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PRICE AND SCALE OBSTACLES TO EXPORT EXPANSION IN LDC'S

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Discussion Paper Series

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I

The Context

Industrial exporting has become a central concern of development policy in a number of LDC'S, principally the "semi-industrialized" ones, as a forced result of their growth paths. These semi-industrialized countries a decade ago typically chose industrial growth as the path to higher per capita income, more employment and better distribution of income and wealth. Policies of various sorts but mostly involving protection and tax exemptions were successful by and large in making industry the leading sector, with a growth rate above that of GNP. At the same time, industry has been in almost all these countries a foreign exchange using activity in the sense of requiring some imported inputs into the production process. As a result, as industrial growth proceeded, the import bill required to maintain industrial output grew. On the other hand, foreign exchange producing sectors have typically been the primary ones whose growth rate was in most cases below that of industry. In consequence, the increase in demand for foreign exchange arising out of fast industrial growth put pressures on the slower growing supplies of foreign exchange from primary activities.

\* The original version of this paper was presented to the 7th Rehovot Conference, "Economic Growth in Developing Countries--Material and Human Resources," held at Rehovot Sept. 5-11, 1973. An abbreviated version is included in the Conference Proceedings (N.Y. 1975: Praeger Special Studies in International Economics and Development).

These inherently different rates of growth would have imposed an early slowdown of industry's rate of growth had it not been possible to free foreign exchange from existing uses through the same industrial import substitution on which the industrial growth rate itself was based. Such import substitution behind ever-increasing protective barriers managed for some time to bring into balance the disparate rates of growth of production and use of foreign exchange.

In the early seventies, the process of import substitution is virtually exhausted for the large semi-industrialized LDC economies and will very soon be for the medium and small ones. At this point a continued high rate of growth of industry is only possible if either (a) increased foreign exchange is forthcoming from the primary industries, (b) new sources and ways of import substituting are devised, or (c) industry becomes a foreign exchange generator, not only a foreign exchange user. It is tempting to add foreign aid and foreign private investment to this list of options; however, this would not be strictly correct.

Foreign aid by itself is likely to delay the reduction in the industrial rate of growth for some time; however, for repayment to eventually take place, a very large contraction of industrial activity would be required to free the foreign exchange from other uses. Only if the public foreign debt arising from aid were to increase continuously at a compound rate of growth, a situation

unlikely to be tolerated by either aid givers or receivers, could repayment be postponed forever. Foreign private investment is on balance only slightly more helpful. If it is in new industrial products, it will be foreign exchange using; indeed, it is likely to be even more import intensive than most existing industry.<sup>1/</sup> Only if foreign private investment directs itself to the export oriented industries will it contribute in some measure to alleviate the situation.

The exporting of industrial products is thus one of the main policy options open to LDC's who wish to continue industrializing at a rapid pace. Yet industrial exporting requires among other things a competitive price (for given quality) and a sufficient volume to justify developing foreign markets. These necessary conditions appear hard to meet: LDC's are typically regarded as high cost producers of industrial goods and most of them have markets and production volumes that are small relative to their potential markets in developed countries.

The following section will analyze the causes of uncompetitiveness of industrial production and section III will discuss the determinants of potential export supply. Section IV will suggest policy alternatives for price competitiveness whereas Section V will suggest a supply policy, and the final section will summarize the analysis and recommendations.

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<sup>1/</sup> For a discussion of the effect of changes in the composition of demand, cf. Felix (1968).

II

The Uncompetitiveness of Industrial Exports

The uncompetitiveness of industrial exports is not an immutable fact of life, but very substantially the result of the particular industrialization policy followed in the past. The growth of industry was fostered by a set of import restrictions which cumulated over time and eventually led to an exchange rate structure which is systematically biased against industrial exports and makes these unprofitable. Whereas the usual discussion focuses on "the" exchange rate, the amount of units of local currency which must be given up to obtain one dollar for purposes of financial transactions is best called the financial exchange rate. From the point of view of its impact on the economy, however, the financial exchange rate must be analyzed together with the trade taxation and other trade restrictions in force. Indeed, it is useful to think of an "exchange rate system" composed of the financial exchange rate and a large number of "commodity exchange rates" which are the multiple exchange rate equivalents of the existing taxes and other restrictions on commodity trade. Each commodity rate is defined as the number of units of domestic currency for which a dollar's worth of imports at CIF prices (or exports at FOB prices) of each particular commodity sells for on the international market. Each commodity rate is equal to the financial rate plus all the

trade taxation and restrictions assessed on the import or export of that particular commodity. In general, there will be as many commodity rates as the economy has commodities tradeable internationally and often a single commodity may have more than one rate. <sup>1/</sup>

