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A STRATEGY MODEL FOR EXPORT MARKETING

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ABSTRACT (within 250 words)

Marketing planning for exports may be suboptim if the product-market strategy itself is not maximally effective. In this paper, a method is developed for choosing an appropriate product-market strategy, given the relative endowments of the exporter and the possible client countries. It is argued that in selecting product-markets for exports competitive advantage as well as export potential are important. Furthermore, competitive advantage should be computed on the basis of marketing and technological fac in addition to traditional factors. The method is illustrated by means of a simulation using hypothetical data.

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Date : 9/12/75

A STRATEGY MODEL FOR EXPORT MARKETING *

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1. Need for an Export Strategy Model

The development of exports, especially of non-traditional goods, is a major component of the economic policies of many Third World countries, including India. Successful export programmes have to be based on sound product-market strategies. In this paper, we develop a system of screening products and markets for exports by an exporter in an underdeveloped country facing a highly competitive world market.

Before delving into the conceptual basis and the specific structure of the model, some comments on the relationship between export policy and economic development are in order. While exports assume a critical transient importance in an economy starved of foreign exchange, it is not necessarily true that a growth policy based heavily on exports will meet the long-term political and economic objectives of most Third World countries. As Amin (1974) points out "(i)t is more to the (underdeveloped) country's interest to develop those bunches of production in which the greatest (internal) progress is possible, and to subject its choices, where foreign trade is concerned, to the priority requirements of this kind of development. The trading options thus decided on will have to be modified at each phase of development" (p.46). Thus exercises in export strategy at micro level, such as the one attempted in this paper, will contribute to macro goals only when the export choices are consciously subjected to the socio-economic requirements of the domestic development. With the backdrop of this caveat, we would now review the conceptual issues underlying export trade flows.

The subject of trade flows - magnitudes, directions and composition - is covered by the economic discipline of International Trade Theory. Marketing writing in the area of international trade has focused on marketing planning (Root, 1966), communication and cultural problems in international marketing (Hall, 1959; Zaltman, 1965), and multinational business practices (Farmer, 1966). But neither economics nor marketing offers us a formal method for developing export strategy for the individual marketer who wants to explore the possibilities for export. By strategy we mean the direction-finding activities like selecting the best product-markets, deciding on the best growth trajectory and the dynamics of these (Ansoff, 1965). True, these decisions are made by all the corporations which enter the export arena. But the decision is very often made on the basis of top management hunches or by the emulation of other successful exporters. Having taken the key decision on where to export and what to export, one may proceed to do a very sophisticated analysis in the areas of product

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planning, pricing, promotion and distribution (though in the underdeveloped countries, even this is not done to any degree of satisfaction). But in doing so the marketer restricts himself to the best he can do in a given product-market arena - he suboptimizes. We believe that a lot more is possible in terms of analysis in the area of export strategy formulation itself. We need methods which can not only tell us what the best product-market opportunities are for a marketer desirous of exporting, but can also give us some idea of what trajectory, over time, should the product-market mix of the marketer follow to remain optimal in a world where competitive profiles are in constant flux. The model presented here is designed to fulfil this need. It is so designed that it can use secondary data easily available to the (potential) export marketer in the underdeveloped countries who generally does not have access to sophisticated market research data. Before we go into the conceptual framework of the model, it will be appropriate to review briefly the relevant concepts of international trade theory used in this model.

2. Concepts of International Trade Theory

International trade theory is concerned with explaining the direction, amount and composition of trade between countries. Traditionally, comparative costs have been considered the basis of international trade. As originally formulated by Ricardo, the international trade model assumes the 'labour theory of value', which holds that there is only one productive factor of importance as far as the value of a commodity is concerned and that is labour. A more modern approach is the 'opportunity cost theory' of Haberler (1936). This theory maintains that the relative prices of different commodities are determined by cost differentials, the latter being determined by the cost of alternative production foregone to allow for the production of the commodity in question. The comparative cost approach has been operationalised in the so-called Heckshher-Ohlin model of the emergence of international trade (Hecksher, 1919; Ohlin, 1933). Heller sums up the essence of this model as follows:

> Given identical production functions but different factor endowments between countries, a country will tend to export the commodity which is relatively (to the other commodity) intensive in her relatively (to the other country) abundant factor (Heller, 1968).

