Chapter IV

DIRECT RESOURCE REQUIREMENTS

In the previous chapters we have discussed the theoretical issues related to the subject of our study. We now turn to the empirical part of this study. In this chapter we confine our analysis to the direct resource requirement part of the natural resource content in foreign trade. For this purpose we have divided the traded items into two broad groups: Resource classes and Non-resource classes. Resource classes, as per our definition, are identified to be those classes whose products are nearest to the initial stages of production or require simple processing. The Indian trade data appear under ten sections (0 to 9) after the adoption of Standard International Trade Classification (SITC) in January 1957. Food (0), Beverages and Tobacco (1), Crude materials (2), and Mineral fuels and Lubricants are identified here as resource products since the items here mainly consist of products of agriculture, fishery, mining and forestry. These four classes again broadly correspond to the two input-output sectors - Agriculture and Mining - which will be taken in the next chapter for the computation of direct and indirect resource content. Moreover, these four classes are dominated by items such as tea, coffee, fruits and nuts,

spices, wheat, rice, cotton, jute, wool, rubber, tobacco, oil seeds, coal and mineral oil which are either in a crude form or in semi-processed form, but certainly less fabricated compared to chemicals or transport equipment. In the following parts of this chapter we make an attempt to examine the share of these resource classes in total exports and imports, the fluctuations in their unit values, value and volume, the relative resource requirements of India's foreign trade and the regional distribution of these resource products.

One main statistical difficulty for this study was the differences in the trade classification before and after 1957. Since the trade data prior to 1957 were presented according to the old classification, we have relied on Thanawala's[1] work who has reclassified the old classification according to Standard International Trade Classification (SITC) for the period 1948-49 to 1959-60. The trade statistics which were presented on calendar year basis for the years 1957 to 1960 are readjusted to fiscal years by taking the quarterly trade figures. The re-exports are not subtracted from the imports of merchandise as it was found that the ratio of re-exports to total imports during the sample period was not significant.[2]

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[1] Thanawala, Kishor H.: Statistics Relating to India's Foreign Trade, 1948-49 to 1959-60. Popular Prakashan, Bombay. 1967.

[2] The proportion of re-exports to gross imports was found to be only 0.8 per cent on an average.

After all, the historical reasons for the existence of a substantial re-export trade on Indian account under the British rule have changed since independence.

Share of Resource Products in Overall Exports

Trends in total exports:

First let us spell out the main developments in India's overall exports during the last twenty years.

Table 3. Value of India's exports 1948-49 to 1967-68. (Yearly averages)

Year	Value (Lakhs of Rs.)
1	2
1948-51	51872
1951-54	61256
1954-57	59258
1957-60	60677
1960-63	65835
1963-66	80266
1966-68	117285

Source: Appendix IV - 2.

It might be noted from Table 3 that the yearly value of exports did increase between 1948-51 and 1951-54[3] but remained stagnant around Rs.60,000 lakhs a year for the rest of that decade.[4] If we take planwise figures, it will be seen that the average annual value of exports worked out to be Rs.60,337 lakhs during the First Plan period and Rs.61,037 lakhs during the Second Plan period. However, an appreciable growth in India's exports is marked after 1960. The yearly average for 1960-63 period was around Rs.65,000 lakhs and increased to Rs.80,000 lakhs a year during 1963-66.[5] After the devaluation of Indian rupee, the yearly averages jumped further to Rs.1,17,000 lakhs during 1966-68.

Share of resource products:

The contribution of resource sectors to total exports has been quite significant. Table 4 shows the relative

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[3]The years refer to fiscal years ending in March.

[4]If we take the time series data, then the only year which recorded exports above the average was 1951-52. The high value of exports in this year may be partly ascribed to the high export prices in the wake of the Korean War in 1951 and partly to the inclusion of specific export duties by the Indian Government in the value of exports after March 31, 1951.

[5]The sudden jump to Rs.80,000 lakhs a year during 1963-66 has been partly due to the inclusion of trade arising from old Portugese possessions (Goa, Daman and Diew) which were merged with the Indian Union at the end of 1961 and partly due to higher export prices.

Table 4. Percentage contribution of resource sectors and non-resource sectors to total value of exports (1948-49 to 1967-68) (Yearly averages)

Period	Contribution of resource products	Contribution of non-resource products	Total
1	2	3	4
1948-51	41.7	58.3	100.0
1951-54	45.4	54.6	100.0
1954-57	52.1	47.9	100.0
1957-60	53.2	46.8	100.0
1960-63	54.3	45.7	100.0
1963-66	52.0	48.0	100.0
1966-68	52.4	47.6	100.0

Source: Appendix IV - 2.

dependence of our export sector on these resource industries. It can be read from the table that resource products, either in a crude or semi-processed form accounted, on an average, for almost half of our annual export earnings and this has generally remained constant over the twenty years period with only minor variations. For instance one notices some increase in the contribution of resource classes from an average of 42 per cent in 1948-51 to 54 per cent in 1960-63, then declining to 52 per cent in the next three years and remaining at that level during the rest of the period. This is highly informative as it shows the direction of our comparative advantage.

While the aggregates do not help much to explain the trends, let us look at the relative shares of individual resource classes. This is given in Table 5. Among the resource classes, the food class and crude materials class has all along dominated the scene. The food class improved its relative share from the average of 20 per cent in 1948-51 to an average of 33 per cent in 1960-63, but then marginally lost its position in the next five years.

Table 5. Contribution of resource classes to total value of exports in percentages (1948-49 to 1967-68) (Yearly averages).

