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Export diversification through tropical products: Prospects in Brazil

Intereconomics

Suggested Citation: Wilhelms, Christian (1966): Export diversification through tropical products: Prospects in Brazil, Intereconomics, ISSN 0020-5346, Verlag Weltarchiv, Hamburg, Vol. 01, Iss. 6, pp. 4-9

https://doi.org/10.1007/BF02923304

This Version is available at: https://hdl.handle.net/10419/137616

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Export Diversification Through Tropical Products

Prospects in Brazil

By Christian Wilhelms, Hamburg

Export diversification—a phrase rarely used a few years ago—now appears with increasing frequency. We find it mainly in connection with the handling of economic problems in developing countries, in particular those of foreign trade. Export diversification is the measure recommended to developing countries for improving their export structure and is often the one they themselves consider indicated from their own appreciation of their foreign trade position.

There are two forms of export diversification: product diversification (or diversification of supply) and market diversification (or geographical diversification); the purpose of both is to raise foreign exchange income above the limits set by those export products and markets hitherto considered "traditional". The dominant long-term aim of export diversification—quite apart from the improvement of the foreign trade situation due to higher foreign exchange earnings—is to reduce economic instability.

There are two essential factors which encourage export diversification in developing countries:

the incidence of crises in developing countries, due to economic instability, caused by their dependence upon the foreign exchange income from one, or a few, staple products (single-product economies), where export prices tend to fall or to fluctuate sharply;

the necessity to supplement outside contributions to the financing of development or industrialisation by the foreign exchange income derived from export earnings.

Unsatisfactory Export Structure in Developing Countries

In developing countries, there tends to be an imbalance in the export structure, both as regards the range of goods offered and their dependence upon certain markets: in certain circumstances this two-fold dependency can have serious consequences for a developing country.

"Traditional" products predominate: those agricultural products and raw materials which—owing to their orthodox production structure—developing countries have always had to offer, which are produced by numerous countries, but total demand on the world market for these is limited and they are difficult to sell. Growing domestic production in countries which used to be buyers further decreases the chance of selling such products. These are products which—because of the large quantities available—fetch only low prices, so that in spite of increased production and sales, earnings fall off in the individual countries. Or

possibly consumption levels are falling, either as a whole or relatively, because of technical advance—substitution by synthetic products, technological economies of material, disappearance of out-moded demand—or due to changes in consumer behaviour.

Additional difficulties occur because of the erroneous way the majority of the very numerous producers offering agricultural products is repeatedly observed to react: in times of temporarily high prices capacity is increased because they anticipate, over-optimistically, that prices will continue to be high or may even rise. There is a time-lag before this increased production reaches the market but when it does so, or merely in anticipation of this (future) output, prices fall. Since he understandably wishes his own earnings not to fall too far below their earlier level, the individual producer reacts in a manner absolutely contrary to that required by the market situation: he increases his output.

Not infrequently, more than 50% of all foreign exchange earnings of a developing country is derived from income from just such an unreliable product. Harvest failures due to storm destruction, pests or epidemics also cause fluctuations in foreign exchange income and make it impossible to exploit all sales opportunities offered by the market.

As mentioned above, the situation is made more difficult by the fact that individual developing countries are dependent not only upon exporting a limited range of these "traditional" products and that their economic position is determined by the foreign exchange earnings of such products, but that, to a scarcely lesser extent, they are dependent upon individual purchasing countries: the type of products offered for export means that the number of markets cannot be increased indefinitely.

Because of their low level of industrialisation, developing countries cannot become buyers of agricultural products and raw materials, these products being intended mainly to supply the requirements of industrial countries. Whilst traditional ties with certain markets can, on the one hand, ensure entry to that market they may also—where a new market has to be created—close the door. Obtaining a foothold in the markets of socialist countries with a planned economy presents yet other and different problems.