On the bases of these theories, we would expect the exports of developed countries to be capital-intensive (e.g. sophisticated machinery, electronic equipment, industrial chemicals) and those of relatively underdeveloped countries to be labour-intensive (e.g. textiles, food products, handicrafts). However, empirical

support for the Heckscher-Ohlin model is a mixed one (Bhardwaj, 1962) and the reasons for this appear to be the following:

(a) When applied to the aggregate imports and exports of a country, the model may not be validated because some industries may be able to exploit factor advantages while others may be prevented from doing so by a variety of tariff and technology constraints.

(b) While the nature of factor endowments acts as a motivation for exporting certain products, the realisation of these exports depends on several non-traditional factors, especially those related to the availability of marketing and technological expertise.

(c) While the relative factor endowments may favour the export of a certain commodity from one country to another, the actual realisation of the export will depend on the size of the market in the target country. For example, United States and Switzerland may have very similar factor endowments relative to an underdeveloped country, but what the underdeveloped country can export to these countries will also depend on the size of the two markets.

In fact, an entirely different approach to international trade - the Walrasian approach - consists of explaining international trade in terms of demand equations using market size variables. These equations relate the aggregate demand in a certain country for the products of another country in terms of relative national products of the two countries, the relative prices of the goods in the two countries and the cost of transportation between the two countries. Certain quasi-Walrasian models have been developed which explain intercountry trade flows by using national incomes, populations and intercountry distances as the explanatory variables (Linneman, 1966; Tinbergen, 1962). In contrast to the comparative cost approach, these models do not treat factor prices as explicit variables - the factor advantages are implicit in the market size variables like national income and population.

3. Conceptual Basis for an Export Strategy Model

The models of international trade described are useful for explaining aggregate trade flows between countries. However, they do not help the individual marketer to determine the product-market combination optimal for him. The model we propose here is based on the premise that both comparative factor advantages and market size variables are important in determining an optimal export strategy. The concept of 'factor' is used in a broader sense to include managerial, marketing and technology differentials between countries because we believe that the traditional economic factors are inadequate by themselves. The conceptual basis of our model can be summed up by the following set of propositions.

Proposition 1: The best product-market mix for an export marketer is a function of the competitive advantage he can get for a product-market combination vis-a-vis the local marketers in the target country and of the export potential of the target market.

Proposition 2: The competitive advantage of exporter E for product P in market M is the ratio of the total cost to the typical marketer in country M of making that product offering in market M to the total cost to exporter E of making an exactly comparable product offering in market M.

Illustration: Consider three exporters - one each from Korea, Japan and the US - trying to export transistor radios to Canada. The competitive advantages of the three exporters are determined not only by the relative production costs, but also by the relative costs of technology and marketing to the three exporters. Thus, the Korean exporter may be able to use very low cost labour but to make a transistor radio of a quality comparable to that of the Japanese exporter may cost him a lot in terms of buying (or developing his own) technology. Again, the Korean and the Japanese exporter may have an edge (relative to the US exporter) in terms of labour costs but the marketing costs they would incur in placing a comparable transistor radio on the dealer's shelf in a store in Montreal may be relatively high.* It is important to note that to the consumer, two products offerings are comparable only and only when they represent similar products with similar prices and availability conditions and supported by similar advertising and promotional effort.

Proposition 3: The export potential of market M to exporter E is a function of the relative GNPs and populations of the two countries and of the distance between the two countries. To compute export potentials, we shall use the formula developed and empirically validated by Linneman for intercountry trade flows (Linneman, 1966):

$$X_{12} = \frac{a\, Y_1^{b1}\, Y_2^{b2}\, P^{c}_{12}}{N_1^{d1}\, N_2^{d2}\, D^{e}_{12}} \qquad \ldots\ldots\ldots (A)$$

*We are excluding the variations in marketing costs due to differential transportation costs because these are accounted for by the export potential factor.

where X_{12} = Trade flow from country 1 to country 2

Y = Gross national product in real terms

N = Population

D_{12} = Distance between country 1 and country 2

P_{12} = Trade preference factor for countries 1 & 2**

a, b_1, b_1, c, d_1, d_1, e are known constants.