In Latin America as well as elsewhere, most countries operate with a set of import restrictions which raise the commodity exchange rate for imports substantially above the financial rate. On the export side, some countries have operated at times with an export tax on traditional export commodities which has reduced the commodity rate for traditional exports below the financial exchange rate. A good example is Argentina, which was operating in 1966 with approximately the following exchange rate system. <sup>2/</sup>

<u>RATE</u>	<u>COMPOSITION</u>	<u>PESOS PER \$</u>
Agricultural Export	= Financial less 10% tax	= 200
Financial	= Financial	= 220
Non-traditional Export	= Financial + 18% tax rebate	= 260
Raw Material Export	= Financial + 50% duties	= 330
Semi-manufactures Import	= Financial + 120% duty	= 460
Components Import	= Financial + 175% duty	= 600
Finished Products Import	= Financial + 220% duty	= 700

A quick inspection of this rate structure will show why industry fails to generate foreign exchange. Industry buys its raw material at an exchange rate of 330 pesos per dollar, its imported semi-manufactures at 460 and its components at 600. This implies an

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<sup>1/</sup> The most general case arises when the same commodity has different import rates; preferential import and export regimes differentiate rates even further.

<sup>2/</sup> Taken from CARTTA 1966.



average cost exchange rate for imported inputs of approximately 400 pesos per dollar. Domestic inputs have implicit exchange rates only slightly lower since most domestic producers do not sell at prices much below those of similar imports. Thus, industry's cost exchange rate for all material inputs is roughly between 380 and 420 pesos per dollar. At the same time, the wage rate industry pays reflects the average industrial exchange rate about 600 pesos per dollar. <sup>1/</sup> Hence total industrial costs are based on an exchange rate averaging 450 to 500 pesos per dollar. At the same time, a dollar's worth of exports yields only 260 pesos per dollar. The would-be industrial export producer thus faces an implicit tax levied through the exchange rate system of close to 50%. The implications of this situation for the profit rate on exports are rather dramatic.

The Argentinian exchange rate structure is not untypical for semi-industrialized countries as can be seen from Table 1 which presents for each industry in three other Latin American countries the factor remunerations payable on the basis of export business as a proportion of remunerations currently being paid on the basis of sales to the domestic market.

An additional and very important effect of the exchange rate structure is what may be called the "inefficiency illusion" of

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<sup>1/</sup>  $w = \text{Marginal physical product (MPP)} \times \text{prices of output}$ . If the unit of output is set at an amount costing \$1 CIF, then we have  $w = \text{marginal physical product} \times \text{average commodity exchange rate for output}$ .

Table 1

The Anti-Export Bias of the Exchange Rate System  
In Selected Semi-Industrialized Countries

Percentage of actual factor remuneration  
payable on the basis of export sales

<u>Industry</u>	<u>Brazil</u> <u>1967</u>	<u>Chile</u> <u>1961</u>	<u>Mexico</u> <u>1960</u>
Non-Metallic Mineral Products	.64	NVA	1.06
Metallurgy	.68	NVA	.49
Machinery	.71	.03	.57
Electrical Equipment	.36	.11	.71
Transport Equipment	.46	.15	.57**
Wood Products	.78	.30	.75
Furniture	.32	NVA	----
Paper and Products	.54	.21	.38
Rubber Products	.41	NVA	.53
Leather Products	.43	NVA	.61
Chemicals	.66	NVA	.5
Pharmaceuticals	.66	----	.65
Perfumes and Soaps	NVA	----	.56-.77
Plastics	.49	.34	----
Textiles	.68	NVA	.79*
Clothing	.34	NVA	.83
Food Products	.66	NVA	.59
Beverages	.14	NVA	.55
Tobacco	.40	.04	.53
Printing and Publishing	.52	.31	.77
Metal Products	----	.28	.48
Fertilizers and Insecticides	----	----	.77

NVA = negative value added. i.e.: the cost of inputs exceeds the receipts from exports, hence no payments to factors are feasible.

