shown in column (4) of Table 5.3. However, the lag goes on decreasing from period to period and ultimately in the year 1970-71, the lag has turned out to be only 6 % of India's imports.

Finally, in the context of planning, it is used to mean actual export proceeds fall short of the planned export earnings. During the First Plan, the export sector was totally neglected due to the optimistic attitude towards export front. As such, no planned estimates were made for the sector. But during the Second Plan, it was stated "exports will rise moderately from an estimated level of Rs. 573 crores in 1956-57 to Rs.615 crores in 1960-61."[8]

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[7] V.K.R.V. Rao, op.cit.

[8] The Second Five Year Plan, op.cit.

Table 5.2

Trends in world and Indian expprts (1951-70)

(Million US $)

Year	World exports	Indian exports	(3) as % of (2)
1	2	3	4
1951	81290	1646	1.90
1952	78030	1299	1.50
1953	78300	1116	1.30
1954	82300	1182	1.30
1955	90800	1300	1.30
1956	100500	1379	1.30
1957	109700	1403	1.20
1958	105700	1221	1.10
1959	113600	1308	1.10
1960	127900	1331	1.00
1961	133700	1387	1.00
1962	141400	1403	0.93
1963	153900	1626	1.00
1964	172200	1705	0.93
1965	186400	1687	0.83
1966	203400	1640	0.76
1967	214190	1613	0.71
1968	239570	1753	0.71
1969	272590	1834	0.64
1970	312010	2027	0.69

Source: As per Table XV from the Appendix.

Table 5.3

Trends in India's exports and imports (1951-52 to 1970-71)

(Rs. Crores)

Year	Imports	Exports	(3) as % of (2)
(1)	(2)	(3)&	(4)
1951-52	963	730	76
1952-53	633	602	95
1953-54	592	540	91
1954-55	690	597	87
1955-56	773	641	83
1956-57	1102	635	58
1957-58	1233	669	54
1958-59	1029	576	56
1959-60	932	627	67
1960-61	1081	630	58
1961-62	996	668	67
1962-63	1079	681	63
1963-64	1217	802	66
1964-65	1388	801	58
1965-66	1350	783	58
1966-67	1991	1195	54
1967-68	2043	1255	61
1968-69	1740	1367	69
1969-70	1582	1404	89
1970-71	1720	1403	94

Source: As per Table I from the Appendix.

These plan estimates have been actually realised actual exports have been Rs. 635 crores in 1956-57 and Rs. 630 crores in 1960-61. Further, as against the estimated export receipts of Rs. 3700 crores during the Third Plan,[9] the actual receipts have been Rs. 3735 crores during the plan. It is during the initial years of the Fourth Plan that "India's exports are not moving in step with the strategy prescribed in the Fourth Plan,"[10] during which exports are "expected to aggregate to Rs.8300 crores, a compound rate of growth of 7 per cent per year,"[11] or Rs.1660 crores per year. Actually, the Economic Survey - 1971-72 states that the exports have remained more or less on the same level at Rs.1402.7 crores in 1970-71 as that in 1969-70. In short, Indian exports have started lagging in this sense also during the Fourth Plan.

5.2.2: CHARACTERISTICS OF INDIAN EXPORTS REFLECTING ITS LAGGING BEHAVIOUR :

In short, Indian exports are lagging behind world exports, Indian imports and also behind planned exports during the initial years of the Fourth Plan.

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[9]The Third Five Year Plan, op.cit.

[10]Economic Survey 1971-72, Government of India, Delhi, 1972.

[11]The Fourth Five Year Plan, op.cit., p.98

An analysis of the different characteristics of Indian exports during the period 1951-1970 will reinforce its lagging behaviour. Table 5.3 shows various characteristics of India's exports. It will be observed from the Table that one characteristics follows from the other. Thus taking the order reversely, the trend rate of negative trade balance (due to lagging exports) decreases from period to period as shown by the coefficients of t, namely 4, 3 and 0.25. This follows from the fact that the trend rate of export/import ratio increases for the corresponding periods. This again is due to the increasing trend rates of import capacity of exportsas reflected from income terms of trade during the periods. This behaviour of income terms of trade of India, in turn, is the net outcome of the behaviour of India's net barter terms of trade and that of volume of India's exports. Thus it will be observed from the Table that while the trend rates of volume indices of exports are positive and have increased from period to period while the corresponding trend rates of net barter terms of trade are negative for the two period but has improved from period to period. Finally, the negative trend rates of net barter terms of trade are partly an outcome of the negative trend rates of unit value indices of exports in the corresponding periods. These rates of units value indices of exports have also increased from period to period.

Table 5.4

Characteristics of Indian Exports

Year	Indices of Exports : 1963 = 100		
	Value	Volume	Unit Value
(1)	(2)	(3)	(4)
1951-52	101.2	76.0	135.0
1952-53	79.8	71.0	110.0
1953-54	68.6	73.0	94.0
1954-55	72.6	75.0	96.0
1955-56	79.9	83.0	94.0
1956-57	84.8	80.0	95.0
1957-58	86.3	87.0	95.0
1958-59	75.1	79.0	94.0
1959-60	80.4	85.0	94.0
1960-61	81.9	80.0	103.0
1961-62	85.3	83.0	105.0
1962-63	86.3	89.0	100.0Ø
1963-64	100.0	100.0	100.0
1964-65	104.9	107.0	100.0
1965-66	103.7	99.0	106.0
1966-67	100.8	102.0	139.0
1967-68	99.2	99.0	160.0
1968-69	107.8	111.0	154.0
1969-70	112.8	109.0	164.0
1970-71	124.7	121.0	163.0
10 Year Trend	84.0 - 0.59t	72.0 + 1.19t	88.0 - 2.44t
15 Year Trend	75.0 + 1.36t	68.0 + 2.2t	97.0 -960.0t
20 Year Trend	71.0 + 1.92t	29.11 - .35t	85.0 + 3.0t

continued Table ...

Table 5.4 continued

Year	Terms of Trade : 1963=100			Export/ Import ratio %	Trade Balance (Rs. crores)
	Net Barter	Gross Barter	Income		
	(5)	(6)	(7)	(8)	(9)
1951-52	115.0	93.0	87.0	76.0	-232.8
1952-53	92.0	125.0	65.0	95.0	- 31.1
1953-54	89.0	74.0	65.0	91.0	- 52.1
1954-55	96.0	83.0	72.0	87.0	- 93.1
1955-56	95.0	81.0	79.0	83.0	-132.8
1956-57	95.0	104.0	76.0	58.0	-499.9
1957-58	86.0	112.0	75.0	54.0	-564.6
1958-59	91.0	108.0	72.0	56.0	-453.0
1959-60	98.0	111.0	83.0	67.0	-304.9
1960-61	102.0	114.0	82.0	58.0	-451.9
1961-62	103.0	114.0	86.0	67.0	-328.0
1962-63	103.0	116.0	92.0	63.0	-398.1
1963-64	100.0	100.0	100.0	66.0	-415.2
1964-65	98.0	100.0	105.0	58.0	-586.9
1965-66	101.0	130.0	100.0	58.0	-566.7
1966-67	104.0	125.0	106.0	54.0	-806.3
1967-68	101.0	130.0	100.0	61.0	-788.2
1968-69	103.0	114.0	114.0	69.0	-373.1
1969-70	105.0	95.0	115.0	89.0	-178.4
1970-71	106.0	85.0	128.0	94.0	-317.7
10 Year Trend	94.0 - 0.41t	39.0 + 1.6t	71.0 + 0.73t	94.0 -3.98t	5.6 - 4.0t
15 Year Trend	97.6 - 0.25t	90.0 + 1.75t	65.0 + 2.24t	87.0 -2.16t	7.6 -/+ 3.0t
20 Year Trend	94.0 + 0.47t	-41.0 +14.0t	56.0 + 3.21t	76.0 -0.5t	27.0 + 0.25t

Source: (1) Reports of Currency and Finance, Reserve Bank of India, Bombay.

Note: (2) Time trend of the various series are calculated by the method of least squares.