Dynamic Expansion of Exports Can Be Achieved Only by Diversification

The export problems of developing countries and their shortage of foreign exchange has become one of the main problems of world trade, and an obstacle to its harmonious development. But developing countries are

concerned not only with eliminating economic instability or preventing excessive fluctuations in the size of foreign currency income. Export expansion and increased foreign currency earnings are of prime importance to their economic advance: foreign currency deriving from the sale of their products means that they can pay for their development programme and for the industrial equipment, raw materials and consumer goods which they do not yet produce, but which are increasingly required for an uninterrupted process of development. But the prospects of solving the foreign currency problems of developing countries solely by attempting to increase exports of "traditional" products to "traditional" markets are not good-in spite of the great number of proposals and recommendations put forward in Geneva in spring 1964, at the U.N. Conference on Trade and Development held there. As to the export prospects for "traditional" products of developing countries, these might even awaken false hopes: a significant and long-term improvement in the foreign trade situation of developing countries can only be achieved if exports are raised by diversifying not only export goods, but export markets too.

The positive and dynamic concept of export diversification certainly does not imply that the hitherto "traditional" export items should be neglected. Existing marketing opportunities for these must continue to be exploited and extended by all possible means, wherever openings occur. But within the framework of planned activity which must dictate the country's overall export policy, efforts must be made to add "new" items to those exported hitherto and "new" markets to the former market countries.

In this sense, and over and above agricultural products and raw materials, product diversification for developing countries means exporting semifinished and finished goods—insofar as these can be manufactured—and investigating systematically the opportunities for starting up new types of production—whether in agriculture, mining or in the finishing and processing industries.

Market diversification means extending exports to those markets where deliveries have not been made hitherto, i.e. quite apart from the main buyers among industrial countries, it is necessary to nurse along smaller markets previously neglected, to campaign for exports of new products to other developing countries and investigate and exploit sales opportunities in the markets of the Eastern bloc countries.

Neither product diversification nor market diversification are simple, easily accomplished tasks, and to expect immediate positive results from every attempt made would be to deceive oneself.

Diversification Phenomena Encountered in Exporting from Brazil

The necessity to diversify exports, as described above, is a matter of greater or lesser urgency in the majority of developing countries. It is not a problem restricted to the countries of Latin America, even though increasing emphasis is being placed upon the importance and necessity of changing the structure of exports from Latin America to promote the development of this sub-Continent. And the necessity to diversify exports is by no means a peculiarly or predominantly Brazilian problem.

In a certain sense, Brazilian exports—in spite of the dominant role still played by coffee, which accounts for about one half of all foreign currency earnings, although last year its share was reduced to about 44 %—are relatively widely diversified. Either because the internal market has, for the time being, insufficient absorption capacity or this is below the expected level, or because the economic necessity for higher exports has already been recognised or the numerous incentives and export concessions have made an impression on entrepreneurs, exports of industrial products are increasing. ² This is shown by the rise in exports of industrial goods from US-\$ 26.7 million in the first nine months of 1964 to US-\$ 71.3 million in the corresponding period of 1965. ³

In the case of Brazil, however, it has not been only industrial products which have hitherto contributed to export diversification. The most impressive example, both from the point of view of the amount of export

3 Statistics from the Divisão de Estatística da CACEX, taken from the Weekly Bulletin of the German-Brazilian Chamber of Commerce and Industry in Rio de Janeiro, No. 44, Jan. 15, 1966, p. 3.



established 1879

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INTERECONOMICS, No. 6, 1966

¹ See Werner K. Tillmann's contribution: "Latin America's Export Structure Needing Reform"; INTERECONOMICS, Vol. 2 (Feb. 1966), p. 15 ff.

⁽Feb. 1966), p. 15 ff.

