

Fiscal policy for full capacity industrial growth...

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FISCAL POLICY FOR FULL CAPACITY
INDUSTRIAL GROWTH IN LATIN AMERICA

by

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Fiscal Policy for Full Capacity Industrial Growth in Latin America

by Daniel M. Schydrowsky

Abstract

Open unemployment in Latin America coexists with underutilization of capital. This quasi-Keynesian situation cannot be eliminated with a simple expansion of domestic aggregate demand in view of the balance of payments situation facing these countries. As a result, a part of the new output generated by putting the excess capacity to work must be exported in order to pay for the imports necessary for the higher levels of utilization to be sustainable.

The structure of the exchange rate system has a substantial anti-export bias thus hindering the generation of industrial exports. In addition, the "industrial inefficiency illusion" operates to reinforce the conviction that industrial exporting is impossible. For this and other reasons arising from the labor and tax legislations, putting capacity to work is not profitable at private prices.

At social (shadow) prices, however, the benefits can be expected to be substantial. A fiscal policy is therefore needed to bring private profitability in line with the net social benefits. Such a policy would be one of export subsidization.

Contrary to common belief such subsidies need not represent a net outflow from the Treasury. The higher level of activity concurrent with an increase in capacity utilization generates a greater tax base and more revenue. The total effect of the foreign trade and tax multiplier may well pay the whole cost of the subsidy or more.

Finally, the implications of full capacity growth for several Latin American countries are estimated for the year 2000. The ball-park figures indicate that per capita income at three shifts of operation would almost be double the level achievable in 2000 at one shift of operation and historical growth rates. It seems, therefore, that a vigorous fiscal policy of capacity utilization and industrial export promotion holds the promise of an impressive payout for the Latin American economies.

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**Fiscal Policy for Full Capacity Industrial
Growth in Latin America**

by

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I

A Latin American enigma: Keynesian Unemployment?

The Latin American economies are generally thought to be amply endowed with labor and rather scarcely endowed with capital. It is usually concluded that this structure in the relative availability of factors of production leads to the existence of unemployment and of low productivity employment of labor. Unemployment is indeed high in Latin America at the present time and it appears to be growing. The Latin American Institute of Economic and Social Planning has estimated the level of unemployment in Latin America to be about 11%. If the underemployed are included, this figure rises to 25%. If output grows at historical rates, overt unemployment is estimated at 18% for 1980. 1/

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1/ "The Unemployment Problem in Latin America", Organization of American States, third Interamerican Conference of Ministers of Labor of the Alliance for Progress, Document 10, 18 September 1969.

While the existence of unemployment is indisputable, evidence is also gradually accumulating on the presence of underutilization of capital. Not only do many of the Latin American economies periodically use their installed productive capacity at levels below their own customary norm, the norm itself is based on utilization of capital at less than 24 hours a day for 365 days a year less maintenance. Whereas in the developed countries, the relative factor endowment makes it undesirable to use the capital stock 'round the clock and day in day out, in economies with a surplus of labor of the magnitude that the Latin American countries apparently have, it is to be expected that the optimal use of factors would require much more intensive utilization of the capital stock than is observed in developed countries or than is in fact observed in the Latin American economies themselves. While systematic information of the extent of multiple shifting is not available at the present time, it is common knowledge in Latin America that on the average plant and equipment are used on a one shift basis, the exceptions being process centered industries in which 'round the clock operation is required for technical reasons. Deviations from the usual norm have been tabulated in Argentina for the periods 1961-65 and show capacity utilization to have fluctuated between 55% and 67% of this norm on average. 1/

The sectoral detail of these data are shown in Table 1.

1/ Conade, Results of Survey on Production and Investment Expectation of Industrial Enterprise, Table 3.