Year	Food	Beverages and Tobacco	Crude materials	Mineral Fuels and lubricants	Total
1	2	3	4	5	6
1948-51	20.4	2.4	17.6	1.3	41.7
1951-54	23.1	2.7	17.8	1.8	45.4
1954-57	30.5	2.0	18.3	1.3	52.1
1957-60	30.9	2.2	18.5	1.6	53.2
1960-63	32.8	2.4	18.1	1.0	54.3
1963-66	31.2	2.8	16.8	1.2	52.0
1966-68	31.2	2.5	17.8	0.9	52.4

Source: Appendix IV - 2.

The crude materials class, which is the second dominating item of the resource group, has shown appreciable stability in its relative contribution around an average of 18 per cent

in the twenty years period of history. The beverage and tobacco class which accounted for 2 to 3 per cent of total exports and the mineral fuels and lubricant class which accounted for roughly 1 per cent of total exports had only a marginal significance. In the twenty year period of our study, the shares of both classes have remained comparatively stable.

The changes within the resource classes might tell a better story than the resource classes themselves. A study of sixteen major resource items (given in Table 6) which roughly cover 80 per cent of the value of resource exports shows changes in the relative roles of these items. An important fact that emerges from the table is that the leading items of 1950's are slowly withdrawing from the scene and those which were relatively insignificant in 1950's are emerging as bright spots of 1960's. Among the declining items, tea and spices and the food class, raw cotton, natural gums, manganese ore, hides and skins, oil seeds, and raw wool in the crude materials class and coal in the fuel and lubricant class may be mentioned. Coffee and fruits and nuts in the food class and iron ore in the crude materials class are the bright spots. Raw jute in crude materials class, which on an average contributed 8 per cent to the total resource exports in 1948-51, almost disappeared into oblivion during the middle of the period and did not appear significant till 1966-68.

Among the old items, only tobacco in beverage and tobacco class and mica in crude material class have been able to retain their reppective positions in the twenty years period history.

The decling trends in the case of many resource items have to be ascribed to both external and internal factors. In tea, inelastic demand and increased competition from other tea producing areas, especially Ceylon, supplemented with internal factors like export control policies and increasing domestic consumption, explain the phenomenon of falling trends. The high prices and an autonomous shift in taste in the importing areas in favour of less spicy foods are the two possible explanations in the case of spices. Raw cotton suffered, despite rapid increase in its production and a good world demand for certain varieties like Bengal deshi, due to small export quotas. The tendency to substitute shell lac of synthetic materials which are relatively cheaper explains the case for natural gums. In the case of manganese ore, increased competition from Ghana and the union of South Africa on the one hand, and attempts to economise in the use of manganese ore in the importing countries on the other hand, explain the phenomenon of decling trends. The decline in the case of raw hides and skins are largely due to controls on its exports meant for encouraging exports of manufactured leather.

Oil seeds, especially groundnuts, have been subject to severe export restrictions in 1950's and even though quotas were liberalized after 1958, the domestic inflationary pressures have hardly permitted any sizable export surplus. The exports of raw wool have been subject to an overall ceiling. The ceiling has been imposed to preserve enough raw wool for the domestic carpet industry which also enjoys a substantial export position. The story of coal centres around the availability of adequate export surpluses in order to meet the foreign demands. Though the demand for coal has been on an increase, both from South East Asian countries and West Asian countries - the main markets for India's coal - India has not been able to use the situation to her advantage because the domestic demand for coal has been mounting up due to planned economic development in the last two decades.[6]

Share of Resource Products In Overall Imports

General trends in imports:

Let us now turn to imports. While exports were growing comparatively slowly, it can be seen from Table 7 that our import bill was mounting up rapidly. Over the twenty years

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[6]These expositions are based on: Manmohan Singh: India's Export Trends. 1964. pp.55-160. (Clarendon Press). Cohan, Benjamin I.: "The Stagnation of Indian Exports." Quarterly Journal of Economics, November 1964. pp.604-621.

Table 7. Value of India's imports - 1948-49 to 1967-68. (Yearly averages)

Period	Value (lakhs of Rs.)
1	2
1948-51	65415
1951-54	73453
1954-57	72510
1957-60	94214
1960-63	107907
1963-66	132164
1966-68	204299

Source: Appendix IV - 2.

period, there has been a phenomenal rise of a little more than 200 per cent in our import bill. If we take the yearly averages of three year period each, we find that the import bill increased at the rate of 20 per cent per each such period. This rate is much higher than the rate of growth of our national income, which is less than 5 per cent per annum. Moreover, the actual import bill could be larger than what is shown in the official statistics because of large scale smuggling.

Share of Resource Products:

It is interesting to note (from Table 8) a pronounced tendency for the share of resource products to rise in the

beginning, and to decline in the middle of the period and again rise in the late 1960's. The early rise between 1948-51 and 1951-54 has to be attributed largely to the partition of country in the late forties and the consequent disturbing effect on the resource position of the country. However, the year 1953-54, assisted by a good monsoon, was a year of many record gains in agricultural output, particularly in output of foodgrains. Thus we notice a fall in the share of resource imports from an average of 56 per cent in 1951-54 to 38 per cent in 1954-57. This trend is seen continuing till the beginning of 1963 after which its share has again moved up.

Table 8. Percentage contribution of resource sectors and non-resource sectors to total value of imports (1948-49 to 1967-68) (Yearly averages).

Period	Resource sectors	Non-resource sectors	Total
1	2	3	4
1948-51	51.5	48.5	100.0
1951-54	55.5	44.5	100.0
1954-57	37.9	62.1	100.0
1957-60	36.3	63.7	100.0
1960-63	34.5	65.5	100.0
1963-66	35.9	64.1	100.0
1966-68	44.5	55.5	100.0

Source: Appendix IV - 2.