2 Efforts to promote exports of industrial products are not so very new. As early as mid-1963 attempts were made to promote a regular export programme for industrial goods by working out a comprehensive programme (proposals of the Working Party to step up exports of Brazilian industrial goods), thus trying to remove obstacles to exporting and to create favourable conditions so that industrial exports were no longer considered merely as "prestige exports" by means of which certain firms could show off their international performance or which appeared as particularly profitable but non-recurring items. — See too, Christian Willele In elms: Brazilian Industry Must Export: WIRTSCHAFTSDIENST, 43rd year (1963), p. 430 ff; Brazil Producing More Than Just Coffee: WIRTSCHAFTSDIENST English Edition, No. 12 (1963), p. 17 ff.

earnings and the position it has achieved in the index of export products, is Brazilian iron ore. After coffee (US-\$ 706.5 million), iron ore took second place in 1965 at US-\$ 102.9 million. Cotton—hitherto the second largest export—has fallen to third place at US-\$ 95.6 million. Admittedly, such a spectacular result of export diversification—if that is what this phenomenon is to be ascribed to—is due to particularly favourable circumstances and conditions.

Opportunities for Tropical Products

The opportunities outlined below will point up the fact that, in speaking of the potential for export diversification, it is necessary to think not of particularly well-placed special cases nor only of industrial products in the true sense.

Such opportunities for further diversifying Brazilian exports are to be found in the agricultural sector, in particular amongst Brazil's tropical products. Due to her geography and climate, Brazil supplies the world market with a range of tropical agricultural products other than coffee, e.g. sugar (her oldest export product after timber), cocoa, bananas, oranges, cotton, sisal and oil-seeds. But this is not an exhaustive list. Amongst the numerous tropical products to be found in Brazil, some of which are autochthonous, there are many others whose export prospects appear extremely promising.

The Cashew (Cajú)

The cashew tree, which grows prolificly in the North-East of Brazil—estimates vary between 50 and 350 million trees although so far there are only a few plantations, for instance, in the State of Ceará, the largest cashew producer—and could become, with its fruits, the basis of an interesting export industry.

A whole range of products can be obtained from the industrial preparation and processing of the two parts of the cashew fruit. The so-called "cashew apple", which is extraordinarily rich in vitamins, can be processed to provide, inter alia, juice for soft drinks, stewed fruit, jams, crystallised fruits and liqueurs. It should be possible to open up markets for these products in the drink industry (soft drinks, spirits), in the confectionery and jam industries and in the field of fruit preserves. Under the name "cashew nuts" the kernel of the cashew seed has already found a very receptive market. Of less importance are the byproducts from the preparation of the kernels, such as cashew oil and cashew meal. "Cashew nuts" are supplied on the world market almost exclusively by India, where production was commenced about 30 years ago and almost the whole of India's domestic production, as well as the major part of Africa's production of raw nuts, are processed there for export. In 1961 the world export of kernels was running at 41,000 tons, compared with 18,000 tons in 1950. Based on private estimates, about 1,300 tons of "cashew nuts" were imported into the Federal Republic in 1962, mainly from India but a small percentage also from East Africa.

In the State of Ceará there are already various smaller and larger sized firms concerned with the industrialisation of cashew production there (e.g. processing oils, kernels, wine, juices and tinned fruits) and the same holds for Rio Grande do Norte, Piaui and Paraiba.

Cashew production could offer employment and income to a large part of the population in the North-Eastern States and modern processing plants are needed to develop production for export and also extend cashew production to meet the demand on the domestic Brazilian market and, in particular, on the export market, plus a systematic planting of orchards and proper seed selection of the Anarcadium occidentalis L. and other varities; the following are also necessary: organisation of raw material movements (the cashew fruit spoils quickly), solution of mechanisation problems in kernel extraction and improvement of end-product quality, according to the requirements of the markets.

Mangoes

The many varieties of mangoes which grow in Brazil (where they are called "manga") are normally eaten fresh as a dessert. Since the fresh fruit spoils very easily and this makes distribution abroad particularly risky, it is essential that it is transported by fast refrigerated ships, or even better, by air; thus its export development potential lies rather in processing for preserves. The following products are good examples: mango chutney, marmelade and jelly, juice, squash (from ripe fruit), jam and dried mango slices. There should be good openings for the use of mango products in the food and delicatessen trades (ice-cream, puddings) and in the preparation of drinks.