Proposition 4: The relative importance of the competitive advantage and export potentital factors varies with types of products.

Illustration: "Export potential" factor is relatively important for those products which require a large volume to achieve proper scale economics (e.g. food products), or products which have a high transportation cost per unit (e.g. automobiles). On the other hand, "competitive advantage" is relatively important in situations where the usual size of the scale is one unit only to each customer - e.g. computer systems, power plants, etc.

We suggest that the relative weighting of the two factors be done judgementally by the exporter. We shall assume that the exporter wants to select this export product from a certain broad class of products such that the relative importance of 'competititve advantage' and 'export potentital' is constant across this class of products. This is a fair assumption because the individual exporter thinks in terms of a set of products which is bounded by his 'concept of his business'.

4. Structure of the Export Strategy Model

The model proposed here uses both factor cost-related and market size-related variables as inputs. The former set of variables includes

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** We shall exclude this factor from our model for two reasons:

1. In an a priori analysis of export strategy, we do not have any idea of which countries will finally emerge as the best markets for the exporter.
2. The preference patterns in the world are changing all the time and those in existence when Linneman made his analysis no longer hold today.

Instead, we suggest that after having obtained a set of best product-markets, the exporter can exercise his judgement as to eliminate or upgrade certain markets according to the prevailing state of trade preferences.

factor prices in various target countries and ranges of factor proportions (relative to unskilled labour-hour = 1) which the exporter wants to investigate. The latter set of variables includes GNPs, populations and distances of various target countries under consideration. The output of the model consists of best product-market combinations on the basis of competitive advantage as well as a ranking of target countries by their export potentials. Using this information, the export marketer can arrive at the best product-market combination that offers him both a high competitive advantage and a high export potential. As mentioned earlier, the concept of 'factor' used in this model is broader than the one used by economists. The following are the main reasons for this:

(a) The omnibus category of 'labour' does not give an accurate picture of the competitive advantages resulting from labour cost. The relative prices of skilled and unskilled labour are different in developed and underdeveloped countries. Generally speaking, skilled and technical labour - on a basis relative to the unskilled labour wage - is more expensive in underdeveloped countries than in developed countries. Also, the manufacturers in underdeveloped countries often have to train whole or part of their technical labour force abroad. The cost of training, properly apportioned, should be considered as an increment in the technical labour wage for the purposes of computing factor advantages. Thus, we see that differentials in labour costs influence competitive advantages of various products, depending on their technical labour-intensity.

(b) The cost of capital is also non-homogeneous in an underdeveloped country. The cost of capital required for high technology equipment, especially for equipment that has to be imported, is effectively higher than cost of other investment or working capital. This is so because of difficulties in obtaining foreign exchange, import duties on capital equipment, overall high prices often paid for foreign technology because of limited purchasing clout, etc. Thus, to make things comparable, the exporter in the underdeveloped country must impute a higher cost to the 'technology' component of his capital.

(c) Since we are talking of total product offerings (involving marketing effort) rather than mere physical products, we must consider marketing labour as a distinct factor. The export marketer in an underdeveloped country may often have to rely partially or wholly on a foreign-based marketing operation for marketing his product. This reduces the competitive edge of the marketer compared to what it would be if he used a domestic-based (and naturally cheaper) marketing operation.

Because of the foregoing reasons, the model proposed here uses five factors for the purposes of computing competitive advantage. These

are: unskilled labour, technical labour, and marketing labour; nontechnology capital and technology capital. The competitive advantage for any target country and any factor combination is calculated by using the formula:

$$C(j) = \frac{\sum_{i=1}^{n} p^T(i).f^T(i,j)}{\sum_{i=1}^{n} p^D(i).f^D(i,j)} \qquad \ldots\ldots\ldots(8)$$

where $C(j)$ = Competitive advantage for j^{th} factor combination

$p(i)$ = Price of i^{th} factor

$f(i,j)$ = Amount of i^{th} factor in the j^{th} combination (relative to unskilled labour = 1)

T = Superscript for target country

D = Superscript for domestic country

n = Number of factors

The assumption, of course, is that factor intensities for a product are the same in all countries. This is fairly true for most manufactured products, though it is a questionable assumption for most commodities and semi-processed goods. For the latter, there is often a good deal of factor substitution possible.