The share of non-resource products symmetrically climbed up from 45 per cent in the beginning of 1954 to an average of 62 per cent in the next three years and to 66 per cent between 1960-63. The emphasis on planned economic development and priority assigned to industrialisation programme during the Second Plan period involved a great increase in the share of non-resource imports. This reached its peak in 1960-63 during which the imports of defence materials due to the India-China War of 1962, along with other non-resource imports had registered substantial increase.

A class-wise study of resource products on import side shows that the food class had a mixed behaviour or rise and fall in the last twenty years (Table 9). The variations

Table 9. Percentage contribution of resource classes to total imports (1948-49 to 1967-68). (Yearly averages)

Period	Food	Beverages and Tobacco	Crude Materials	Mineral Fuel and Lubricants	Total
1948-51	21.4	0.6	22.1	7.4	51.5
1951-54	23.6	0.4	20.2	11.3	55.5
1954-57	11.6	0.4	16.0	9.9	37.9
1957-60	16.8	0.1	10.1	9.3	36.3
1960-63	14.0	0.1	12.6	7.8	34.5
1963-66	20.4	0.1	9.1	6.1	35.9
1966-68	30.8	0.1	10.2	3.4	44.5

Source: Appendix IV - 2.

largely depended on the agricultural conditions in India. Thus the share of this class is found to be rising between the late forties and early fifties but decling towards the close of the First Plan because of good harvests in the country. The deterioration in our food position in the late fifties made its share to rise again slightly. Again the share of this class is found to be rising after 1963 due to successive draught conditions in the country.

The beverage and tobacco class have had only a marginal significance in our total import bill. One does notice a diminishing trend in the imports of both crude materials class and the mineral fuels and lubricants class in the past twenty years time.

Again a study of thirteen main resource items (given in Table 10) shows the changing position of these items over the twenty year period. A major trend observed from the table is the change in relative positions of many of these resource items over the twenty year period. Spices, fish, sugar and fruits and nuts in the food class, raw cotton, raw jute and oil seeds in the crude material class and crude petroleum in fuel and lubricant class have stepped down by 1966-68 from their relative position of late forties or early fifties. Wheat in food class has emerged as the most dominating resource import with a 60 per cent relative participation to total

Table 10. Value of leading resource commodities imported. (1948-49 to 1967-68) - (Value in lakhs of Rs.

Period	Wheat and spelt	Rice	Cotton Raw	Jute Raw	Petro-leum crude	Fruits and nuts	Oil seeds	Milk and cream	Raw wool	Rubber Raw	Spices	Fish	Sugar
1948-51	5893	3192	7609	3996	--	985	533	284	394	139	562	109	167
1951-54	9176	3147	8985	3262	--	1508	326	399	707	116	652	159	106
1954-57	1144	2189	5438	1383	1211	1637	823	601	932	217	596	268	1742
1957-60	9268	2516	3815	416	1902	1830	1121	612	1074	376	273	263	4
1960-63	9687	1839	6711	575	3091	1746	1036	666	803	726	176	451	2
1963-66	20317	3276	5109	493	3609	2205	771	695	374	490	43	300	--
1966-68	40076	6820	7169	3089	3257	779	498	1498	1181	598	59	--	--
					(Percentage to total)								
1948-51	24.9	13.7	31.6	16.3	--	4.1	2.1	1.2	1.6	0.6	2.4	0.4	0.6
1951-54	30.5	11.2	31.8	10.1	--	6.1	1.3	1.7	2.9	0.3	2.4	0.7	0.5
1954-57	6.4	10.5	30.9	7.9	7.7	9.5	4.8	3.5	5.4	1.3	3.5	1.5	6.6
1957-60	38.5	10.9	16.4	1.8	8.2	7.9	4.8	2.6	4.6	1.5	1.4	0.8	--
1960-63	33.0	6.7	24.2	2.0	13.5	6.3	3.7	2.4	2.9	2.6	0.6	1.6	--
1963-66	51.9	8.5	14.0	1.2	10.4	5.9	2.2	1.6	1.3	1.4	0.2	0.9	--
1966-68	59.8	10.1	10.8	4.3	7.4	1.7	0.7	2.2	1.7	0.8	--	--	--

resource imports in 1966-68. Rice and milk and cream in food class and raw wool and rubber in the crude materials class show a fair stability in the two decades in our study.

Unit Value of Resource Products

After examining the structure of India's resource trade in terms of value, we now proceed to examine the impact of changes in the unit values of the resource products on their relative share.

The relevant information on unit values of the four resource classes for the period 1957-68 are taken from the publications of Department of Commercial Intelligence and Statistics.[7] The trade data for the period 1948-57 was under the old classification. We re-classified them according to the Standard International Trade Classification and estimated the unit value of these four resource classes.[8] A basic coverage of 80 per cent is attempted in all the cases. There were computational difficulties due to lack of quantity information on many traded items as well as change in the unit of measurement under the old and new classification

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[7]See the Supplements to Monthly Statistics of Foreign Trade. Vol. I.

[8]See Appendix IV - 1 for the method of calculation and their respective coverages.

system. Yet another difficulty has been due to incomplete information regarding the landborne trade of India with her neighbouring countries, particularly for the years 1948-49 to 1951-52.[9] Wherever such information were found to be lacking the index series were obtained on the basis of sea and airborne trade figures and have been adjusted for incomplete coverage.

The unit value, volume and value indices of the four resource classes and of the total trade are shown in Table 11. These are shown as yearly averages of three year intervals each. The unit value movements of the four resource classes over the twenty years period are shown in Graphs 1 and 2.