\* Cotton textiles

\*\* Railroad equipment; motor vehicles have NVA

SOURCES

Bergsman, J. and Pedro S. Malan, "The Structure of Protection in Brazil" Table 6.6

Jeaneret, T., "The Structure of Protection in Chile" Table 7.8

Bueno, G., "The Structure of Protection in Mexico", Table 8.7

Balassa, B. et al, The Structure of Protection in Developing Countries, Johns Hopkins Press 1971.

LDC's in industry. It is generally "known" that most LDC industry is inefficient and uncompetitive. This "fact" is easily demonstrated by translating domestic industrial costs into dollars, which turn out to be substantially above the price of comparable imports. This computation uses the financial exchange rate. Since we know that domestic costs are based on the commodity exchange rates and that these are usually considerably above the financial exchange rate, it should not surprise us very much to find that domestic costs will be higher than international prices when converted at an exchange rate lower than the one on which they are based. This phenomenon, in the absence of the obvious explanation, has produced the inefficiency illusion effect and given LDC governments and public the impression that they have industrial structures totally out of kilter and hopelessly inefficient. The fact of the matter is, however, that much of the inefficiency is merely the result of an improper comparison by the use of an exchange rate that is not applicable to the respective costs. When domestic costs are deflated by an appropriate exchange rate, i.e., one that is related to the commodity exchange rates, it turns out that LDC industry is substantially more efficient than generally believed. Table 2 gives an indication of the size of the inefficiency illusion in Argentina by converting domestic production costs into dollars with an exchange rate reflecting the cost exchange rate for each industry.

Table 2

The "Inefficiency Illusion in Argentina"

SECTOR	EXCESS OF COST OVER AT CURRENT EX- CHANGE RATE	IMPORT PRICE AT INDUSTRIAL COST EXCH. RATE
01 Agriculture	-10	-1
11 Coal Mining	30	1
12 Metallic Mineral Mining	51	4
13 Oil & Natural Gas Mining	33	5
14 Stones, Clay and Sank Mining	-0	-2
19 Non-metallic Mineral Mining	28	4
20 Food Products	5	5
21 Beverages	50	25
22 Tobacco	53	25
23 Textiles	65	17
24 Shoes and Clothing	62	8
25 Wood & Cork	48	15
26 Furniture	40	8
27 Paper & Paper Products	62	15
28 Printing & Publishing	12	-1
29 Leather & Leather Products	6	0
30 Rubber Products	110	38
31 Chemicals	68	23
32 Petrochemicals	46	10
33 Non-metallic Mineral Products	35	8
34 Basic Metal Industries	60	19
35 Metal Products	75	24
36 Non-electric Machinery	86	14
37 Electrical Machinery	99	38
38 Transport Equipment	109	28
39 Various Manufacturing	64	21

The inefficiency illusion and the anti-export bias in the exchange rate system have interacted to the mutual reinforcement of both and the hindrance of a change in policy. The inefficiency illusion reinforces the belief of policy makers that industry is not efficient enough to export. The anti-export bias in the exchange rate structure makes exports impossible. The resultant lack of exports confirms the policy makers' view that industry is unable to export. In view of the obvious scarcity of foreign exchange, however, the impossibility for industry to export means that additional import substitution must be undertaken. This in turn implies higher import restrictions which cause an increase in the inefficiency illusion. As a result, the policy makers become even more convinced of the inefficiency of industry and its inability to export and at the same time the higher import restrictions increase the anti-export bias thus making it ever less likely that industry will become competitive and foreign exchange-generating.

II

The Limited Potential Supply of Exports

In the transition phase into an industrial export economy, and often well into that stage, export supply is the residual production available after domestic demand has been satisfied. In turn, domestic demand depends on the country's level of income and the respective income and price elasticities; volume of output depends on factor availabilities and their rates of utilization.

This last factor is crucial. The well known existence of unemployed labor with the attendant excess of the wage rate over the social cost of labor (shadow wage rate) implies the existence of a potential output not expressed in the market supply curve. In addition, and more important, perhaps, evidence is accumulating that capital is underutilized as well, working only one or one-and-a half shifts on the average. Were supply calculated on a three shift use of capital, it might well be two to three times larger!