5.3: TESTING THE SUPPLY AND DEMAND DEFICIENCY HYPOTHESES FOR INDIA :

5.3.1: CAUSES OF EXPORT LAG :

This lagging exports behaviour is not peculiar to India but is a general phenomenon of majority of the developing countries. There are two contrasting hypotheses which have been generally put forward for the growing export lag of the developing countries. These are the famous demand deficiency hypothesis of Professor Nurkse[12] and the supply deficiency hypothesis of Professor Cairncross[13]. According to the former hypothesis, in the 20th century, exports of the developing countries do not have favourable demand conditions from the world's industrial centres owing to such factors as (a) changes in the structure of production in favour of industries having low raw material content in their finished goods; (b) low income elasticity of demand for agricultural materials; (c) economies in the use of raw materials; (d) development of synthetic substitutes. Against this 'demand-deficiency'

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[12] op. cit.

[13] op. cit.

hypothesis, it is argued that the growing lag in exports of the present-day developing countries is attributable to industrialization in these countries involving greater consumptions of their own agricultural materials, thus restricting the supply for the export market.

In case of India's lagging exports, the same corresponding hypotheses have been formed. Thus it is argued, as noted earlier, that Indian export are lagging due to price and income inelasticity of demand for India's traditional exports like jute, cotton extiles and tea. Alternatively, it is also held by others, that the failure of Indian exports to increase in the past is not so much due to price and income inelasticity of demand for Indian exports as to the inelastic supply of the exportables caused by its inflationary demand pressures internally. However, the fact of the situation is that neither the 'demand-deficiency' nor the 'supply deficiency' hypothesis alone can explain the export lag. Since both supply and demand forces taken together explain the export behaviour of a country.[14]

It is the extent of the relative influences of the supply and demand factors that would reflect as to whether supply deficiency or demand deficiency is more responsible

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[14] A detailed list of various demand and supply factors determining the export earning can be found in Manmohan Singh, op. cit., Chapter-2.

for the export lag. This can be found out from the aggregate export function incorporating the major supply and demand factors. The function can be estimated through multiple regression analysis. It is in this direction that no analytical work on Indian exports has been done so far.

In what follows, therefore, efforts will be made to test the hypotheses at two levels. In the first place, the leading factors which affect the supply and demand sides of Indian exports will be isolated. In the second place, these characteristics will be used to form an aggregate export function of India which would, ultimately, reflect the intensity of demand and supply forces of Indian exports.

5.3.2: FACTORS AFFECTING SUPPLY AND DEMAND FOR INDIAN EXPORTS:

It is easy to see from the various factors determining the level of exports noted earlier that supply of exports of a country depends, among other things, on : (1) the level of country's income; and (2) the domestic demand pressure, which, in turn, depends on (i) the level of consumption as determined by the domestic economic activity; and (ii) the general level of prices. On the other hand, the foreign demand for a country's exports depends,

among other things, on (3) the level of income of foreign countries; (4) the income and the price elasticities of demand for country's exports. From these four factors, two domestic and two external, one can have the following four groups of characteristics of Indian exports :

(1) Export supply coefficients: In this group, the following two characteristics may be included :

1.1: Per capita exports;

1.2: Exports as % of GNP;

(2) Export demand coefficients: The following two features can be included in this group:

2.1: Exports as % of world exports;

2.2: Exports as % of developing countries' exports.

(3) Supply elasticities: These are of two types, namely,

3.1: Elasticity of exports with respect of GNP;

3.2: Elasticity of exportable surplus with respect to export prices of India.

(4) Demand elasticities: These, also are of two types, viz.,

4.1: Elasticity of exports with respect to world imports;

4.2: Elasticity of Indian exports with respect to world export prices.

Table 5.5 summarizes all the above four groups of characteristics listed above. From the Table, it will be

Table 5.#5:

Characteristics of Indian Exports reflecting the factors responsible for lagging Indian Exports

Year	Per capita		% of Indian exports with		
	GNP (Rs.)	Exports (Rs.)	GNP	World Exports (%)	Developing countries exports (%)
1	2	3	4	5	6
1951-52	268.9	20.80	6.7	2.0	6.8
1952-53	307.9	16.27	5.7	1.4	6.2
1953-54	308.5	14.33	4.7	1.5	5.3
1954-55	299.6	15.55	5.6	1.5	5.3
1955-56	323.5	16.37	5.7	1.4	5.5
Average	--	--	--	--	--
1956-57	314.4	15.91	5.0	1.3	5.5
1957-58	308.5	16.42	4.7	1.3	5.5
1958-59	315.2	13.80	4.0	1.2	5.5
1959-60	307.4	14.76	4.2	1.2	5.2
1960-61	307.4	14.54	4.2	1.0	4.9
Average	--	--	--	--	--
1961-62	313.8	15.04	4.2	1.0	5.1
1962-63	314.0	15.00	3.9	1.0	5.0
1963-64	324.0	17.28	4.6	1.1	5.2
1964-65	331.7	16.87	3.5	1.0	5.2
1965-66	304.8	16.08	3.2	0.9	4.7
Average	--	--	--	--	--
1966-67	261.25	21.63	3.9	0.8	4.1
1967-68	299.89	24.55	3.9	0.8	4.1
1968-69	300.21	25.89	4.1	0.7	4.1
1969-70	--	26.30	3.9	0.7	3.8
1970-71	--	27.87	3.9	0.6	3.8
Average	--	--	--	--	--
10 Year Trend	257.0 + 7%t	18.00 +0.37t	6.35 -24t	1.8 +0.08t	6.4 -.15t
15 Year Trend	230.0 + 12t	16.00 - .07t	6.0 -0.18t	1.7 -.05t	6.1 .09t
20 Year Trend	174.0 + 21t	13.00 + .52t	2.58 -.18t	1.7 -.054t	6.3 -.12t

continued Table ...

Table 5.5 continued

Year	Elasticity of Exports w.r.f.		Elasticity of Exportable surplus w.r.f. Export prices of India	Elasticity of India's exports w.r.f. world export prices
	GNP	World Exports		
	7	8	9	10
1951-52	--	--	--	--
1952-53	9.70	+22.68	0.051	5.41
1953-54	-1.30	+ 4.51	-2.137	-46.66
1954-55	-1.10	1.16	2.846	1.00
1955-56	1.30	0.89	1.560	1.06
Average	+2.15	+ 7.31	-0.580	- 9.80
1956-57	0.06	5.98	12.075	0.57
1957-58	0.42	0.01	--	0.18
1958-59	-3.20	- 2.52	-11.739	4.96
1959-60	1.60	0.88	-26.881	0.95
1960-61	0.17	0.15	-00.620	0.14
Average	-0.24	+ 0.90	-05.433	+ 1.36
1961-62	0.59	4.02	-24.680	0.91
1962-63	0.12	0.17	-00.740	0.21
1963-64	0.70	1.88	-45.909	1.79
1964-65	-0.005	0.40	148.110	0.41
1965-66	-0.280	- 0.14	006.530	- 0.13
Average	+0.225	+ 1.26	016.660	+ 0.64
1966-67	1.240	--	--	--
1967-68	0.540	- 0.29	00.390	- 0.29
1968-69	2.400	- 0.64	--	- 0.26
1969-70	0.190	1.01	- 4.880	0.80
1970-71	-0.005	0.92	--	0.34
Average	+0.975	0.88	2.240	3.48
20 Year Average	+0.777	2.91	- 5.750	- 1.75

Source : As per Table I and II and XIV from the Appendix.

observed that while the per capita GNP has increased at the trend rates of +7, +12, and +21 during the first ten years, fifteen years, and twenty years of planning respectively, the corresponding trend rates of per capita exports are -0.37, -0.07 and +0.52 respectively. The negative trend rates of exports during the first two periods are naturally due to the domestic demand pressure. This has been reflected in the trend rates of export-GNP ratio during during these three periods which are respectively -0.24, -0.18 and -0.18%. Further, when these rates are compared with the corresponding trend rates of Indian exports - world exports ratio (which are -0.08t, -0.05 and -0.054) it can reasonably be said that domestic demand pressure in India has exerted more influence than the world demand in determining the level of exports of India. No doubt, the negative sign of the rates, reflect their downward pressure on export growth. This is also true when the trend rates of exports - GNP ratio are compared with those of the Indian exports/developing countries' exports ratio. The latter trend rates are -0.15, -0.09 and -0.12 during the three periods respectively.