Now, we are ready to describe the step-wise procedure for developing an export marketing strategy, i.e. for determing the best product-market combination for a marketer who is considering export alternatives.

1. A list of target countries that the marketer wishes to consider is developed.

2. Ranges of factor levels to be considered are developed. For example, the marketer can decide he will not consider products involving less than .2 of technology-capital per unskilled labour-hour and also products involving more than .6 of technology-capital per unskilled labour-hour. Similarly, ranges for other factors are developed using unskilled labour-hour as the base. These estimations can best be done by a committee of industrial economists with inputs from corporate planning, marketing and production departments.

3. Factor prices of all the factors for all the countries are determined or estimated. For example, nontechnology capital in a certain underdeveloped country may have a price of 12% - the short term interest rate for industrial loans. However, for technology capital, the exporter may add an average of 4% to reflect the higher prices, import duties etc. that he has to pay for high technology equipment. In a like manner, marketing labour price should reflect the fact that a part or whole of the marketing operation may be foreign-based and technical labour prices should reflect the depreciation in the investment made in training (some or all) of technical personnel abroad, if such be the case.

4. The ranges of factor levels specified in step 2 are divided into small intervals. Picking up one value from each factor range yields one combination of factors and corresponds to one particular product. Competitive advantages for each factor combination for each target country are now computed using formula (B). Then, the best factor combinations, viz. those which yield the highest values of the competitive advantage measure are picked up. These factor combinations represent the best products for export and the target countries associated with them represent the best markets from a competitive advantage point of view. This step would normally involve several thousands of computations and requires the use of a computer simulation routine that 'searches' the entire grid of factor combinations to determine the best competitive advantage values.

5. Next, the export potentital of each target country is determined by calculating the trade flow measure when trade is assumed to occur from the exporter's homecountry to the target country. This is done by using the trade flow equation (A). The target countries are then ranked in the order of decreasing export potentitals.

6. The outputs of steps 4 and 5 are now presented to a committee in charge of corporate strategy development. This committee uses the output of step 4 as the basis and modifies the rankings of the product-markets in this list, depending on whether or not the target countries ranked best on a competitive advantage basis also offer sufficient export potential (output of step 5). Thus a revised and final list of best product-markets - reflecting both competitive advantage and export potential adequacy - is drawn up.

7. The committee of industrial economists, which established the factor ranges, is now asked to interpret the factor combinations in the final list and define the closest products these factor combinations correspond to. Based on these interpretations, the chief executive and the strategy committee can now select the one or more best product-market combinations to which export effort should be directed.

5. Some Results of the Strategy Model

To test the workings of the model, a hypothetical data bank was used. The data roughly correspond to a situation in which a manufacturer in a very populous underdeveloped country is investigating product-market options for export. Of the five target countries he is considering, four are relatively developed countries and one is a relatively less developed but also less populous country. Table-1A shows the input parameters for these countries - populations, real national products, distance from the exporter's country, and factor prices for various factors. Table-1B shows the factor-ranges that the exporter wishes to consider. For example, he wishes to consider products involving from .005 to .035 hours of marketing labour per hour of unskilled production labour. This table also shows the number of intervals in each factor range at which competitive measure is to be computed.

Table-1A: Country-wise input data:

Country No.	Pop. (mil.)	GNP ($bil.)	Dist. (000 mi.)	Costs of factors: labor ($/hr)	Cap. (%)	Tech. cap. (%)	Tech. labor ($/hr)	Mkt.labor ($/hr.)
1*	550	55	0.0	0.15	.12	.15	0.7	1.3
2	120	250	9.0	1.00	.075	.08	3.0	3.3
3	60	140	9.5	1.80	0.080	.09	3.7	4.2
4	50	150	10.5	2.20	.070	.08	4.0	4.5
5	210	1100	14.0	3.00	.060	.06	5.0	7.0
6	30	15	6.0	0.20	.100	.15	1.0	1.5

*exporter's country

Table-1B: Factor-ranges considered*

Factor	Unit-measure	Range: From	To	No. of intervals
Labour	hour	1.0	1.0	0
Capital	dollar	3.0	6.0	10
Technology capital	dollar	2.0	5.0	10
Technical labour	hour	0.02	0.06	10
Marketing labour	hour	0.005	0.035	10

*All figures on the basis of one hour of unskilled labour.