India is practically the only large exporter of mango products with which Brazilian industry would have to compete. Because of the special characteristics of this fruit, the actual eating habits in the potential market countries and, not least, because most mango products are little known, a corresponding amount of introductory work would be necessary. India's efforts in the export field hitherto have already increased at least the public's awareness of mango chutney so that it would be possible to build from this basis. Apart from the establishment of proper processing plants (preserve factories), the following requirements for the exploitation of mangoes in export should be mentioned: selection of good varities of Mangifera indica L., standardisation of fruits, the establishment of extensive orchards, proper supply of raw materials (transport, storage) and, not least, the development of exportable and attractive finished products.

Banana Products

Brazil is the world's largest producer of bananas. In 1963 her production was 313.1 million bushels. However, the banana does not count for much in Brazilian export trade. Only 10.3 million bushels were exported in 1963, valued at US-\$ 2.9 million.

However, for some time attempts have been under way in the State of São Paulo to turn bananas into an important item for export by industrialising banana products. After the State of São Paulo, which, at 47.9 million bushels (1963), is Brazil's most important producer of bananas, the State of Ceará, in the North-East, is the second largest, producing 42.6 million bushels.

Taken as a whole, about one third of Brazil's total production is in the North-East, so that this area would seem an interesting one in which to set up an export industry. By industrialising bananas, i.e. by the industrial processing of the banana fruit and palm, various products could be exported. In the food sector, these are: banana meal (from the dried and ground green fruit), banana flakes and banana powder (from ripe bananas), confectionery (dried bananas, sweets), preserved bananas in tins, banana marmelade, banana juice. It is also conceivable that alcoholic drinks could be manufactured. It would be possible to use parts of the plant for nutritional purposes, even if to a lesser degree, by processing the buds to make a vegetable conserve (somewhat similar to palmito or bamboo shoots). Banana fibre, as raw material for sacks, carpets and mats, can be obtained from the trunk even of the edible banana, as can fodder.

The sale of banana meal and similar products for human consumption depends, in part, upon the opening up of completely new markets. Banana meal can be used for inclusion in the manufacture of foods, for instance: banana powder as an infant food ("Instant Banana"). Combinations of banana meal with other flavourings (e.g. cocoa, coffee, pineapple, cashew, passion-fruit) should be of interest in the food, drink and ice-cream industries.

To provide opportunities for the industrialisation of banana production planters should be encouraged to form cooperative associations to buy up fruit and establish processing plants and to give the planters financial or technical assistance.

Coconut Products

The North and North-Eastern States of Brazil play the dominant role in her coconut production. In 1963, only 25.1 million coconuts, i.e. a mere $5\,\%_0$, came from other parts of the country, compared with the total production of 493.9 million.

Alongside copra and coconut oil, the following products are also suitable for sale in export markets: cattle-cake (expeller), coconut shavings, flakes, meal, milk and coconut fibre. Potential buyers of coconut products are: the oil industry (raw materials for the manufacture of edible fats, soap and candles), the fodder industry (feeding compounds based on, or using, coconut offal or extraction waste), the food industry (manufacture of confectionery, baked goods, icecream, soft drinks) and the hard fibre processing industry (ropes, mats, brushes, brooms, upholstery and insulating materials).

In the North-East of Brazil some coconut processing plants already exist and their production programme often embraces a variety of coconut products. In Sergipe, which, after Bahia and Alagoas, is the third-ranking producer of coconuts, the existing coconut-processing industry is considered to be the most dynamic industrial sector in this State.

The coconut palms growing in the North-East are mainly wild ones. To ensure the proper long-term supply of raw materials for a processing industry plantations would have to be laid out. Intensification and industrialisation of the coconut supply in the Northern and North-Eastern states of Brazil, with a

view to supplying the export market, would, at the same time, open up numerous opportunities for employment.

Industrialisation: Essential Requierement

As illustrated by these four examples of tropical products which could help further to diversify Brazilian exports, the optimum export potential of each "basic product"—i.e cashew, mangoes, bananas, coconuts—can in each case be achieved only through industrialisation.

We shall not deal here with the export of fresh products where the opportunities are, after all, limited and not always exhaustive. This type of export may have its own justification and advantage—for different products fulfill different demand requirements—and can also make an important contribution to foreign exchange earnings. This is pointed up in many countries by the example of banana exports.