The single shift use of capital in LDC's, capital scarce and labor rich countries, presents a paradox: private profit maximizers appear to find it preferable to operate three plants at one shift, while from society's point of view it would appear preferable to operate one plant at three shifts, thus economizing

on the scarcer resource, capital, and using labor extensively. The resolution is at hand, however, if it is borne in mind that the private sector makes its decisions at market prices whereas the public sector evaluates these private decisions at "social" or "shadow" prices. If market and shadow prices are sufficiently different, it is perfectly possible for the decision at private prices to lead to the installation of several factories all of which will be operated at one shift while the same decision when evaluated at shadow prices would lead to the installation of a single factory to be operated on a multiple-shift basis. <sup>1/</sup>

The systematic distortions between private and shadow prices existing in most semi-industrialized economies are consistent with this hypothesis: <sup>2/</sup>

a) The price of output: Under the existing exchange rate system only the marginal revenue in the domestic market is relevant from the private point of view. From society's point of view the output is worth (potentially) the foreign exchange it would earn if exported multiplied by the shadow price of foreign exchange. This value is without exception a multiple of the privately perceived marginal revenue. On this count one would expect output to be too low.

b) The price of capital goods: Most LDC tariff structures and industrial promotion laws provide for the duty-free import of

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<sup>1/</sup> Note, however, that the shifting decision may result from a more complex optimization process than pure profit maximization. For a discussion see Schydrowsky 1973b.

<sup>2/</sup> For a formal exploration, see Schydrowsky 1973a.

capital goods. Such a procedure implies charging the private buyer of these capital goods too little both for the scarce foreign exchange which he is using and for the scarce investment funds that he is allocating. On this count, one would expect the operation to be overly capital intensive.

c) Market wage rate: In most LDC economies, the wage rate in the industrial sector is set by a combination of institutional processes involving government wage setting and unions. In all cases, the result is substantially above the social marginal cost of labor, i.e., labor's shadow price. On this account, private decisions would tend towards underutilizing labor in their operations. The impact of the wage rate goes further, however; many times the legislation requires overtime pay for night labor which distorts the market wage from its shadow price even further. <sup>1/</sup> Finally, social security legislation and other fringe benefits, <sup>2/</sup> severance pay, and firing regulations <sup>3/</sup> may increase the cost of employing labor beyond its take-home pay and further widen the differential between the market cost of labor and its social cost.

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<sup>1/</sup> Note that the premium for night labor may be exactly "right"; i.e. may accurately reflect the social disutility of night work. Nonetheless, night pay may exceed the night shadow wage (just as the day wage exceeds its shadow wage).

<sup>2/</sup> The magnitude of the fringe benefits in Latin American economies at least, is considerable. Ferrero (1957) found them to be 45% of wages in Peru, while Gregory (1967) found them to be about 100% of on-the-job earnings in Chile.

<sup>3/</sup> For a discussion of labor force hiring as a fixed investment, Cf. Vernon (1970).



d) Credit structure: In most LDC economies, credit to finance installation of fixed capital is available on considerably easier terms and in larger quantities than is credit for working capital. Yet it is precisely the latter which is necessary for multiple shift working of plant since inventories of goods in process as a ratio of total capital investment increases substantially in these plants. As a result once again, the private production decision is biased towards excess fixed capital intensity.

e) Tax structure: In most LDC tax legislations, the depreciation deductible from profits for corporate income tax purposes is based on the number of years of life of the equipment, with no allowance made for the intensity of use. As a result, second and third shift originated profits are taxed at an effectively higher corporate income tax rate than are first shift profits. This progressive corporate income tax by level of utilization of course is a disincentive for private decision makers to install capital intensive multiple shifting operations.