The outputs of the simulations using the data of Tables-1A and 1B are shown in Tables-2A and 2B. Table-2A shows four best product-markets on the basis of competitive advantage, i.e. these are the product-market combinations which yielded the four highest values of the competitive advantage measure. The results lend themselves to some very important interpretations. Firstly, all four product-market combinations feature country no.5 - the most developed country in the list considered, both in terms of total income and per capita income - as the best target market. Secondly, the factor combinations indicate products which have minimal capital intensities but which make generous use of technical and marketing labour. This has important implications for several underdeveloped countries which are capital-starved but which have an increasing number of technically and managerially trained personnel available. Such countries can very profitably export skill-intensive products (e.g. computer software, electronic equipment, batch-processed laboratory chemicals) to developed countries.

Table-2A: Best Product-markets by Competitive Advantage

Country	Factor Proportions				
	Labour	Capital	Tech. Cap.	Tech.Lab.	Marketing Lab.
5	1.0	3.0	2.0	.06	.035
5	1.0	3.0	2.0	.06	.032
5	1.0	3.0	2.0	.056	.035
5	1.0	3.0	2.0	.06	.029

Table 2B shows the rankings of all the target countries by their export potential as computed by formula (A). Once again we see that the more developed countries offer considerably more export potential than lesser developed countries. For instance, country no.5 which offered the best competitive advantage for certain kinds of products also offers the best export potential. The implication for the exporter is that his marketing effort will have greater payoff and lesser disruptive effects in a developed country like country 5 than,say, in a less developed country like country 6.

Table-2B: Rankings of target countries by export potentials

Rank	Country No.	Export potential measure
1	5	1.29
2	2	.57
3	4	.37
4	3	.37
5	6	.09

6. Summary and Appraisal of the Model

We have tried to present a systematic approach which can be used by a potential exporter to determine the best product-market combination for the purposes of export. We believe that this approach would be

especially useful to underdeveloped countries which lay considerable emphasis on exports but usually fail to carve out any significant niches in the competitive world markets. The approach presented here attempts to select optimal product-market combinations based on two criteria. First, the product-market selected should offer a distinctive competitive advantage to the exporter in terms of significantly lower comparative costs. To make comparative costs more realistic, we suggest the inclusion and explicit treatment of two non-traditional factors which go into the making of a total product offering - technology and marketing. The second criterion for selecting an optimal product-market is the 'export potential' of the target market. The selected product-market should offer a significant export potentital (which we define in terms of certain market-size variables) otherwise the exporter would not be able to achieve an economic volume of exports without triggering off dangerous competitive and protectionist reactionist reaction from the target country. The approach presented in this paper is based upon the ability of the exporter to make a very fine interpretation of factor intensities. The output of the model is in terms of factor combinations which have to be translated in terms of actual product offerings. We feel that this task should not prove beyond the capabilities of experienced industrial engineers and economists. Comparative industry studies could be a big help in interpreting factor combinations as product offerings. A rather strong assumption of the model is the constancy of factor intensities across countries. While we believe this to be true for most manufactured products today, we also feel that in the not-too-distant future many underdeveloped countries will begin to evolve indigenous technologies quite different from their capital-abudant counterparts in the developed world. So long as we can assume a <u>systematic</u> variation in factor intensities (e.g. <u>all</u> products manufactured in Indonesia will be 10% more labour-intensive than <u>all</u> corresponding products manufactured in developed countries), our model can be easily modified to handle the situation. In case we cannot assume such systematic variations in technologies, we have to fall back on judgemental methods where the potential exporter has to make a case-by-case analysis of a handful of product-market combinations he feels are the best.

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