The advantages of industrialisation vis-à-vis the direct export of fresh products are considerable:

- ☐ When industrialised products are exported, the refined value resulting from certain manufacturing and processing procedures leads to higher overall yields; because in addition to the proportion of material value of the raw product, it increases the proportion of labour costs which remain in the exporting country. ☐ The very high risk inherent in exporting fresh fruit (fruits spoil easily), which affects each link in the chain of distribution and commences with the problem of availability of suitable shipping facilities on the dates required (e.g. fast ships with refrigerated space), is considerably diminished, if not completely eliminated, since the keeping qualities of industrialised products are incomparably greater than those of fresh fruits.
- The superior transport and storage qualities of industrialised products facilitate export distribution (also smaller quantities can be exported, stored and speedily distributed, transport is not dependent upon special facilities, e.g. refrigerated ships).
- Distribution is facilitated also in the consumer country, and this leads to reduced costs (transport, special storage facilities—as, for example, ripening chambers for bananas or deep-freeze chambers—or loss through wastage), to reduced risks and to a greater field of distribution and thus, because the goods are more readily available and no problems are involved, consumption of the "basic product" increases overall.

For tropical products to make an optimum contribution to export diversification it is in every case necessary to set up plants to prepare the raw material and-so as to extend also the range of products in the sense of diversification—to process it. The result is completely new, modified or refined products and by-products for specific uses in often widely separated markets. Thus the four "basic products" used as examples here do not appear for export simply as four export products of the same name-as would be the case for nonindustrialised products—but serve as raw materials for a wide range of special products. The heterogeneity of products thus achieved diminishes the risk, where distribution is concerned, of becoming excessively and dangerously dependent upon individual markets—both from a geographical and a commodity point of view.

Almost Unknown. Carambola, Conde, Goiaba, Maracujâ

Taking into account the need for industrialisation, Brazil, with her wealth of tropical plants and fruits, should have ample opportunity to diversify her exports by making use of tropical products. Without going into detail, we would like to mention the starting points for extending export potential and/or increasing existing exports of a few other Brazilian products.

The names of certain fruits, such as the carambola (carambole), conde (custard-apple), goiaba (guava) and maracujá (passion-fruit), which are common and much appreciated in Brazil, are almost unknown abroad. These could be sold for export in the form of fruit preserves, juices, concentrates and jams. For example, on the domestic market in Brazil, passion-fruit juice is in great demand, but due to insufficient production, demand is nowhere nearly satisfied. This product, which would be of interest to the drink industry, the confectionery, ice-cream and food industries (e.g. pudding mixes), should have good prospects in the export market. The Pindorama Cooperative in the State of Alagoas is an important manufacturer of passion-fruits (and probably the only single one of any significance at present) and this cooperative is said to have already arranged regular exports to the Federal Republic of Germany.

Better Prospects with Proper Marketing

In certain circumstances sales prospects could be good for the Brazilian products a b a c a t e (avocado) ⁴ and m a t e ⁵, which are already exported. Mate, which is produced mainly in the three Southern States of Paraná, Santa Catarina and Rio Grande do Sul, as well as in Mato Grosso and—but in very small amounts—in São Paulo, is part of Brazil's traditional export programme. The essential requirement for higher export sales of these two products is probably to be found in the application of suitable marketing methods—primarily a modification of the product and the choice of proper channels of distribution.

Whereas the avocado fruit, known as "avocado pear" is mainly exported fresh (i.e. generally unripe) and is offered to the consumer in the same form (and not infrequently still unripe), mate appears on the market as "tea". However, both are still fairly unknown to the German consumer, are thought "foreign" and "strange" or rejected because they are complicated to prepare. With the avocado, it has been a disadvantage hitherto that the fruit is not always available in all food stores, is prone to irregular import, and is found mainly in specialist shops (high priced delicatessen and, sporadically, in the food departments of the larger department stores), so that in the intervals consumers have "lost the habit". Because of high prices there has been no large-scale consumption. 6 In the case of mate the main obstacles are probably to be found in the choice of distribution outlets (drug-stores, health food stores, chemists, but more rarely ordinary food stores).