First look at the unit values of India's total trade. The twenty years movements in the export unit values show a continuous rise with only one temporary setback. It increased from 83 to 104 during the period of 1948-51 and 1951-54 caused largely by the economic pressures of the Korean boom, but then declined to 87 in the next three years. After 1957, the unit prices are noticed rising again. It made a significant improvement particularly in 1966-68 during when the index shot to 169, the highest in the twenty year period. The import unit values, on the other hand, remained below 100 throughout fifties and

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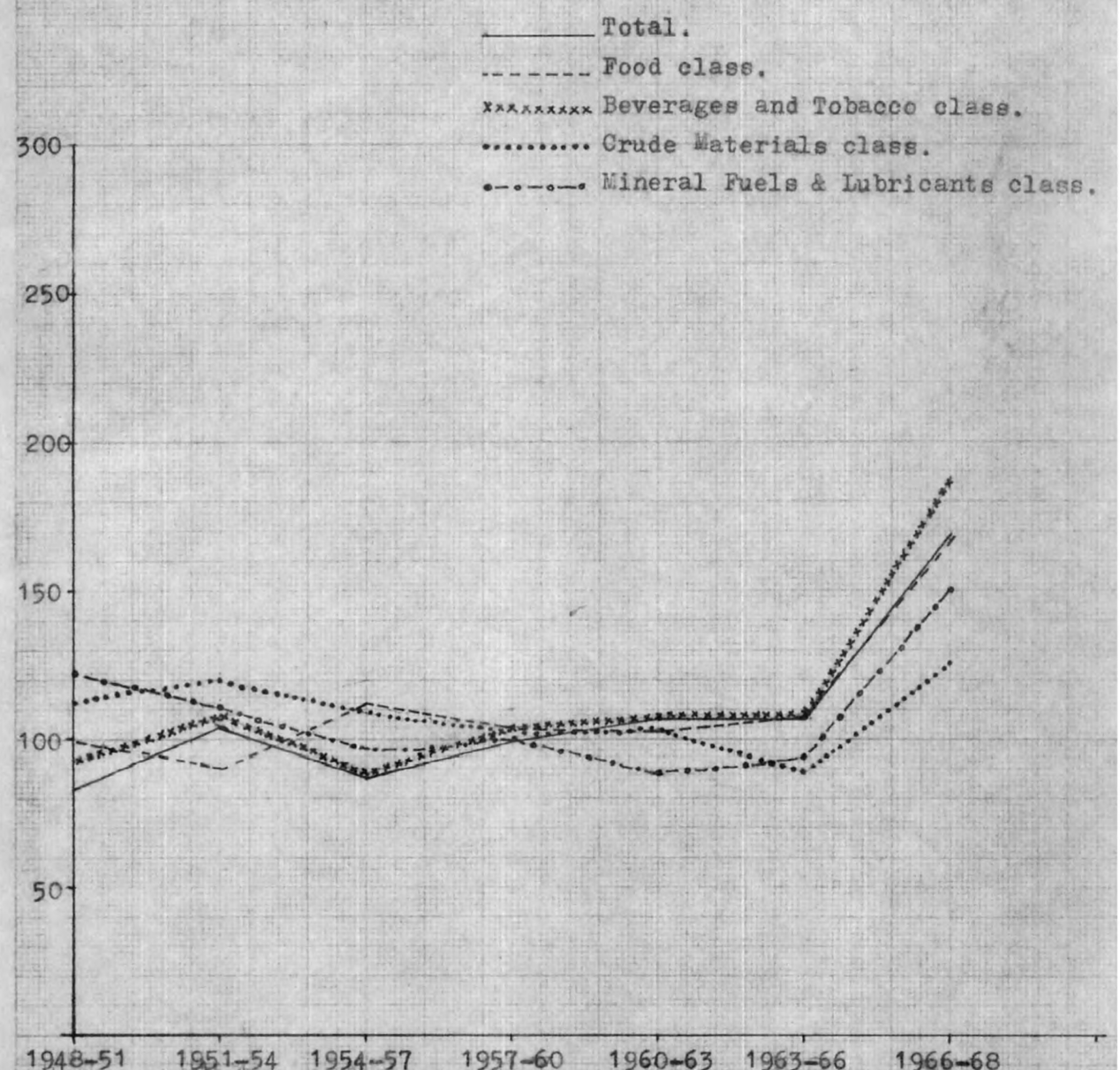
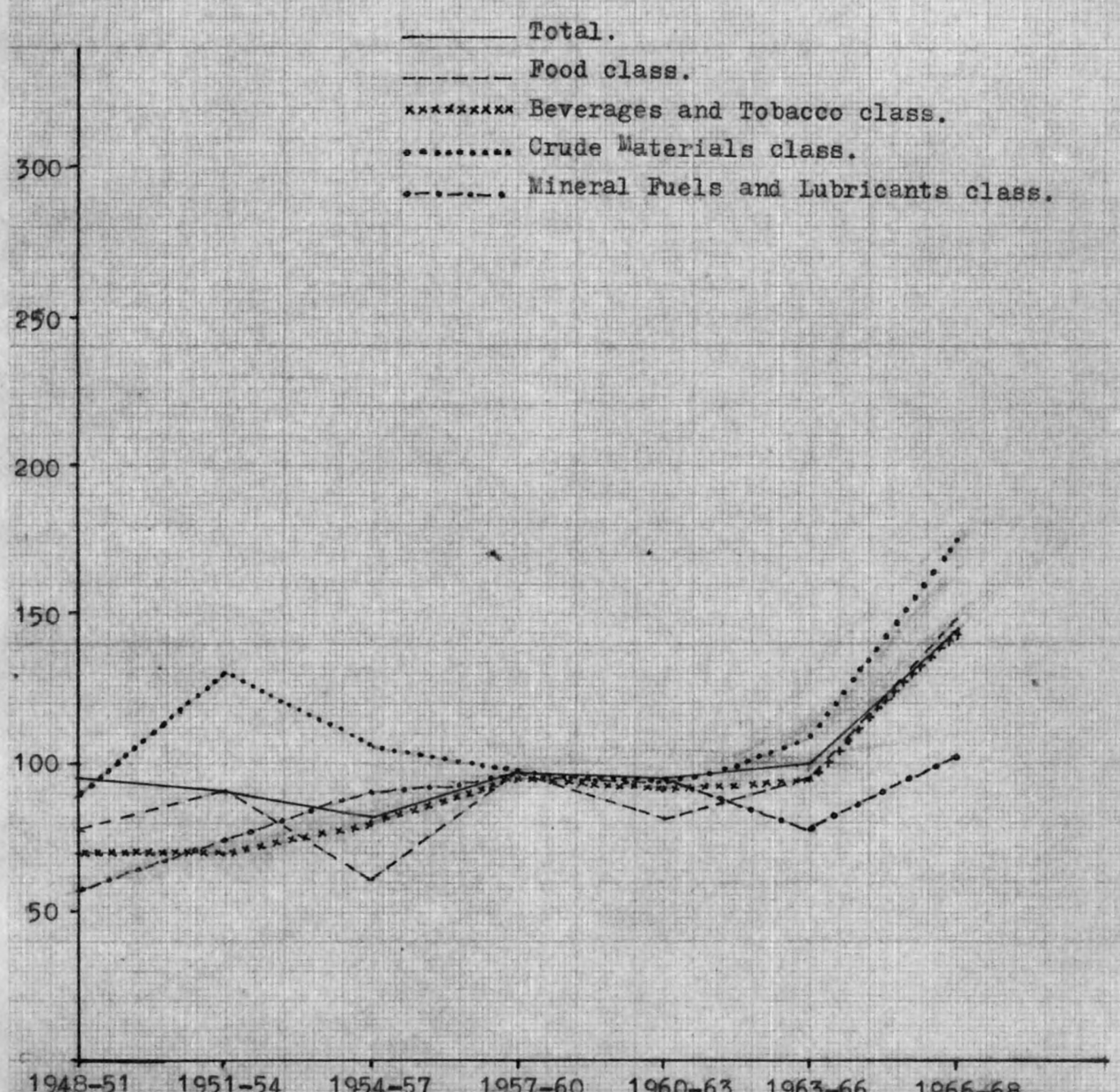
[9]The landborne trade figures were published separately in Indian Trade Journal for these respective years. These figures were also given in Statistical Abstract of India.