The above conclusion is again reinforced when supply and demand elasticities of Indian exports are compared. From the Table, it will be observed that the average elasticities of exports with respect to GNP during the first,

second, third, three annual Plans plus first two years of the Fourth Plan and during the entire period 1951-52 to 1970-71 have turned out to be +2.15, -0.24, +0.225, +0.975 and 0.777 respectively. These values of elasticities again reflect the extent of domestic demand pressure since they are either less than unit or negative. When these values of the elasticities are compared with those of the elasticity of exports with respect to world exports (which are +7.31, +0.90, +1.26, +0.38 and +2.91 respectively), then here also one can conclude that domestic demand pressure in India has had relatively greater impact than the world demand on exports performance of India. We have so far compared income elasticities of demand and supply. However, the same conclusion could be derived with greater force when the price elasticities of Indian exports are compared.

In short, the various supply and demand characteristics of Indian exports trend suggest that the Indian exports have lagged during the twenty years period due to both supply and demand deficiency but it was more due to the former than the latter deficiency.

5.3.3: MACRO EXPORT FUNCTION OF INDIA :

In a theoretical sense, exports depend on the level of income of importing country. But in actual practice,

as we have already seen, exports depends on internal as well as external factors. However, in certain circumstances, either internal or external factors are determining. In such cases, either supply function or demand function is more relevant.

In forming the demand function of exports where external factors are determining, one can select total income of the importing countries (or any of its proxy, for example, the value of their total imports) and the relative export price of the exporting country as determining factors. The relevant demand functions then take forms:

$$X_t = a + bYwt + b \frac{P^i_{xt}}{P^w_{xt}} \quad \ldots \quad \ldots \quad (1)$$

$$X_t = a + bMwt + b \frac{P^i_{xt}}{P^w_{mt}}$$

Where,

X_t - Indices of export earnings

Ywt- Weighted money income of importing countries

P^i_{xt}/P^w_{xt} - Unit value of Indian exports deflated by the world export price

P^i_{xt}/P^w_{mt} - Unit value of Indian exports deflated by the world import price

But when internal factors are the only relevant determinants, then the level of exports is determined by the

supply function. As already said, the internal factors are: (i) the level of domestic income; and (ii) domestic demand pressure acting through prices. The relevant supply function would be :

$$X_t = a + by_t + cP_t \quad \ldots \quad \ldots \quad (3)$$

$$X_t = a + b\frac{Ct}{Yt} \quad \ldots \quad \ldots \quad (4)$$

Where,

Xt - indices of export earnings

Yt - indices of GNP

Pt - indices of general level of domestic prices

Ct - consumption

However, when both external as well as internal factors are relevant, as in the case of India, a consolidated export function combining both external and internal factors will be more relevant. Such a general export function would take the forms:

$$X_t = a + bYwt + C\frac{P^i_{Xt}}{P^W_{Xt}} + d^Y t + e^P t \quad \ldots \quad (6)$$

$$Xt = a + bMwt + C\frac{P^i_{Xt}}{P^W_{Xt}} + d^Y t + e^P t \quad \ldots \quad (7)$$

$$Xt = a + bYwt + C\frac{P^i_{Xt}}{P^W_{Xt}} + d\frac{Ct}{Yt} \quad \ldots \quad (8)$$

$$Xt = a + bMwt + C \frac{P^{i}_{xt}}{P^{w}_{xt}} + d \frac{Ct}{Yt} \quad \ldots \quad (9)$$

Where Mwt is the total world imports at time t.

All the above functions are linear and as such the values of the various coefficients of the equations would show the intensities of their variables in determining the export value of the function.

Alternatively, one can consider the following classical type of export function:

$$Xt = a + bMwt + C \left(\frac{P^{i}_{xt}}{P^{w}_{xt}}\right) + dC \quad \ldots \quad (10)$$

Where,

C - measures the demand pressure.

The logarithmic form of this function will be :

$$\log Xt = a + b \log Mwt + C \log \frac{P^{i}_{xt}}{P^{w}_{xt}} + d \log C. \quad (11)$$

Substituting the proxy for C, we get the following two functions:

$$\log Xt = a+b \log Mwt+C \log \frac{P^{i}_{xt}}{P^{w}_{xt}}+d \log Yt+e \log P_t \quad (12)$$

$$\log Xt = a+b \log Mwt+C \log \frac{P^{i}_{xt}}{P^{w}_{xt}}+d \log \frac{Ct}{Yt} \quad \ldots \quad (13)$$

These are constant elasticity functions which will give the value of the elasticity of exports with respect to the

variable concerned and as such the regression analysis of these functions would give an estimate of b, c, d and e which are the values of the elasticities.

Efforts have been made by some authors to estimate export functions for India. For example, Prof. De Costa[15] and Dr. Marwah[16] have estimated statistically reliable export functions with different independent variables. But, it may be pointed out, that, they are all partial functions in the sense that only external factors have considered by them. While, in case of India, we have already observed that both internal and external factors are involved, the former being more decisive than the latter in determining export earnings of India. Hence in order to remove the drawback in these partial functions and

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[15] De Costa G.C. in his "External and Domestic Constraints on Indian Exports: An Econometric Study" - Golden Jubilee Celebration on "Indian Economy - Performance and Prospects," Department of Economics, University of Bombay, Bombay, March 25-28, 1972, has estimated among others, the following export demand functions for the period 1958-59 to 1968-69:-

$$X = 144.0808 - 0.9574P_1 + 0.00021\ Yw + 0.3050\ g$$
$$(60.4600)\quad (0.6156)\quad (0.00004960)\quad (.1861)$$

$\bar{R}^2 = 0.8203$, F-ratio = 18.2638

and $\log X = 1.6002 - 0.9270 \log P_1 + 0.3302 \log Yw + 0.29411 \log g$
$(1.0320)\quad (0.4894)\quad (0.0703)\quad (0.1802)$

$\bar{R}^2 = 0.8936$, F-ratio = 19.5998

Where, X = aggregate export value indices

P_1 = Indices of India's export prices in U.S. dollars deflated by the export price indices of industrial countries.

Yw = weighted 'world' income in million U.S. dollars, weight in proportion to the share of India's exports to the countries concerned.

Footnote contd...

also to satisfy the main purpose of testing the hypotheses, we have tried to estimate, through regression analysis, the general aggregate export function of India incorporating the leading internal as well as external factors of export determination. The resulting export functions, using 1951-52 to 1968-69 data, are as follows :

$$X_t = 1333.36 + .004^{Mwt} - 1.32\frac{P^i_{xt}}{P^w_{xt}} - 0.001Yt - 6.04Pt \quad \ldots (14)$$
$$\qquad\qquad (2.136)\quad (-.234)\qquad\quad (-.250)\quad (-1.939)$$

$\bar{R}^2 = .4184$, D-w = 1.5847, Coef.O.V.% = 5.07, F-ratio=3.698

Footnote 15 contd...

g = Index of overvaluation of the rupee - a proxy for relative profitability as between domestic and the external markets.

[16]While K. Marwah in his "An Econometrics Model of India", Indian Economic Review, April, 1972, has estimated the following export function.

$$\frac{F_e}{P_e} = -0354 + 0.1455\frac{Fi_{LDLD} + Fi_{DLD}}{P_{LDC}} + 2.9922\frac{PLDe}{Pe}$$
$$\qquad\qquad (0.0189)\qquad\qquad\qquad\qquad (1.402)$$

Mean = 6.16 $\qquad \bar{R}^2 = 0.82$

SEE = 0.31 $\qquad$ d = 1.26

Sample = 1951-65

F_e = Total exports of goods, billions of Rs.

P_e = Unit value of Fe 1953=100

F_iDLD = Imports of less developed countries coming from less developed countries

F_iDLD = Imports of Developed countries coming from less developed countries.

PLDe = Import price index of less developed region

Pe = Unit value of Fe.