f) Unavailability of skilled and supervisory personnel: Skilled and supervisory labor are inputs complementary to capital, unskilled labor and foreign exchange. The total unavailability of labor could therefore prevent any production from taking place. The extreme case of such unavailability arises in the family firm wherein the management is fully concentrated in the owner himself who, of

course, cannot work twenty-four hours a day. In larger firms, with hired management, the availability problem becomes a cost problem. With this type of labor very scarce, it is obvious that its price will be high, both in the market place and in terms of its shadow wage. It is likely, however, that the market wage will be above the shadow wage even in this case, since the private supply price of nighttime labor is in part at least a function of the lack of nighttime amenities such as transportation, security etc.etc. If the social context is reorganized to include as a matter of course triple shifting everywhere in the economy, these nighttime services would be available in a volume similar to the daytime level. As a consequence, the nighttime private supply price would fall. Thus through the interdependence of social arrangements, the shadow price of nighttime supervisory labor may well be below the market price. <sup>1/</sup>

The limited empirical work done on this topic so far <sup>2/</sup> has not reached the stage of assigning relative degrees of importance to these elements. <sup>3/</sup>

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<sup>1/</sup> I owe this point to Dr. Stephen Guisinger.

<sup>2/</sup> Principally Winston (1971) on Pakistan, Thoumi (1972) on Colombia and the preliminary results of a research project coordinated by Boston University's Center for Latin American Development Studies and covering Venezuela, Colombia, Peru, and Chile.

<sup>3/</sup> For an attempt to qualify the impact of credit market imperfections on capital utilization in Peru see Schydrowsky 1972.

IV

Policy Alternatives for Price Competitions

The achievement of price competitiveness requires a modification in the exchange rate system. Two techniques are available for this:

(a) compensated devaluation, and, (b) export subsidies.

A compensated devaluation is one in which simultaneous and offsetting adjustments are undertaken in the financial exchange rate and in the trade restrictions such that all the commodity exchange rates for imports and traditional exports stay unchanged, the only net change taking place in the financial rate and in the nontraditional export rate. As a result, nontraditional exports obtain the equivalent of a subsidy. <sup>1/</sup> An example can be given with the Argentinian exchange rate system cited before (CARTTA 1966).

<u>Pre-Compensated Devaluation</u>				<u>Post-Compensated Devaluation</u>		
<u>Total</u>	<u>Tax/Subsidy</u>	<u>Basic</u>	<u>Rate</u>	<u>Basic</u>	<u>Tax/Subsidy</u>	<u>Total</u>
200	-10%	220	Agricultural Exports	330	-40%	200
220	0	220	Financial	330	0	330
260	+18%	220	Non-traditional Exports	330	+18%	390
330	+50%	220	Raw Material Imports	330	0	330
460	+120%	220	Semi-Manufactured Imports	330	+47%	460
600	+175%	220	Component Imports	330	+80%	600
700	+220%	220	Finished Product Imports	330	+115%	700

<sup>1/</sup> For a more formal treatment see Schydlosky (1967).

Inspection will show that with a compensated devaluation, the exchange rate for nontraditional exports has risen by 50%, being much closer now to the industrial cost rates, and, indeed exceeding the raw material import rate.

An export subsidy achieves the same result by directly affecting the commodity exchange rate for nontraditional exports and therefore eliminating the preexisting bias. If the export subsidy is given across the board as a fixed percentage of the FOB value of exports, its administration is extremely simple. <sup>1/</sup>

The main objection to export subsidies from "practical people" arises from its alleged fiscal cost. It is argued that such subsidies, if successful, imply substantial disbursements from the treasury which, under the stringent fiscal conditions in LDC's, are better used elsewhere. This objection is not generally valid, however. If the subsidy program is indeed successful and exports take place under it, additional economic activity would result which in itself and through the foreign trade multiplier would generate a substantial increase in the tax base. This increase in the base would, in turn, generate additional revenue for the exchequer. This new revenue would then serve to cover in part or in whole the subsidy necessary to generate the exports in the first place. Thus through a combined foreign trade and fiscal multiplier, export subsidies generate their own (partial or total) financing. Under the conditions of countries

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<sup>1/</sup> The Colombian CAT (Certificado de Abono Tributario) is a case in point.

which have import substituted heavily, the marginal import propensities are rather low, hence foreign trade tax multipliers tend to be high and fairly large export subsidies can be supported by the revenue generated in this form, particularly if they are paid only to new exports. In essence, such a view of the fiscal impact of export subsidization implies the use of a full capacity utilization budget. This full capacity utilization budget is analogous to the full employment budget introduced recently in the United States. The difference is that in the United States version an expenditure by government or a reduction of revenue will generate domestic activity and additional domestic employment which will in turn then finance the change in the fiscal situation. In semi-industrialized LDC's, it is the expenditure of public funds for the creation of exports that generates a higher level of economic activity and therefore an increase in revenue. A simple macroeconomic model can be used to calculate the full utilization budget and specifically the maximal subsidy payable without net fiscal costs to the exchequer. <sup>1/</sup>