Graph 1: Unit Value of Exports.



Graph 2: Unit Value of Imports.

ble 11. Index series of unit value, volume and value of resource classes and total trade. (1948-49 to 1967-68) - (Yearly averages)

riod	Food			Beverages & Tobacco			Crude Materials			Mineral, Fuels & lubricants			Total Trade		
	Volume	Unit value 1958=100	Value	Volume	Unit value 1958=100	Value	Volume	Unit value 1958=100	Value	Volume	Unit value 1958=100	Value	Volume	Unit value 1958=100	Value
orts															
48-51	60	99	54	84	93	79	77	113	86	45	122	56	104	83	87
51-54	83	90	72	96	108	102	88	120	104	95	111	106	100	104	100
54-57	82	112	92	86	88	76	89	109	104	84	97	82	118	87	103
57-60	95	103	98	80	103	81	109	101	111	100	100	100	104	100	104
60-63	109	103	112	94	108	101	112	103	116	77	89	69	106	108	114
63-66	121	108	130	133	107	142	150	88	132	107	94	102	127	108	139
66-68	108	167	180	99	188	124	163	126	136	74	155	116	121	169	203
orts															
48-51	95	77	72	314	70	213	151	89	137	109	57	63	79	95	68
51-54	121	91	105	226	70	158	136	131	188	136	75	102	92	90	84
54-57	59	61	46	174	80	139	129	106	137	107	90	95	101	82	83
57-60	86	97	80	102	95	98	123	97	120	121	95	113	115	95	106
60-63	94	91	85	92	91	84	184	92	170	118	94	111	128	96	123
63-66	148	95	140	43	94	40	141	109	153	199	78	106	117	100	151
66-68	238	149	352	37	149	57	148	175	174	90	102	61	162	145	234

early sixties. However, after the devaluation of Indian rupee it rose to a height of 145 in 1966-68. In the twenty years movement, export unit values gained more than those of imports, the gain in our net Barter terms of trade being 18 per cent.

Next let us make classwise observations. Taking the trend of total export unit value for comparison, it is noticed that the unit value of food class moved in the opposite direction to the trend of total export unit values till 1960 during each of the three year intervals. The unit value of this class declined from 99 to 90 during 1948-51 to 1951-54. At the same time, total export unit value increased from 83 to 104. Similar opposite movements are noticeable till 1960. After 1960, the two indices are seen moving in line with each other. The trend in the unit value of beverage and tobacco class shows a different pattern. The unit value in this case is seen to have moved in the same direction to that of total export unit value in each of the subperiods. One significant feature is that the unit value of this class was above the total export unit value till 1960 and again during 1966-68. The unit value of crude materials is seen, again, moving in the same direction to that of total export unit value, but only till 1957 and then after 1966. During the intermediate period of 1957 to 1966, however, both indices moved in the opposite direction. The unit value of this class declined from 109 to 88 during the period of 1954-57 and 1963-66. At

the same time the total export unit value increased from 87 to 108. Similar opposite variations in the two unit values are again noticeable in the case of mineral fuel and lubricant class. The unit value of this class declined from 122 to 111 during the period of 1948-51 to 1951-54. At the same time the total export unit value increased from 83 to 104. Another opposite movement of the two indices is again noticed during the period of 1957-60 to 1960-63. In all other subperiods, both indices have moved in the same direction.