Footnote 16 contd..

$$\log X_t = 4.28 + 0.41 \log {}^{M}wt - .001 \log \frac{P^{i}_{xt}}{P^{w}_{xt}} - .02 \log Yt - 0.38 \log Pt$$
$$(2.4105) \quad (-.046) \quad (.133) \quad (-2.062)$$
$$P_{dt} \ldots (15)$$

$\bar{R}^2 = .5024$, D-W = 1.5785, Coef.of U %=0.66 F.ratio=4.802

While $\bar{R}^2$ of both the equations are low signifying low level of determination of the variable, the value of the coefficients of Mw and P_{dt} in the equations have high level significance implied by their 't' scores mentioned in brackets below each of them. Further, in the former equation the value of the coefficient of Mw is +.004, while that of P_{dt} is -6.04, which signify that domestic demand pressure is more decisive that the external demand in determining aggregate export earnings of India. Moreover, the value of the coefficient of Yt, representing domestic factor, is low and less significant ('t' score is very low) but its negative value of the coefficient reinforces the conclusion. On the other hand, the coefficients of $\frac{P^{i}_{xt}}{P^{w}_{xt}}$ and P_{dt} of the latter equation give us the values of elasticities of exports with respect to the variables. It will be observed that the former coefficient is smaller than the latter which also implies that Indian exports are more price ineleastic with respect of domestic price level than that of the level of international prices. This is also in line with our main hypothesis.

Footnote 16 continued

Pe = 0.0621 + 0.2974p + 0.6228Pe-1.

P = index of general price level 1953=100

Mean = 0.84 R^2 = 0.89

SEE = 0.10 d = 1.83

5.3.4: FACTORS RESPONSIBLE FOR LAGGING INDIAN EXPORTS:

All in all, our analysis of the various characteristics of Indian exports and the regression analysis for the estimation of macro export function of India tend to show that Indian exports are lagging due to both supply and demand defficiencies but it is more due to the former defficiency than that of the latter.

It is quite logical to ask: What are the internal and external factors responsible for the lagging Indian exports? Obviously, it is very difficult to answer the question at macro level alone since different factors exert different degree of influences on different commody's export earnings. In other words, an adequate answer can be found through micro analysis of individual commodily exports. However, one can have tentative answers to the questions through macro-cum-micro analysis. For the purpose, India's exports are divided into various groups as follows:

(1) Traditional and non-traditional exports:

(i) Traditional exports include Tea, Cotton & Jute textiles, Mica, Cashew, Kernels, Metaliferous ores, Spices, Tobacco and Leather products.

(ii) Non-traditional exports are those not included in (i)

(2) Primary and traditional & non-traditional manufactured exports:

(i) Primary exports: Exports under sections 0 to 4 of the SITC.

(ii) Manufactured exports: Exports under sections 5 to 9 of the SITC.

(iii) Traditional manufactured exports: These include Cotton and Jute textiles, Leather products and manufactured Tobacco.

(iv) Non-traditional manufactured exports: These are (ii) minus (iii).

(3) Major and minor exports:

(i) Major exports: These exports constitute at least 1 % of the total exports for any consecutive five years.

(ii) Minor exports: The residue constitutes the minor exports.

(4) Indian exports grouped according to market environment:

(i) Monopolistid exports: These are Jute, Mica, Cashew Kernel and Lac.

(ii) Oligopolistic exports: These are Tea, Cotton textiles, Tobacco, Manganese ore, Black pepper, Castor oil.

(iii) Competitive exports: These include Coffee, Raw ~~material~~ cotton, Raw Wool, Hides and Skins, Groundnut oil, Linseed oil, Coal and Coke, Iron ore.

(iv) Other exports are total exports minus total of (i), (ii) and (iii).

(5) Exports to Traditional and non-traditional partners:

(i) Traditional partners are those importing at least 2 % of India's total exports from 1948-49 onwards for at least 10 consecutive years.

(ii) Exports to non-traditional partners are total exports minus exports to (i).

Table 5.6 shall show the linear trend of earnings of the various groups of Indian exports, while Tables 5.7 ~~and~~ to ~~xx~~ ~~share~~ in 5.11 shall show the index numbers (1958-59 = 10) and % to total exports of the above five groups respectively.

From Table 5.6, it will be clear that the trend rates of growth of non-traditional export earnings have been greater than those of traditional exports during all the three periods. This is re-enforced by Table 5.7 in which index number of traditional exports is gradually increasing but its percentage share in total exports is decreasing.

Table 5.6

Linear trends of earnings of the various groups of Indian exports (1951-52 to 1970-71)

Gr. No.	Sr. No.	Item regressed on time	First 10-year Trend $n = a+10bt$	First 15-year Trend $n = a+10bt$	First 20-year Trend $n = a+20bt$
(1)	(2)	(3)	(4)	(5)	(6)
I	(1)	Total exports	84.0-0.6t	75.0+1.4t	71.0+1.9t
	(2)	Traditional exports	507.2-7.2t	454.5+4.4t	366.4+19.1t
	(3)	Non-traditional exports	128.3+5.6t	117.8+7.2t	-3.8+25.9t
II	(4)	Primary exports	291.7+5.8t	273.6+9.7t	207.0+20.5t
	(5)	Manufactured exports	315.5-8.0t	244.5+6.5t	358.3+3.5t
	(6)	Traditional manufactured exports	285.1-8.5t	243.7+0.5t	201.4+7.6t
	(7)	Non-traditional manufactured exports	13.8+3.6t	6.2+1.0t	-7.7+18.2t
III	(8)	Major exports	537.5-3.4t	471.5+11.1t	361.2+29.2t
	(9)	Minor exports	98.3+1.4t	100.7+0.5t	6.2+15.3t
IV	(10)	Monopolistic exports	211.2-8.3t	169+0.9t	135.0-6.7t
	(11)	Oligopolistic exports	222.8+0.9t	223.1+0.7t	198.9+4.8t
	(12)	Competitive exports	75.4+1.7t	68.9+3.4t	-124.5+23.4t
	(13)	Other exports	125.3+3.8t	230.1+4.8t	40.6+26.7t
V	(14)	Exports to Asian countries	565.8-80.8t	116.0+1.1t	43.4+12.6t

contd...Table..

continued Table 5.6

(1)	(2)	(3)	(4)	(5)	(6)
	(15)	Exports to African countries	31.4+1.0t	0.86+4.6t	3.4+4.6t
	(16)	Exports to American countries	180.4-6.5t	149.6+0.2t	113.7+6.1t
	(17)	Exports to E.E.C.	40.7+0.9t	39.4+1.2t	26.4+3.2t
	(18)	Exports to E.F.T.A.	164.0+1.4t	169.9+0.1t	159.0+2.1t
	(19)	Exports to Eastern European countries	-2.23+4.2t	-24.9+9.7t	-72 + 17.3t
	(20)	Exports to other European countries	- 6.8+5.2t	-29.9+10.1t	18.1+2.5t
	(21)	Exports to Oceania	23.1+1.1t	33.0-0.7t	17.9+1.7t
VI	(22)	Exports to traditional partners	544.9-26.1t	415.1-0.3t	477.7+1.7t
	(23)	Exports to non-traditional partners	229.0-0.8t	192.3+7.1t	81.9+24.6t

Sources: Estimated from Tables VIII to XII from the Appendix.

TABLE 5.7

TRADITIONAL AND NON-TRADITIONAL EXPORTS OF INDIA

Year	Index No.(1958-59 =100)			Percentage to total exports		
	Traditional Exports	Non-Traditional Exports	Total Exports	Traditional Exports	Non-Traditional Exports	Total Exports
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1950-51	116.75	100.08	112.23	75.95	24.04	100.00
1951-52	143.03	82.44	126.69	82.44	17.55	100.00
1952-53	107.43	96.30	104.42	75.11	24.88	100.00
1953-54	102.30	70.22	93.65	79.76	20.23	100.00
1954-55	112.04	80.57	103.52	79.04	20.96	100.00
1955-56	107.05	122.05	111.11	70.35	29.64	100.00
1956-57	112.88	103.02	110.22	74.77	25.22	100.00
1957-58	103.96	146.04	115.32	65.82	34.17	100.00
1958-59	100.00	100.00	100.00	73.02	26.98	100.00
1959-60	107.69	111.96	108.87	72.24	27.75	100.00
1960-61	114.75	94.85	109.39	76.60	23.39	100.00
1961-62	118.17	110.03	115.95	74.41	25.58	100.00
1962-63	121.38	109.38	118.15	75.01	24.98	100.00
1963-64	127.13	171.44	139.09	66.74	33.25	100.00
1964-65	133.41	154.02	138.97	70.09	29.10	100.00
1965-66	133.48	142.83	136.00	71.66	28.33	100.00
1966-67	193.44	217.94	200.05	70.60	29.39	100.00
1967-68	~~284.24~~ 193.10	284.24	217.70	64.76	35.23	100.00
1968-69	198.57	335.82	235.61	61.54	38.45	100.00
1969-70	177.01	429.84	245.24	52.70	47.29	100.00
1970-71	186.64	482.19	264.52	51.55	48.44	100.00

Source: Calculated from Table VIIII from the Appendix.