If a compensated evaluation and an export subsidy yielding precisely the same commodity exchange rates were compared, the following would emerge:

(1) Under compensated devaluation, the financial exchange rate has been raised whereas this does not take place under a subsidy

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<sup>1/</sup> For details of such a model including period analysis, sectoral disaggregation and sensitivity analysis of the parameters, Cf. Schydrowsky (1971).

program. This modification implies a net loss (gain) in wealth for all individuals and firms in the domestic economy with net foreign liabilities (assets). Also implied is a reduction in the expected profitability of foreign private investors. <sup>1/</sup>

(2) The fiscal impact of the new exports will be identical under both systems. However, the shift in tax base under the compensated devaluation is likely to produce an increase in revenue if the balance of trade was initially in surplus and a decrease in revenue if it was initially in deficit.

In most real world cases, the adoption of a compensated devaluation would produce a somewhat different structure of exchange rates than would result from the adoption of an export subsidy program. The main difference would arise from the impossibility of fully compensating the devaluation on the import side since some tariffs will initially have been below the level of the desired export subsidy equivalent for nontraditional exports. As a result, some increase in import commodity exchange rates will take place, albeit at the lower end of the spectrum. As a result, compensated devaluation will have a slightly higher tax yield, and a small increase in prices as well as perhaps a slightly weaker net export

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<sup>1/</sup> New foreign investors will find offsetting effects: (a) their dollar capital expenditure goes down in so far as they purchase non-traded goods and domestic labor; and (b) the dollar repatriation value of their profit stream will be reduced proportionately to the devaluation. Unless the capital expenditure is totally in local currency, the result will be reduced profitability for a given size operation. Foreign investors may, however, find ample compensation from the higher growth rate attendant upon a successful compensated devaluation. For a discussion of devaluation as perceived by the foreign investor see Vernon 1968, pp.54ff.

incentive, if the nontraditional exports are heavy users of the commodities whose import exchange rate has been raised.

In choosing between these two alternative policies, consideration must additionally be given to some factors that, though not fundamentally economic in nature, are nonetheless very important. These are the following:

(1) effect on the inefficiency illusion in industry: Compensated devaluation, through its modification of the financial exchange rate, affects the inefficiency illusion, reducing it proportionately to the change in that financial exchange rate. The export subsidy program has no effect whatsoever on the inefficiency illusion.

(2) the national commitments regarding export subsidies: Under GATT rules, an explicit subsidy may well be illegal whereas a compensated devaluation falls outside GATT rules and into the IMF rules under which it is perfectly acceptable; indeed it is regarded as liberalization and therefore "good". This difference is less definitive than it might seem, however, since tax refunds have repeatedly been accepted by the GATT and it is very hard to distinguish in practice between the tax refund and an explicit export subsidy.

(3) the apparent distribution of the tax burden: Under compensated devaluation, traditional exporters seem to be paying a substantial export tax. As a result, charges of discriminating against the goose that produces the golden foreign exchange may well

appear a giveaway program to industrialists and the charge will be levied that the high income groups are milking the tax system.

Finally, the question of the impact on economic efficiency of these policies must be considered. There are two fundamental senses in which either of these policies would substantially enhance the economic efficiency of the semi-industrial, non-industrial exporting economy in which they were applied:

(a) In changing the nature of industry from foreign exchange-using to foreign exchange-generating, the major cause of recurrent balance of payment crises and the fundamental structural reason for a foreign constraint on growth would be removed. The new more export orientated path will entail a higher rate of growth thus documenting the greater efficiency of the new policy framework.

(b) In making industry foreign exchange-generating, the macro-economic basis is laid for using idle domestic labor and capital. As long as production requires complementary imported inputs, an increase in the number of shifts worked with the consequent increase in output and employment is only possible if the foreign exchange to pay for those inputs can be earned. In turn this is possible if some of the industrial output can be exported. Thus an export promotion policy will raise efficiency through raising the rate of utilization of existing factors of production.