Changing the product to ensure successful distribution would entail:

For avocados, fruits ripened in Brazil would have to be processed ready to obtain a ready-to-use preserve (for instance, avocado cream or avocado halves) with proper instructions as to their use printed on the tin. There is no doubt that the retail price of such a product could be considerably lower than that of the fresh fruit and would need to be so, in order to ensure a real success in its distribution.

Mate would need to be exported at least as "mate solúvel" ("soluble mate") and possibly as a thickened liquid (extract), after addition of lemon. But far more success could be expected from a base material for the drink industry. This would have to be suitable for the preparation of soft drinks, similar to cola drinks, for which the specific mate taste would have the advantage of enriching the range of taste nuances hitherto available. The characteristics imputed to mate, for example the stimulating effect of its caffeine content, could also be used as a promotion argument. Thus the point of attack for launching the export of mate is to contact the drink industry (brewers, manufacturers of non-alcoholic soft drinks) in the importing countries in order to examine suitable means of modifying the product. 7

Product modification would almost automatically lead to a change in distribution channels. It is obvious also that lasting success for products made more accessible to the consumer by this type of modification can only be achieved if good use is made of advertising.

Export Diversification — The Result of a Systematic Approach

It is all too obvious that the natural riches of tropical developing countries, the very presence of which offer interesting possibilities of exotic tropical products for foreign markets, should be exploited to diversify exports and earn foreign exchange. But there are even more problems connected with diversifying exports by exploiting tropical agricultural products than in diversifying exports through industrial products; the solution of these problems touches upon numerous and very varied spheres.

In order to cope with this, it is necessary to have a very clear idea of the reasons for diversification, knowledge of the points of attack and of the opportunities for applying this tool, as well as a systematic approach. Based on a detailed knowledge of the qualities of, and the opportunities for, development and exploitation of the product, such an approach must concentrate from the start upon the requirements of the foreign market. To a certain extent this is also true when exporting industrial products. However, in the case of industrial products there are differences which make the position simpler, ⁸ since such products are exported mainly from existing factories, being the surplus over and above current production for the

⁴ Persea gratissima Gaertn.

⁵ Ilex paraguariensis St. Hil. or I. amara Loes., I. theaezans Mart., I. cuyabensis Reiss.

⁶ In the meantime, Israel has been making very extensive efforts to popularise the consumption of avocados on the German market and this may lead to certain changes in the long term.

⁷ A distribution campaign for guaraná (paullinia cupana H.B.K.), a climbing plant from the Amazon region, whose seeds are used for soft drinks with a caffeine content, would have to be run on similar lines. There are good prospects for guaraná drinks too on the market of the Federal Republic. In contrast to mate, however, guaraná is not produced by farms but collected from the wild plants in the Amazon region (total production 1963: 154 tons). To obtain regular and sufficient deliveries for the export market, it would thus be necessary to cultivate systematic plantations—but this does not appear to be very much to ask.

⁸ This does not mean, however, that the problem of competitiveness in price and quality involved with exports of industrial products from developing countries are being overlooked here.

domestic market and—after minor modifications to comply with special requirements in the foreign market—they are exported with the certainty of acceptance by the foreign importing market. As a rule, where industrial goods are concerned, it can be taken that the public had at least a general knowledge of the product. This does not preclude that export of widely known industrial products has been preceded by detailed research into sales opportunities.

For tropical agricultural products, in contrast to that, it is the natural qualities of the product and the natural conditions for its growth which are the unalterables. On the one hand, it is the specific and characteristic natural qualities which set the product apart, either because of its taste or because of the opportunities for its exploitation and thus reduce or eliminate any competition from similar, related or substitute products produced by industrialised countries—in contrast to industrial goods, where there is often very direct competition between almost identical products. On the other hand, however, these characteristics raise problems in selling to countries with different climatic conditions—neither tropical nor sub-tropical, but mod-

erate—and therefore with different tastes and requirements. Thus it is necessary to investigate the probable acceptance of the product, both in its natural condition and also when adapted to consumer preferences; it is also necessary to acquaint the consumer with the basic product and with industrialised products derived from this and adapt these to his taste. When exact information about consumer behaviour has been obtained, advertising will be necessary to promote detailed knowledge of the product's qualities.