TABLE 5.8

PRIMARY AND TRADITIONAL AND NON-TRADITIONAL MANUFACTURED INDIAN EXPORTS

(Index No. 1958-59 = 100)

Year	Primary Export	Manufactured Exports			Total Exports
		Total	Traditional	Non-traditional	
1	2	3	4	5	6
1950-51	82.30	135.59	152.89	28.25	112.23
1951-52	95.71	171.06	190.90	47.94	126.69
1952-53	92.50	113.79	117.29	92.06	104.44
1953-54	81.41	110.35	115.91	77.78	93.65
1954-55	100.46	110.57	116.73	72.38	103.52
1955-56	102.94	108.85	115.45	67.94	111.11
1956-57	104.53	110.35	114.12	86.98	110.22
1957-58	96.71	125.07	106.96	237.46	115.32
1958-59	100.00	100.00	100.00	100.00	100.00
1959-60	109.68	116.12	117.44	107.94	108.87
1960-61	105.08	130.22	122.86	175.87	109.39
1961-62	110.17	133.35	124.76	186.67	115.96
1962-63	117.64	133.48	127.21	172.38	118.15
1963-64	133.16	157.27	135.50	292.38	139.09
1964-65	136.04	169.12	143.63	329.30	138.97
1965-66	125.96	180.44	150.28	367.62	136.00
1966-67	110.17	241.76	213.30	418.41	200.05
1967-68	185.43	257.44	194.48	648.25	217.70
1968-69	194.46	315.90	200.97	1029.21	235.61
1969-70	191.37	343.52	189.92	1296.83	245.24
1970-71	219.44	353.92	179.49	1436.51	266.39

Source: Calculated from Table X from the Appendix.

TABLE 5.8

PRIMARY AND TRADITIONAL AND NON-TRADITIONAL MANUFACTURED INDIAN EXPORTS

(Percentage to total exports)

Year	Primary Export	Manufactured Exports			Total Exports
		Total	Traditional	Non-traditional	
1	2	3	4	5	6
1950-51	44.55	47.58	46.21	1.27	100.00
1951-52	42.81	53.18	51.11	2.06	100.00
1952-53	50.19	42.91	38.09	4.81	100.00
1953-54	49.26	46.41	41.98	4.53	100.00
1954-55	54.99	42.07	38.25	3.82	100.00
1955-56	52.50	38.59	35.24	3.34	100.00
1956-57	53.74	39.43	35.12	4.31	100.00
1957-58	45.51	42.71	31.46	11.25	100.00
1958-59	56.67	39.38	33.92	5.46	100.00
1959-60	57.09	42.01	36.59	5.41	100.00
1960-61	54.44	46.88	38.10	8.78	100.00
1961-62	53.83	45.28	36.49	8.79	100.00
1962-63	56.42	44.49	36.52	7.97	100.00
1963-64	54.25	44.53	33.04	11.48	100.00
1964-65	55.47	47.93	35.06	12.87	100.00
1965-66	52.48	52.25	37.48	14.77	100.00
1966-67	52.01	47.59	36.16	11.43	100.00
1967-68	52.45	50.61	32.92	17.68	100.00
1968-69	46.03	52.61	28.93	23.87	100.00
1969-70	44.22	55.17	26.27	28.90	100.00
1970-71	46.68	52.32	22.87	29.47	100.00

Source: Calculated from Table IX from the Appendix.

TABLE ~~5.~~ 5.9

MAJOR AND MINOR EXPORTS OF INDIA

Year	(Index No.1958-59 = 100)			(Percentage to the total)		
	Major Exports	Minor Exports	Total Exports	Major Exports	Minor Exports	Total Exports
1	2	3	4	5	6	7
1950-51	109.18	127.83	112.23	80.83	19.16	100.00
1951-52	133.19	94.84	126.69	87.39	12.60	100.00
1952-53	104.59	104.12	104.44	83.22	16.77	100.00
1953-54	95.61	84.53	93.65	84.41	15.18	100.00
1954-55	107.30	85.56	103.52	86.09	13.90	100.00
1955-56	106.68	132.98	111.11	74.84	20.15	100.00
1956-57	108.97	116.49	110.22	82.20	17.79	100.00
1957-58	100.20	190.72	115.32	72.18	27.81	100.00
1958-59	100.00	100.00	100.00	83.15	16.84	100.00
1959-60	111.89	93.81	108.87	85.48	14.81	100.00
1960-61	114.98	86.59	109.39	86.60	13.33	100.00
1961-62	122.33	84.53	115.96	87.72	12.27	100.00
1962-63	127.76	71.13	118.15	89.86	10.13	100.00
1963-64	136.74	151.54	139.09	81.67	18.32	100.00
1964-65	143.84	115.46	138.97	86.01	13.98	100.00
1965-66	141.33	110.30	136.00	86.35	13.64	100.00
1966-67	201.46	193.81	200.05	83.09	16.30	100.00
1967-68	202.08	295.87	217.70	77.13	22.86	100.00
1968-69	213.56	345.36	235.61	75.33	24.66	100.00
1969-70	200.20	469.06	245.24	67.82	32.17	100.00
1970-71	217.95	508.18	266.39	68.01	31.98	100.00

Source: Calculated from Table XI from the Appendix.

TABLE 5.10

COMMODITY COMPOSITION OF INDIAN EXPORTS ACCORDING TO MARKET ENVIRONMENT

(Index No.1958-59 = 100)

Year	Exports having			Other exports	Total exports
	Monopolistic environment	Oligopolistic environment	Competitive environment		
1	2	3	4	5	6
1950-51	103.27	125.88	84.74	116.83	112.23
1951-52	219.83	102.86	88.37	92.80	126.69
1952-53	113.70	101.86	101.25	100.96	104.42
1953-54	99.87	105.87	73.54	80.61	93.65
1954-55	108.66	116.70	93.55	84.66	103.52
1955-56	108.30	97.28	126.44	126.09	111.11
1956-57	108.06	117.65	111.13	100.32	110.22
1957-58	101.54	104.50	88.16	162.60	115.32
1958-59	100.00	100.00	100.00	100.00	100.00
1959-60	101.78	110.94	126.06	102.36	108.87
1960-61	122.09	104.29	102.95	108.38	109.39
1961-62	128.40	98.01	132.20	121.40	115.96
1962-63	131.64	105.00	131.28	116.95	118.15
1963-64	136.38	109.06	143.51	185.79	139.09
1964-65	151.01	109.49	139.19	172.46	138.97
1965-66	161.63	116.72	138.29	138.65	136.00
1966-67	225.89	131.19	220.45	268.46	200.05
1967-68	212.85	146.61	209.78	337.82	217.70
1968-69	212.94	189.61	241.34	326.48	235.61
1969-70	203.35	119.07	256.35	476.79	245.24
1970-71	188.36	134.67	278.13	534.92	264.52

Source: Calculated from Table XII from the Appendix.