On the import side, it is noticed that the unit value of food class moved parallel to that of total import unit value for most of the time except during the two subperiods of 1948-51 to 1951-54 and 1957-60 to 1960-63. In both these cases, opposite movements are visible. The unit value of food class increased from 77 to 91 during the subperiod of 1948-51 to 1951-54. At the same time the total import unit value decreased from 95 to 90. Such opposite movement is noticeable again during 1957-60 to 1960-63. The unit value of beverage and tobacco class has again moved quite differently from that of total import unit value during the two periods of 1948 to 1957 and again during 1957-60 to 1960-63. The unit value in this case increased from 70 to 80 between 1948-51 and 1954-57. During the same time the total import unit value decreased from 95 to 82. Same was the case during

1957-60 to 1960-63. Afterwards, it has closely followed the trend of total import unit value. The trends in the unit value movements of crude materials class again demonstrates significant variations. The unit value of this class increased from 89 to 131 during the period of 1948-51 to 1951-54. The total import unit value decreased at the same time from 95 to 90. Similarly the unit value of this class declined from 106 to 92 during the two subperiods of 1957 to 1963. At the same time the total import unit value increased from 82 to 96. After 1963, both indices have moved in the same direction. Unidirectional movements in the unit values of mineral fuels and lubricant class and the total import unit values have been less often as compared to other classes.

From the above evaluation, it might be concluded that there were significant variation in resource commodity prices relative to the general trend of total unit values. Taking the general trend as standard, let us try to examine of what a measurement of resource content at constant prices would have shown. Of course, the relative price variations in the two resource classes - Beverage and Tobacco class and Mineral Fuels and Lubricant class - might have left little impact on these two resource classes as their relative shares have been only marginal. However, this is not the case with respect to the other two resource classes. Here a measurement of resource

content at constant prices might have brought some readjustment in their respective relative shares particularly for the period before 1960 as the relative variations were more during this period.

Supply and/or Demand Conditions

Using the index series of unit values and volume given in Table 11 we have attempted here to study the impact of supply and/or demand forces on the changing conditions in the resource markets. In order to measure respective impact of demand and/or supply, we computed the relative changes in unit prices and volumes of resource products by taking the general trends of total exports and imports as basis.[10] The study is for six short periods (five periods of three years each and one period of two years) and each following period is compared with the preceeding period. An increase in price along with an increase in quantity is marked with D +, a decrease in price along with a decrease in quantity is marked with D -, a decrease in price along with an increase in quantity with S +, and an increase in price along with a decrease in quantity with S -. A change in quantity with no corresponding change in price is marked * indicating that both S and D have changed but relative dominance of one over another is indeterminate. The results are givenin Table 12.

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[10]The method is given by J. Vanek. See the Natural Resource content etc. Op.Cit., pp.47-49.

Table 12. Effects of supply and/or demand in resource products.

Period compared with period immediately preceeding	Food	Beverage and Tobacco	Crude Materials	Fuel and Lubricants
Exports				
1948-51				
1951-54	S +	S +	S +	S +
1954-57	S -	D -	S -	S -
1957-60	D -	D +	S +	S +
1960-63	S +	S +	S +	D -
1963-66	S -	S +	S +	D +
1966-68	D -	S -	S +	S -
Imports				
1948-51				
1951-54	D +	S -	S -	D +
1954-57	D -	S -	D -	S -
1957-60	D +	S -	D -	S +
1960-63	D -	D -	S +	D -
1963-66	*	*	S -	S +
1966-68	D +	S -	S -	D -

From Table 12, it is noticed that on export side, variations in conditions of domestic supply dominated more than the foreign demand. Foreign demand entered only six times out of twenty four cases. Class-wise, demand entered only two times each in food class, beverages and tobacco class and mineral fuel and lubricant class. Domestic supply dominated in the rest of the cases. Throughout, it is seen further, that the supply schedules shifted rightward in more cases than leftwards.

On the side of imports, we notice strong variations in both domestic demand and foreign supply. The domestic demand entered at least eleven times, the class-wise distribution being five in food class, one in beverage and tobacco class, two in crude materials class and three in fuel and lubricant class. On the demand side the tendency has been more frequently to shift leftward.

On the whole we can say that variations in domestic demand and supply were relatively stronger in the last twenty years than in the rest of the world.

The Relative Resource Requirements of Our Trade

Table 13 evidently shows the direction in which our resource requirements have been changing over the twenty years period. Two indices are used here in order to locate the

Table 13. The relative resource requirements of India's foreign trade. (Yearly averages)

Period	Total value of resource products Exported	Total value of resource products Imported	R-products exported / R-products imported x 100	P.C. of R-product exported / P.C. of R-product imported x 100
(1)	(2)	(3)	(4)	(5)
	(Rs. in lakhs)			
1948-51	21817	33829	65	82
1951-54	24116	41544	72	85
1954-57	31017	27006	119	147
1957-60	32441	34251	95	147
1960-63	35846	37436	96	160
1963-66	41836	45515	93	143
1966-68	61717	91008	68	120

Source: Appendix IV - 5.

changing phase of India's true resource requirements. The first is a ratio of the value of resource products exported over imported and second is a ratio of percentage share of

resource product exported over that imported.[11] There are two assumptions here: first, it is assumed that resource requirements per rupee of exports and imports of resource products are similar; second, the non-resource product requirements of resource products are small.

The first index, after an initial rise, has started to ascend down after 1957. Again it is to be noted that in no year, with the exception of 1954-57, exports of resource products have been able to self-finance imports.