But this is not all. There are tasks to be performed and problems to be solved all along the route which the product has to follow from its inception, or from its harvesting, right down to the end consumer. 9 We cannot list here all desiderata, but it is clear that a successful diversification of exports by the exploitation of tropical products is dependent upon a multitude of initiatives focussed around a systematic approach.

9 In two of the product studies published by the Hamburgisches Welt-Wirtschafts-Archiv, this is pointed up by using the examples of the two products, Ramie and Babassu. See: Christian Wilhelm S: Opportunities for Increasing Brazil's Exports through Diversification. Part I: Ramie—an export product ripe for development. Hamburg 1963. Part II: Babacu—unexploited wealth. Hamburg 1964.

Shipbuilding and Subsidies – Pros and Cons

By Dr. Karl Kühne, Brussels

World Shipping and Shipbuilding

The question whether shipbuilding subsidies are justified or not cannot be answered without examining the whole background of world shipping.

Demand for Ships

There is some controversy about the long-term outlook for shipping. The volume of world trade has increased by almost 140 % since 1950. Seaborne trade in dry goods grew almost at the same rate, oil transports much faster: by 240 %. Total tonnage of ships did not even double; the only alarm sign seems to be that tanker tonnage trebled ... But at the same time, the efficiency of the Fleet increased, after a fall in the degree of utilisation—largely due to ports delays—had been largely overcome in the early fifties. The Fleet seemed too small in the Korean crisis of 1951 and the Suez crisis in 1956—and yet "a surplus of tonnage emerged in 1958 ..., by 1959 it had all the signs of heralding a prolonged depression ..." 1

In fact, since 1957, the demand for ships had certainly flagged very considerably. Total orders for ships of more than 1,000 GRT, in that year, were around 35 million GRT.

Since then, orders have gone down, after 1959, to less than 20 million GRT and reached a minimum of 19 million GRT at the end of 1963. Since then, orders recovered somewhat, to 40 million tdw. (approximately 25 million GRT). This increase should not be

overrated, the less so as its regional distribution is very uneven. Half of these orders went to Japan which only held 7% of world orders in 1951: That country's fleet alone is to grow by 6.4 million GRT up to 1968, according to the plan of 1963, to something like 19 million GRT; besides, almost 60% of Japan's output are produced for export. A good deal of growth can be expected in the Eastern bloc: the Soviet Union (whose figures are not contained in the above statistics) alone plans to bring her fleet up to 20 million GRT by 1980 (actually: 7 million GRT). The most dynamic growth in shipping will therefore hardly bring any great benefit to Western yards.

Supply of Ships

On the whole, the supply of ships, on a world scale, decreased by some $15\,^{0/6}$ between 1958 and 1961 and since then recovered by about one quarter: But almost the whole increase of 2.3 million GRT between 1961 and 1964 was swallowed up by Japan; other countries like Sweden benefited by the continued decrease in German and (up to 1963) British shipbuilding.

Ships Launched *
(in 1,000 GRT)

| year | Japan | Great Britain | Sweden | Germany (Fed. Rep.) | World |
|------|-------|------------------|--------|------------------------|--------|
| 1956 | 1,746 | 1,383 | 489 | 1,000 | 6,670 |
| 1958 | 2,067 | 1,402 | 760 | 1,429 | 9,269 |
| 1961 | 1,799 | 1,192 | 742 | 962 | 7,940 |
| 1963 | 2,367 | 928 | 888 | 971 | 8,538 |
| 1964 | 4,085 | 1,043 | 1,021 | 890 | 10,264 |
| 1965 | | | | | 12,220 |

^{*} according to Lloyds' Register.

¹ J. R. Parkinson, The Economics of Shipbuilding, Cambridge 1960, p. 54.