TABLE 5.10

COMMODITY COMPOSITION OF INDIAN EXPORTS ACCORDING TO MARKET ENVIRONMENT

(Percentage to total exports)

Year	Exports having			Other exports	Total exports
	Monopolistic environment	Oligopolistic environment	Competitive environment		
1	2	3	4	5	6
1950-51	22.30	41.74	11.00	24.94	100.00
1951-52	42.05	30.21	10.16	17.55	100.00
1952-53	26.39	36.30	14.13	23.16	100.00
1953-54	25.84	42.07	11.44	20.62	100.00
1954-55	25.39	41.88	13.15	19.56	100.00
1955-56	19.56	34.91	17.77	27.19	100.00
1956-57	23.76	39.72	14.69	21.81	100.00
1957-58	21.34	33.72	11.14	33.78	100.00
1958-59	24.27	37.22	14.57	23.96	100.00
1959-60	22.66	37.92	16.87	22.53	100.00
1960-61	27.05	35.48	13.71	23.74	100.00
1961-62	26.84	31.45	16.62	25.09	100.00
1962-63	27.00	33.08	16.20	23.72	100.00
1963-64	23.76	29.18	15.04	32.01	100.00
1964-65	26.34	29.32	14.60	29.74	100.00
1965-66	28.80	31.94	14.82	24.43	100.00
1966-67	27.37	24.41	16.06	32.16	100.00
1967-68	23.70	25.07	14.05	37.19	100.00
1968-69	21.91	29.95	14.93	33.17	100.00
1969-70	20.10	18.07	15.24	46.59	100.00
1970-71	17.26	18.95	15.33	48.46	100.00

Source: Calculated from Table XII from the Appendix.

TABLE 5.11

INDIAN EXPORTS TO

TRADITIONAL AND NON-TRADITIONAL PARTNERS

Year	Percentage to total exports			Index No.1958-59=100		
	Traditional partner	Non-Traditional partner	Total exports	Traditional partner	Non-Traditional partner	Total exports
1	2	3	4	5	6	7
1950-51	57.09	42.90	100.00	86.97	124.89	112.23
1951-52	65.42	34.57	100.00	99.66	100.64	126.68
1952-53	63.08	36.91	100.00	96.09	107.45	104.42
1953-54	64.96	35.03	100.00	98.96	101.97	93.64
1954-55	68.38	31.61	100.00	104.17	92.02	103.52
1955-56	62.04	37.95	100.00	94.51	110.48	111.10
1956-57	76.99	23.00	100.00	117.29	66.95	110.22
1957-58	51.76	48.23	100.00	78.85	140.40	115.32
1958-59	65.65	34.35	100.00	100.00	100.00	100.00
1959-60	68.03	31.96	100.00	103.64	93.04	108.86
1960-61	67.06	32.93	100.00	102.16	95.80	109.38
1961-62	63.20	36.79	100.00	96.28	107.10	115.96
1962-63	61.52	38.47	100.00	93.72	111.49	118.15
1963-64	58.23	41.76	100.00	88.71	121.57	139.09
1964-65	61.34	38.65	100.00	93.44	112.51	138.97
1965-66	57.13	42.86	100.00	87.03	124.77	136.00
1966-67	57.99	42.00	100.00	88.34	122.27	200.05
1967-68	56.04	43.95	100.00	55.37	127.94	217.69
1968-69	54.86	45.13	100.00	83.57	131.38	235.60
1969-70	52.58	47.41	100.00	80.10	138.02	245.23
1970-71	50.76	49.23	100.00	77.33	143.31	264.51

Source: Calculated from Table XIIII from the Appendix.

On the other hand, both index number and percentage share of non-traditional exports are increasing. Further, from Tables 5.6 and 5.8, it will be observed that while there is gradual increase in both trend rate of growth and index number of primary goods exports, its percentage share in total exports remained more or less on the same level during the whole twenty year period. This tendency is more prominent in the case of traditional manufactured goods. These tendencies of traditional manufactured and primary goods exports seem to be more due to domestic demand pressure which have been generated in the Indian economy because of industrialization and the inflationary spiral in the economy. These two factors are responsible for the increased domestic demand for the primary and traditional manufactured goods which are mainly raw materials and consumers' goods.

Moreover, the inflationary pressure in the Indian economy is partly responsible for the decline in competitive power of Indian exports in the international markets. This could be observed from Tables 5.6 and 5.10. While Table 5.6 shows the declining trend of monopolistic exports, Table 5.10 shows that they could not increase their share in total exports of India. Further, while in the share of oligopolistic exports have declined during the period.

These trends, it seems, are due to the emergence of increased foreign competition for the market for such goods.

Finally, Tables 5.6 and 5.11 show, quite clearly that India is gradually losing its traditional market. This may be, as said earlier, due partly, to the emergence of substitutes in these countries and partly to economies in the use of Indian exports which have become costly.

5.4: EFFECTS OF DEVALUATION ON INDIAN EXPORTS :

It is under the background of the conclusions of the previous section that effects of devaluation of Indian rupee in June 1966 on exports are to be viewed. It may be helpful to anticipate at this stage that under the circumstances where exports are more supply rather than demand determined, it is more or less doubtful whether devaluation can do the trick of eliminating deficit in the balance of payments through enhancing its export earnings to any appreciable extent. As such, devaluation to be successful (i.e. to improve the balance of trade on goods and services account), it must be effective in reducing the

import bill in a big way. In this section, it is proposed to consider the effects of devaluation of 1966 on balance of trade through affecting exports and imports of goods under the assumption that whatever changes that have taken place in exports and imports are solely due to devaluation. Next this unrealistic assumption will be relaxed to isolate the effects of devaluation from other effects on export earnings of India.

5.4.1: DEVALUATION AND BALANCE OF TRADE :

The balance of payment difficulties of a country may be one of the following forms: (i) an overall balance of payment deficit, involving loss of foreign exchange reserves; (ii) an overall balance in external payments, maintained by a system of controls over imports and export promotion measures; and (iii) combination of the first two. There is an overall balance of payments deficit but the deficit is kept as small as possible through controls on imports and through export promotion measures. The country is assumed to devalue its currency to a sufficient extent in the first case to eliminate the overall deficit or in the second form to remove both controls on imports and export incentives schemes which were originally maintained to supress the payment deficit or in

the third case to remove the deficit as well as to remove both controls on imports and incentives on exports. It is clear that India falls in the third category.

The question to be addressed is: what is the effect of devaluation on balance of trade of India? Theoretically, the "Marshall-Lerner"[17] condition maintains that in order that devaluation may be successful in improving the trade balance of a country, the sum of the price elasticity of demand for imports (e_m) and the price elasticity of demand for exports (e_x) must be greater than unity. However, the assumptions (of equilibrium in balance of trade and of infinite supply elasticities of exports and imports) from which the condition is derived are unrealistic. Clearly, in case of India, as said before, both these assumptions are unrealistic. In order to remove the drawbacks of the "Marshall-Lerner" condition, Hirschman[18] has derived the following conditions under realistic assumptions (of initial trade balance and less than unity supply elasticities of exports and imports).

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[17] Hirschman A.O. "Devaluation and the Trade Balance", Review of Economics and Statistics, February, 1949.

[18] Ibid.

(1) In foreign currency :

$$\frac{M}{X} e_m + e_x > 1$$

(2) In domestic currency :

$$e_m + \frac{X}{M} e_x > 1$$

Where M and X are imports and exports in foreign currency. It will be seen that when exports are equal to imports, Hirschman's conditions reduce to the "Marshall-Lerner" condition. Further, his conditions are less stringent when expressed in foreign exchange than when expressed in domestic currency.

Before answering the question, let us try to apply "Hirschman's' condition and try to anticipate whether devaluation will be successful in improving trade balance of India. For the purpose following elasticities of demand for imports and exports of India are used:

Table 5.12

Elasticities of Demand for Imports & Exports of India

	Valuene		Valume	
	Domestic exchange	Foreign exchange	Domestic exchange	Foreign exchange
Imports	- 0.02	+ 1.2	+ 1.13	+ 4.6
Exports	- 2.45	- 0.17	- 2.84	+ 0.66

Source: Calculated from Table XVII from the Appendix.