The second index is an approximation to the resource requirements per rupee of exports over imports. Here again one notices a rising trend only till 1963 and then falling in the rest of the period.

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[11] The first ratio may be symbolically written as $\frac{R_e}{R_i}$ and the second ratio as, $\frac{R_e}{R_i}$ (I/E). (See Vanek. Op.Cit., p.50).

There is one limitation in the use of the first index. This arises because of two different valuations of exports and imports. Since exports are valued at f.o.b. prices, it includes the trade and transport margins. The imports are valued at c.i.f. prices and so it does not include the trade and transport charges. In other words the imports are under valued compared to exports. If import values are to be strictly compared with export value, then import values should be adjusted by taking into account the trade and transport margins. Such adjustment will of course change the absolute value of these ratios unless otherwise stated that trade and transport margins are a constant proportion of import value. Here no attempt has been made to adjust import values because of lack of proper information on this trade and transport margins. It is feared that any approximation method might involve more errors. However the second index is not affected by this deficiency.

Regional Distribution of Resource Products

Tables 14 A and 14 B show the regional distribution of resource products for certain selected years. It is evident from the table that there have been far reaching changes in the direction of our trade with reference to these resource products. To start with exports it will be noticed that the main market for our food exports continues to be West Europe although its proportion has tended to fall from 53 per cent to 39 per cent between 1950-51 and 1965-66. The most significant expansion in the trade of food products has been with East European countries in which case the proportion has increased from an insignificant one per cent in 1950-51 to 26 per cent in 1965-66. Our exports of food products to Asia have been fairly stable around 10 to 15 per cent. The trade in this resource class with North America has registered a fall from 29 per cent in 1950-51 to 16 per cent in 1965-66. While our exports of this resource class to Africa show some marginal expansion, both South and Central America and Oceania appear very little in our trade chart.

In the case of beverage and tobacco class, it will be noticed again that West Europe and East Europe are the main consumers, the latter making its phenomenal influence in the post sixties. While our trade in this resource class with Asia registers a decline from 27 per cent to 13 per cent

Table 14 A. India's exports

		51	1965-66
	Value (lakhs	5	24138
Food class	Percentage o total food exported to		38.6 25.8 11.8 6.4 15.7 --- 1.7
	Value (lakhs		2170
Beverage and Tobacco	Percentage o total Bevera and Tobacco exported to		49.0 32.0 12.9 6.1 --- --- ---
	Value (lakhs		13491
Crude materials	Percentage o total crude materials exported to		20.8 24.9 41.2 0.4 11.1 0.4 1.2
	Value (lakhs		932
Mineral fuels and lubricants	Percentage total miner fuels and lubricants exported to		7.3 ... 84.9 ... 1.2 4.1 2.5

Table 14 B. India's imports

		1965-66
Food Class	Value (lakhs	34082
	Percentage of total food imported from	0.3 0.2 7.4 2.7 85.9 ... 3.5
Beverage and Tobacco	Value (lakhs	56
	Percentage of total Beverage and Tobacco imported from	76.9 ... 20.0 ... 3.1 --- ---
Crude materials	Value (lakhs	12155
	Percentage of total crude materials imported from	2.9 2.6 33.8 25.3 29.8 1.4 4.2
Mineral fuels and lubricants	Value (lakhs	6835
	Percentage of total crude materials imported from	6.4 17.0 66.8 ... 9.8 ... ...

Source: Annual Statistics of Government of India.)
1947-48 to 1955-56
Annual Statistics,
and nine
Government ment of Commercial
Supplement
Intelliger

between 1950-51 and 1965-66, that with Africa shows a marginal improvement and the rest appear to be insignificant.

Though West Europe and North America were the main consumers of our crude materials exports in 1950-51, it was no more so in 1965-66. The share of West Europe in this resource class has declined from 44 per cent to 21 per cent between 1950-51 and 1965-66 while that of North America from 38 per cent to 11 per cent. East Europe and Asia have replaced them where the former's share has gone up from a little less than one per cent in 1950-51 to 25 per cent in 1965-66 and the latter's share from 11 per cent to 41 per cent during the same period. The rest of the regions occupy only an oblivious position in our trade chart.

Asia constitutes the main and biggest market for our exports of mineral fuels and lubricants. About 50 to 80 per cent exports of this class goes to this region and the rest of the regions are only marginal.

Next let us turn to imports. North America constitutes the biggest supplier of food products whose share has gone up from 26 per cent in 1950-51 to 86 per cent in 1965-66. Nearly 60 per cent of imports of beverages and tobacco products was from North America in 1950-51, but in 1965-66, 80 per cent of the imports of this class came from West Europe. In the case of crude materials class, Asia, Africa and North

America continues to be the main suppliers although there is some change in their respective relative positions. While the share of Asia improved from 10 per cent in 1950-51 to 34 per cent in 1965-66, the share of both Africa and North America has shrinked, the former's from 48 per cent to 25 per cent and the latter's from 36 per cent to 20 per cent. The bulk of mineral fuels and lubricants come from Asia although the region's share has somewhat shrinked from 87 per cent to 67 per cent between 1950-51 and 1965-66. At the same time, it is noticed that East Europe has tried to fill this gap whose share has gone up from a nil in 1950-51 to 17 per cent in 1965-66.