There is one type of inefficiency which the two suggested policies do little to affect. To the extent that economic sectors differ in their real economic productivity as measured say by their



domestic resource cost of foreign exchange, allocation is less than optimal. Our export price competitiveness policies make no direct contribution to narrowing such differentials. However through removing the foreign exchange bottleneck and raising the rate of growth, they are likely to make it easier to adopt other policies designed to cope with this kind of allocative inefficiency.

Elements of an Export Supply Policy

A quantum jump in the scale of potential export supply is dependent upon the utilization of existing installed capacity. At the macroeconomic level, a necessary condition for such utilization to be feasible is that the complementary inputs into the production process, principally imports be available. At the microeconomic level, a necessary condition for capacity utilization is profitability. It should be borne in mind, however, that commercial profitability may not be a sufficient condition for capacity to be utilized. Thus, the elimination of any non-price restrictions on multiple shifting will need to be undertaken as well.

In the short run, if marginal revenue from sales is high enough, the unprofitability of utilization of capital can be overcome. For this time frame, a sufficiently high compensated devaluation or a sufficiently high export subsidy would be enough. In the long run, however, unless multiple shifting is also more profitable than multiple plant operation, the additional shifts will be replaced by additional plants and single shifting will again become the rule. Hence, although profitability of multiple shifting must be assured, it is necessary, in addition, to act upon the relative profitability of multiple shifting and multiple plant operation.

Four different policy areas can be assembled to form a coherent policy to provide incentive for the practice of multiple shifting:

(a) Wage Policy:

The gap between second and third shift market wages and the marginal social cost of labor must be lowered. This implies suspension (if not elimination) of shifting-premia, fringe benefits on the second and third shifts, social security contributions, tenure rules, etc. Given the likely opposition to such an "assault" on acquired privileges of workers, it may be necessary to implement such a reform by means of an "employment generation law" which exempts firms from the requirements of normal labor legislation on their second and third shift labor for a limited but lengthy period of time. In addition, it is also possible to shift the cost of some of the fringe benefits and social security taxes from employers to the government budget.

(b) Capital Goods Pricing Policy:

The price of capital goods can be affected very easily through an increase in the import tariffs of these items. Such a policy change would bring the ratio of the price of capital goods to labor closer to the ratio of the respective shadow prices, and in this way correct the relative profitabilities of multiple shifting and multiple plant operations appropriately. It should be noted, however, that an increase in tariffs on capital goods is likely to

cause a reduction in real private fixed investment, partly as a result of substitution effects and partly as a result of the government's use of at least part of money thus collected for consumption purposes.

(c) Tax Policy:

One policy measure should involve the automatic incorporation of the number of shifts worked in the calculation of the depreciation deductible for tax purposes. A second important step concerns the tax incentives for reinvestment. These now typically require documentation of the acquisition of fixed assets. Multiple shifting should be regarded as the equivalent to expansion and thus should benefit from precisely the same tax benefits. Investment in capacity utilization should be regarded as equivalent to investment in capacity expansion.

(d) Credit Policy:

A special lending program for the working capital necessary for full utilization would provide a substantial anti-distorting measure in the capital market. Such lending for investment in capacity utilization should be at the same preferential rates as are usual for loans for capacity expansion. One possibility is a program of pre-export finance which could provide the needed working capital while tying the capacity utilization program very closely to the export promotion policy.

VI

Summary and Conclusions

To sell in the international market an LDC must, among other things, be competitive in price (for a given quality) and it must be able to supply a quantity of sufficient size to justify the marketing costs. For products other than the traditional exports, these necessary conditions appear hard to meet: LDC's are typically regarded as high cost producers of industrial goods and most of them have markets (and production volumes) that are small relative to their potential markets in developed countries.

High costs of production are fundamentally the result of the import substituting origin of industrial production and reflect the original LDC comparative advantage in primary production. The use of import tariffs has signified selective devaluation to favor industry producing for the home market. Successive backward integration of the industrial structure has progressively incorporated these higher exchange rates into the domestic cost structure. Sellers for export are now taxed by an implicit devaluation which has raised the prices of their inputs without a corresponding exchange rate adjustment on their output. Their costs translated to foreign exchange therefore appear high. When proper adjustment for the disparity in cost and sales exchange rates are made it appears that the high cost of industry is in a large part an inefficiency illusion.