Using the above values of elasticities we have:-

condition (1) (a) $\frac{M}{X}$ em + ex = 1.11 $>$ 1 for volume

(b) $\frac{M}{X}$ em + ex = 5.56 $>$ 1 for value

condition (2) (a) $e_m + \frac{X}{M} e_x$ = -2.31 $<$ 1 for volume

(b) $e_m + \frac{X}{M} e_x$ = -1.16 $<$ 1 for value

Thus, 'Hirschman's' condition in terms of foreign exchange is satisfied, while that in terms of domestic currency is not. From this one can say that devaluation may be successful in impfoving the trade deficit of India in terms of foreign exchange. In fact, this has turned out more or less true, as can be seen from Table 5.13 in which exports, imports and trade balances are shown both in terms of rupees and in US dollars. It will be observed from the Table that the trade balance in terms of US dollars has gradually improved from 1966-67 to 1970-71, all the post-devaluation years. While the trade balance in terms of rupees has improved during 1966-67 to 1968-69, but has deteriorated during 1970-71. Further, while the overall improvement in trade balance during 1966-67 to 1970-71 has been 90.5 % in terms of US dollars, the corresponding improvement in terms of rupees has been 66 %. In

Table 5.13

Effect of Devaluation on Balance of Trade of India

Year	At post-devaluation Rs. Crores						Millions of US $					
	Ex (f.o.b.)	Im (c.i.f.)	Trade Balance D	% change over previous year (+) increase (-) decrease			Ex (f.o.b.)	Im (c.i.f.)	Trade Balance B	% change over previous year (+) increase (-) decrease		
				Ex	Im	D				Ex	Im	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1960-61	997	1768	-771	--	--	--	1367	2329	- 962	--	--	--
1965-66	1264	2194	-930	+26.9	+24.2	+20.6	1687	2838	-1151	+23.3	+21.9	+19.9
1966-67	1086	1991	-905	-14.1	- 9.2	- 2.7	1577	2827	-1250	- 6.8	- 0.4	+ 8.6
1967-68	1255	2043	-788	+15.5	+ 2.6	-12.9	1612	2772	-1160	+ 2.2	- 1.9	- 7.2
1968-69	1374	1740	-366	+ 8.9	-14.8	-52.7	1753	2509	- 756	+ 8.7	- 9.5	-34.8
1969-70	1404	1582	-178	+ 2.7	- 9.1	-52.2	1835	2201	- 366	+ 4.7	-12.2	-52.5
1970-71	1403	1720	-317	- 0.07	+ 8.7	+78.0	2026	2125	- 99	+ 1.4	- 3.4	-72.9
1965-66 to 1970-71	--	--	--	+11.0	-21.6	-66.0	--	--	--	+20.1	-25.1	-90.5

Source: International Financial Statistics, International Monetary Fund, March, 1971.

other words, devaluation of Indian rupee has been more successful in terms of US dollars than in terms of rupees as anticipated earlier. But why is it so? Such an outcome is possible in many developing countries like India, "which are capital-importing with rather low elasticities of demand for imports;" and "import exceed exports ($B > {}^{(zero)} D$) both before and after devaluation, a condition usually met in devaluating less developed countries."[19] All in all, devaluation of June 1966 has been successfully eliminated trade deficit in India's balance of payments in terms of foreign exchange. A country is interested in improving the trade balance in terms of foreign exchange, a scarce resource of which the country has inadequate supply.

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[19]It is this possibility of devaluation that is neglected in most of the analysis. See Cooper R.N., "Devaluation and Aggregate Demand in Aid-receiving Countries," in Trade, Balance of Payments and Growth, (Eds.) Bhagwati J.N. and others. North-Holland Publishing Co., London, 1971. In this paper, Cooper has shown the possibility of devaluation by considering $B = rD$, where $B = X-M$ is the trade balance measured in terms of foreign currency, r is the foreign currency price of a unit of domestic currency, and D is the trade balance measured in terms of domestic currency. A devaluation by $\Delta r > zero$ will change B and D, leading to: $\Delta B = (r + \Delta r)\Delta D + D\Delta r = r(1+k)\Delta D + kB$ where $K = \frac{\Delta r}{r}$, the proportionate devaluation. This relationship clearly shows that when B is positive, implying an improvement in the foreign balance, ΔD may be negative, implying deteriorating trade balance in terms of domestic currency due to reduction in total demand for domestic output in the devaluating country.

However, for us, the crucial question is: What is the role of exports in eliminating the trade balance of India? A look at the Table will show that it is more due to decrease in imports, both in terms of rupees and in US dollars, than increase in exports, that India would eliminate the trade balance in a measurable proportion during the post-devaluation period, viz., 66 % in terms of rupees and 90.5 % in terms of US dollars. Thus, during all the last three years percentage decrease in imports was larger than the percentage increase in exports, in terms of US Dollars. While in terms of rupees, during the year 1970-71 exports have actually declined and imports have increased. So far as the overall performance in concerned, increase in export was less than the decrease in imports during the five year post-devaluation period, in terms of both the currencies.

5.4.2: DEVALUATION AND EXPORTS :

Theoretically, devaluation is a monetary measure to boost exports through decrease in their prices. In practice, devaluation of rupee has not brought the desired results on export front. This can be observed from Table 5.13 which brings out a surprising fact that increase in exports during the pre-devaluation period 1960-61 to

1965-66 was greater than the increase in exports during the post-devaluation period 1965-66 to 1970-71 in terms of both foreign exchange and domestic currency. The question, therefore, is: Why did Indian exports fail to respond to a greater degree to the devaluation incentives?

A casual look at Table 5.14 will show that there was nothing wrong in the international market. Thus, world exports had increased by 66.7 % during 1965-70, while the increase during 1960-65 was 45.3 %. The corresponding increase in the developing areas, primary producers' exports and depressed exporters' exports were 37.3% and 32.8 %; 103.8 % and 36.2 % and 28.2 % and 19.0 %. On the other hand, the corresponding increase in Indian exports during the post and pre-devaluation periods were 20.1 % and 27.0 %. In other words, the increase in Indian exports was the lowest in comparison to the corresponding increases in exports of major regions, even of the depressed exporters' exports, during the post-devaluation period. Further, while all the major regions have shown a general improvement in their export performance during 1965-70 over 1960-65; Indian exports have deteriorated their position during the former period as compared to the latter period. This seems to be a natural outcome

Table 5.14

Pre and Post devaluation trend in exports of Indian and major regions of the world (billion US $)

Region		Value of Export (f.o.b.)			% change during		
		1960	1965	1970	1960-65	1965-70	1960-70
(1)		(2)	(3)	(4)	(5)	(6)	(7)
World Exports:		128.10	186.10	310.709	45.30	66.70	142.50
- of which							
I	Developed Areas	85.30	128.30	208.00	51.60	63.20	141.50
II	Socialist Areas	15.30	21.70	31.10	44.70	43.30	107.30
III	Developing Areas	27.40	36.40	53.70	32.80	37.30	96.30
	- of which						
	3.1 Depressed Exports	6.09	7.25	9.30	19.00	28.20	52.7
	3.2 Others	21.31	29.15	44.40	36.80	52.30	108.30
IV	Primary Producers	25.83	35.17	71.69	36.20	103.80	177.60
V	India	1.33	1.69	2.03	27.00	20.10	52.60

Sources: 1: Year Book of International Trade Statistics, U.N., 1964.

2: International Financial Statistics, I.M.F. January, 1972.

of the fact that the share of Indian exports in the major regions' exports has decreased during the former period. This can be observed from Table 5.15. A more revealing fact is that its share has decreased even in depressed exporters' exports.

Table 5.15

Share of Indian Exports in the major regions of the world

Year	Share of Indian exports(in percentage)			
	World Export	Developing countries exports	Primary Producers' Exports	Depressed Exporters' Exports
(1)	(2)	(3)	(4)	(5)
1960	1.2	4.6	5.1	22.2
1965	0.9	4.0	4.8	20.0
1970	0.6	3.8	2.8	17.3

Source : Calculated from Table 5.14

This, in turn, is due to the fact that devaluation has failed to bring down the prices of Indian exports to a comparable parity levels ruling in the international market. This can be observed from Table 5.16. It will be observed from the Table that while unit value indices of exports of

Table 5.16

Pre and Post devaluation change in total value, unit value and quantum indices of world, developed and developing countries and Indian exports

Region	Index (1963=100) & period					
	Total value[1]		Unit value		Quantum[2]	
	Change during pre-deval. period	Change during post-deval. period	Change during pre-deval. period	Change during post-deval. period	Change during pre-deval. period	Change during post-deval. period
(1)	(2)	(3)	(4)	(5)	(6)	(7)
World	+ 21	+ 82	+ 3	+ 10	+ 18	+ 64
Developed Countries	+ 23	+ 77	+ 3	+ 11	+ 20	+ 69
Developing Countries	+ 14	+ 58	+ 2	+ 7	+ 13	+ 45
India	+ 4	+ 21	+ 6	+ 65	- 1	+ 9

Source: International Financial Statistics, I.M.F., March, 1971

Notes: (1) Total value elasticities of demand for Indian exports with respect to export prices were + 0.66 and 0.78 during pre-devaluation and post-devaluation periods.