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APPENDIX IV - 1

Note on Unit Prices, Quantity and Value Indices of India's Foreign Trade

Before January 1957, the Department of Commercial Intelligence and Statistics used to publish index numbers of India's foreign trade with 1952-53 as base for sixteen groups under exports and for seventeen groups under imports in addition to those for the three principle classes of commodities and the general overall indices. After the adoption of the Revised Indian Trade Classification in January 1957, a new series of index numbers were published for twenty one groups under exports and twenty two groups under imports in addition to nine sectional indices each in exports and imports and the overall indices with 1958 as base. Because of the wide changes in the trade classification in January 1957, the two index series were not comparable. Therefore estimates of unit price and quantity index were made for the four resource classes with 1958 as base, after regrouping the relevant items of the old classification according to the Revised Indian Trade Classification of 1957. Thus they were connected to the rest of the series published by the Department of Commercial Intelligence and Statistics. The regrouping of items according to the new classification of 1957 has been possible only with some approximation. The index series for the total trade for the years 1948-49 to 1956-57 are

$$\frac{\sum' P_n Q_n}{\sum' P_o Q_n} = \frac{\sum P_n Q_n}{\sum P_o Q_n}$$

$$\therefore \sum' P_o Q_n = \frac{\sum' P_n Q_n \times \sum P_o Q_n}{\sum P_n Q_n}$$

$$= \frac{\dfrac{\sum' P_n Q_n}{\sum P_n Q_n}}{\sum P_o Q_n}$$

$$= \frac{\text{Total value of all items in the section}}{\text{Unadjusted index for the section}}$$

The above value of $\sum' P_o Q_n$ is substituted in equation (2) in order to obtain the adjusted index number P'.

Quantum indices are similarly adjusted by using the adjusted unit value index P' instead of the unadjusted index (P)[1].

Coverage of the Unit Price Index of Resource classes (1948-49 to 1957-58):

The following table shows the coverage of the unit price index for the years 1948-49 to 1957-58 which had to be calculated.

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[1]The calculation of unit price, index and quantum index are based on the technique adopted by Department of Commercial Intelligence and Statistics (Indian Trade Journal, 18th June 1960). We have followed the same method in order to maintain uniformity.

Table 1. Coverage of the unit price index.

Year	Exports			
	Number of articles included	Total value of included articles (Lakhs of Rs.)	Grant total value of all articles (lakhs of Rs.)	Percentage covered
Section 0: Food.				
1948-49	9	8114	8387	97
1949-50	9	9894	10351	96
1950-51	9	11615	12237	95
1951-52	9	13608	14695	92
1952-53	9	12414	13109	95
1953-54	10	13648	14030	97
1954-55	10	18160	18929	96
1955-56	10	13852	15851	87
1956-57	10	17711	18593	95
1957-58	10	16998	18242	93
Section 1: Beverages and Tobacco.				
1948-49	2	826	829	100
1949-50	2	1196	1198	100
1950-51	2	1846	1849	100
1951-52	2	2249	2255	100
1952-53	2	1558	1563	100
1953-54	2	1210	1215	100
1954-55	2	1300	1308	99
1955-56	2	1183	1190	100
1956-57	2	1500	1504	98
1957-58	2	1280	1370	93

Table 1 (contd.)

Year	Exports			
	Number of articles included	Total value of included articles (Lakhs of Rs.)	Grant total value of all articles (Lakhs of Rs.)	Percentage covered
Section 2: Crude Materials.				
1948-49	16	7610	8073	94
1949-50	17	8115	9074	90
1950-51	17	7454	9546	78
1951-52	17	8941	10652	84
1952-53	18	8811	11601	76
1953-54	17	8314	9920	84
1954-55	17	8139	9596	85
1955-56	17	10423	12034	87
1956-57	18	8987	10189	88
1957-58	18	9557	11893	80
Section 3: Mineral, Fuels and Lubricants.				
1948-49	2	490	500	98
1949-50	2	580	581	100
1950-51	2	563	571	99
1951-52	2	1063	1083	98
1952-53	2	1120	1158	97
1953-54	2	845	856	99
1954-55	2	774	788	98
1955-56	2	586	717	95
1956-57	2	696	890	83
1957-58	4	1100	1140	96

Table 1 (contd.)

Year	Imports			
	Number of articles included	Total value of included articles (Lakhs of Rs.)	Grant total value of all articles (Lakhs of Rs.)	Percentage covered
Section 0: Food.				
1948-49	14	11179	12042	93
1949-50	14	13044	15539	85
1950-51	14	10765	11208	96
1951-52	14	22070	26456	84
1952-53	14	14523	18508	80
1953-54	14	8727	11361	77
1954-55	14	12625	13753	92
1955-56	14	4638	5952	78
1956-57	14	4192	5331	80
1957-58	14	10436	11651	90
Section 1: Beverage and Tobacco.				
1948-49	4	471	516	91
1949-50	4	318	350	91
1950-51	4	355	389	91
1951-52	4	306	352	87
1952-53	4	291	342	85
1953-54	4	193	237	82
1954-55	4	223	274	81
1955-56	4	241	289	84
1956-57	4	218	258	85
1957-58	4	188	220	85

Table 1 (contd.)

Year	Imports			
	Number of articles included	Total value of included articles (Lakhs of Rs.)	Grant total value of all articles (Lakhs of Rs.)	Percentage covered
Section 2: Crude Materials.				
1948-49	17	8007	8793	91
1949-50	17	7502	8161	91
1950-51	17	14854	16236	91
1951-52	17	22796	24700	92
1952-53	17	10601	11080	96
1953-54	17	8660	9449	92
1954-55	17	9823	10668	92
1955-56	17	10796	11645	93
1956-57	17	9235	10724	86
1957-58	17	8716	10400	84
Section 3: Mineral, Fuels and Lubricants.				
1948-49	7	3518	3638	97
1949-50	7	5269	5390	98
1950-51	7	5467	5547	99
1951-52	7	7042	7197	98
1952-53	6	7497	7745	97
1953-54	7	8352	8486	98
1954-55	7	8133	8284	98
1955-56	7	5277	5569	95
1956-57	8	7451	7830	95
1957-58	8	9551	9967	96