A successful export policy must include the untaxing of export production by bringing the export exchange rate into line with the industrial cost exchange rate. Either a compensated devaluation in which the exchange rate and the import duties are adjusted concurrently in offsetting manner or a system of tax rebates for export would accomplish this purpose.

The volume of potential supply for export is usually found to be quite limited since it is the excess of output at full capacity over the domestic LDC offtake. In other than recession times, this volume cannot be expected to be more than, say, 20% of the exporting LDC's own market. Such a view neglects to consider that full capacity output itself is a price determined variable: at one set of price full capacity may be one shift operation and at another set of prices full capacity may signify three shifts of operation.

Evidence is accumulating that LDC's typically and sustainedly operate on a low shift definition of full capacity. Such a situation is consistent with distortions in their market prices and tax and credit systems which favor the use of capital intensive techniques of production. In addition non-price restrictions and the characteristics of the maximization process also cause under-utilization. At shadow prices, the definition of full capacity changes upwards and a considerably higher volume of potential export supply becomes available.

A sound utilization policy would move concurrently on factor costs, output price, tax structure and credit availability to bring

the market incentive for multiple shifting into line with social desirability.

Exports and utilization of capacity are closely connected. On the one hand utilization provides export supply, on the other utilization requires complementary imported inputs, hence exports to pay for them. Furthermore, the cost of production from newly activated capacity conditions the export price. Utilization policy must therefore be closely coordinated with export policy to produce a coherent and fully effective policy comprising a rise in the export exchange rate, a reduction in the cost of higher shift labor, a rise in the cost of capital goods, a direct tie of tax depreciation rates to the number of shifts worked and the provision of working capital on favorable terms.

REFERENCES

- Balassa, B. and Associates, The Structure of Protection in Developing Countries, John Hopkins Press 1971.
- CARTTA (Camare Argentina de Radio, Television, Telecomunicaciones y Afines), "Proyecto de Modificacion de la Estructura Arancelario-Cambiaria", September 1966.
- Felix, David, "The Dilemma of Import Substitution-Argentina" in Development Policy - Theory and Practice, G.F. Papanek, ed., Harvard University Press, 1968.
- Ferrero, R.A. and A.J. Altmeyer, Estudio Economico de la Legislacion Social Peruana y Sugerencias para su Mejoramiento, Lima, 1957.
- Gregory, Peter, Industrial Wages in Chile, Cornell University Press, 1967.
- Little, I.M.D., T. Scitovsky and M. Scott, Industry and Trade in Some Developing Countries: A Comparative Study, Oxford University Press, 1970.
- Schydrowsky, Daniel, "From Import Substitution to Export Promotion for Semi-Grown-up Industries: A Policy Proposal", Journal of Development Studies. Vol 3, N° 4, July 1967.
- Schydrowsky, Daniel, "Short Run Employment Policy in Semi-Industrialized Economies", Economic Development and Cultural Change, 19:391-413, April 1972.
- Schydrowsky, Daniel, M. "Working Note on a Profitability Model of Multiple Shifting" - Presented to Boston University Conference on Utilization of Capital in Industry in Latin America, Lima Peru, May 13-16, 1973 (1973a).
- Schydrowsky, Daniel, "Influencia del Mercado Financiero Sobre la Utilizacion de Capacidad Instalada", Presented to Second Shift Conference, Lima, Dec. 1972, reprinted as Center for Latin American Development Studies Discussion Paper Series No. 6, May 1973.
- Schydrowsky, Daniel, "On Determining Causality of Underutilization of Capacity: A Working Note" - Presented to Boston University Conference on Utilization of Capital in Industry In Latin America, Lima, Peru, May 13-16, 1973 (1973b).



Thoumi, Francisco, "Industrial Capacity Utilization in Colombia: Some Empirical Findings", mimeo, 1973 (1973b).

Vernon, Raymond, "Organization as a Scale Factor in the Growth of Firms" in Markham, J. and G.F. Papanek, eds., Industrial Organization and Economic Development, Boston, Houghton Mifflin Company, 1970.

Winston, Gordon, "Capital Utilization in Economic Development", Economic Journal, March 1971, pp. 36-60

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