(2) Volume elasticities of demand for Indian exports with respect to export price were - 0.17 and - 0.98 during pre-devaluation and post-devaluation periods.

the world, the developed and developing countries have increased by 10, 11 and 7 points from 1965 to 1970, that of Indian exports have increased by 65 ~~xix~~ points during the period. This coupledwith low elasticities of demand for Indian exports (0.66 and - 0.17 for total value and volume respectively), has led to improvement of 21 points in total export value and 9 points in volume indices of the exports during the period. While the corresponding improvements in value and volume indices of the world, developed and underdeveloped countries have been 82 & 64, 71 & 69 and 58 & 45 respectively. In other words, the unsatisfactory growth of Indian exports during post-devaluation is due to the fact that the devalued rupee has failed to bring down the prices of Indian exports to a level that was made possible through export subsidies and export incentives during the immediate pre-devaluation period of 1960-65.

However, the devaluation has bestowed some blessings to Indian exports from other angle. It will be observed from Table 5.17 that import capacity of Indian exports measured in income terms of trade has improved by 19 points during the post-devaluation period, which is much greater than the corresponding improvement in it during the pre-devaluation period 1960-65. No doubt, even this

Table 5.17

Post and Pre devaluation changes in terms of trade of the developed and developing countries and India (1963 = 100)

Regions	Terms of Trade & Period					
	Net Barter[a]		Gross Barter[b]		Income[c]	
	Change during pre-deval. period 1963-65	Change during post-deval. period 1965-70	Change during pre-deval. period 1963-65	Change during post-deval. period 1965-70	Change during pre-deval. period 1963-65	Change during post-deval. period 1965-70
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Developed countries	0	+ 2	0	+ 1	+ 20	+ 71
Developing countries	- 1	+ 1	0	0	+ 12	+ 46
India	+ 1	+ 9	+ 7	+11	0	+ 19

Source: Calculated from Table XVI from the Appendix.

Note: (1) If,

P_x and Q_x denote unit value index of export and quantum index of exports respectively and P_m and Q_m are those of imports, then we have:-

(a) Net Barter terms of trade $= \frac{P_x}{P_m}$

(b) Gross Barter terms of trade $= \frac{Q_m}{Q_x}$

(c) Income terms of trade $= \frac{P_x}{P_m} \times Q_x$

much increase in income terms of trade could be considered very small in international comparison. The improvement in India's income terms of trade during the post-devaluation period was, in turn, due to improvement in both net barter terms of trade and in volume of Indian exports. The improvement in the former, it may be pointed out, is more than the corresponding improvement in the developed and developing countries net barter terms of trade. While improvement in the latter, as said before, is less than the corresponding improvement in developed and developing countries' volume of exports.

There is also one more direction in which devaluation has reacted favourably on Indian exports. It has improved the elasticity of demand for Indian exports during the post-devaluation period. It will be seen from Table 1.16 that while the value and volume elasticities of demand for exports were + 0.66 and - 0.17 respectively during the pre-devaluation period, they have improved to + 0.78 and - .98 respectively during the post-devaluation period. This means that international market has become more responsive to changes in the price of Indian exports expressed in terms of foreign exchange. This has an important implication that Indian exports would have suffered more in the international market if the Indian rupee were

Table 5.18

Estimates of Devaluation impact on exports (1967 - 70)

(US $)

Year	Value index			Volume index		
	% change during post-deval. period	% change with pre-deval. price elasti-city. (+0.66)	Impact in terms of % change in exports (2-3)	% change during post-deval. period	% change with pre-deval. price elasti-city (-.17)	Impact in terms of % change in exports (5-6)
1967	- 2.00	+ 9.90	- 11.90	+ 2.90	- 2.55	- 0.45
1968	+ 9.10	- 2.64	+ 11.74	+ 12.70	+ 0.68	+12.02
1969	+ 4.60	+ 3.96	+ 00.64	- 00.99	-1.02	+ 0.03
1970	+10.60	+ 3.30	+ 07.30	- 01.80	- 0.87	- 0.93

Source: Calculated from Table XVI from the Appendix.

not devalued in 1966.

In order to see "What would have happened to Indian exports, if India did not devalue its rupee?", two sets of exports are compared in Table 5.14. One is the actual % change in exports realised during the post-devaluation period (1966-1970) and the other set of % change in exports obtained by assuming no devaluation. The later is obtained by pre-devaluation price elasticities of demand for exports. From the Table, it will be observed that due to devaluation in 1966, value indices have increased by +11.74 %, +0.64 %, and + 7.30 % over the previous year increase during 1968, 1969 and 1970 respectively. The corresponding change in quantum indices have been by + 12.02, + 0.03 and - 0.93 during 1968, 1969 and 1970 respectively. In other words, as already remarked earlier, Indian exports would have suffered much, both in terms of value and volume, if there had not been devaluation of India Rupee in 1966.

5.5 SUMMERY AND CONCLUSION :

The main objects of this chapter are: (i) to test the hypotheses of demand and supply deficiency for the growing lag in Indian exports; and (ii) to examine the effects of devaluation of Indian Rupee in 1966 on Indian exports.

The analyses of the data has revealed that Indian exports are lagging behind world exports; Indian imports and also behind planned exports during the initial years of the Fourth Plan. The analyses of the different characteristics of Indian exports during the period 1951-1970 have reinforced its lagging behaviour. Thus, the trend rate of negative trade balance (due to lagging exports) decreases from period to period due to the increasing export/import ratio for the corresponding period. This again is due to the increasing trend rates of import capacity of exports as reflected from income terms of trade during the periods. This behaviour of income terms of trade is the net outcome of the net barter terms of trade and that of volume terms of trade. The former is negative during the two periods but have increased from period to period. While the latter have showed a positive and increasing trend for the corresponding period. Finally, the negative trend rates of net barter terms of trade are partly an outcome of the negative trend rates of unit value indices of exports during the corresponding periods. These rates of unit value indices of exports have also increased from period to period.

Further, analysis of the various supply and demand characteristics of Indian exports trends have suggested

that Indian exports have lagged during the twenty years period due to both supply and demand deficiency but it was more due to the former than the latter deficiency This conclusion is reinforced from the macro export functions of India.

Domestically, industrialization and the inflationary spiral in the Indian economy are the main factors responsible for the increased domestic demand for the primary and traditional manufactured goods which are mainly raw materials and consumers goods. The latter factor is also partly responsible for the decline in competitive power of Indian exports in the international market. While externally, India is gradually losing its traditional market. This may be due partly to the emergency of cheap substitutes and partly to economies in the use of Indian exports which have become costly.

It is against these conclusions of the behaviour of Indian exports that the effects of devaluation of Indian Rupee in June 1966 on exports is to be viewed. So far as the effects of the devaluation on India's balance of payment is concerned, it has successfully eliminated trade deficit in India's balance of payments in terms of foreign exchange. But it is more due to decrease in

imports rather than increase in exports. In other words, increase in exports was less than the decrease in imports during the five-years post-devaluation period, in terms of both Rupee and foreign exchange.

However, the devaluation has reacted favourable on Indian exports in two directions. Firstly, it has improved import capacity of Indian exports. measured in terms of income terms of trade. Secondly, it has also improved the elasticity of demand for Indian exports during the post-devaluation period. This has an important implication that Indian exports would have suffered more in the international market if there had not been devaluation of Indian Rupee in 1966.