Table 1

Argentina
Utilization of Installed Capacity

Sector	Percentage of Actual Output with Respect to Maximum Output			
	1961	1963	1964	1965
Food and beverages	48.8	53.2	48.9	51.5
Tobacco	82.7	81.9	88.6	91.2
Textiles	83.2	59.2	68.9	77.1
Clothing	88.3	64.2	72.5	78.4
Wood	72.7	48.6	55.2	70.4
Paper and cardboard	55.1	48.3	52.7	62.4
Printing and publishing	73.3	58.3	62.4	70.8
Chemicals	73.4	59.9	68.1	73.8
Petroleum derivatives	87.9	78.2	84.7	83.6
Rubber	80.5	54.0	66.2	77.6
Leather	84.2	66.8	77.8	79.9
Stones, glass, and ceramics	70.2	59.0	68.7	71.8
Metals, excluding machinery	59.4	40.8	50.3	66.6
Vehicles and machinery (excluding electrical equipment)	78.6	44.6	56.5	65.6
Electrical machines and equipment	59.2	43.5	47.6	61.0
Weighted average	67.2	54.6	59.5	66.1

Source: CONADE, Results of the Survey on Production and Investment
Expectations of Industrial Enterprises (Buenos Aires:
CONADE, March 1965), table 3.

The existence concurrently of unutilized labor and unutilized capital throws considerable doubt on the prevailing hypothesis that unemployment in Latin America is of the structural kind. Rather, it suggests the possibility that Latin America is faced with a typical Keynesian unemployment problem. Such a conclusion is tempting; however, it must be born in mind that production cannot simply go forward on the basis of capital and unskilled labor as the only factors of production. In the Latin American context, skilled labor, management and foreign exchange are equally crucial factors of production. Yet none of these factors can be thought of as existing in absolutely fixed supply. Surely skilled labor can be trained if there is a demand for it; entrepreneurs will appear if there are profit opportunities or may themselves have "excess capacity" and, finally, foreign exchange is a produced input, and with suitable macro-economic policies is available as any other intermediate product rather than as a primary factor of production. Thus it does seem appropriate to conclude that Latin America is at present beset by an unemployment problem more akin to a Keynesian situation than to a structural development one.

If this conclusion is correct, Latin America has a very considerable potential for increasing its level of income, its growth rate, and its employment simply by using its existing factors more fully. The growth problem in Latin America then becomes very closely entangled with the problem of utilization of resources rather than being in the first instance a problem of allocation.

Such a change in emphasis also makes considerable difference to the framework of analysis in which Latin American policy is conducted. For example, in such a context import substitution & outrance, which has been repeatedly criticized on allocation grounds, appears more reasonable. If all domestic factors are in excess supply, any and all foreign exchange saving activity is desirable. It is only when at least one of the domestic factors have non-zero costs that a comparison of different ways of saving (or earning) foreign exchange becomes relevant. Although Latin American import substitution policies

offer some grounds for believing that policy makers were aware of the nature of their economies' unemployment, such a recognition, if extant, clearly did not carry over to other areas of policy.

II

Barriers to capacity utilization

A number of factors inhibit the fuller utilization of installed capacity on the part of industrial firms. The main ones are the following:

a. Unavailability of market for the product

The domestic markets of the various Latin American countries are of such limited size that the productive capacity operating at one shift or less is able to satisfy the total demand forthcoming at prices that allow the accustomed profit to be made. It is of course true that any one of the firms in an industry could reduce its price and attempt to drive its competitors out of business in order to then satisfy the whole market at a fuller level of utilization of its installed capacity. From the point of view of the economy as a whole, such a development primarily reallocates excess capacity, use only expanding to the extent that a lower price increases the total industry sales.

Price cutting of this kind happens only rarely, if at all, because of the oligopolistic structure of the market, each participant knowing that the others will retaliate and uncertain of his own final success. At the same time, the government is aware that an artificial expansion of the domestic market through the extension of consumer or producer credit is not feasible in the long run due to the balance of payments effects of expanding output. Since Latin American industry by and large requires some imported material inputs in order to be able to operate, an expansion of demand in the domestic market and the consequent increase in domestic production to supply it implies immediately a rise in imports which is not sustainable over the long term, given the balance payments situations of these countries. Finally, the export market is not a relevant one for most Latin American

producers due to the level of their costs which at the current exchange rates is considerably above the prices they can obtain in the export markets. Market conditions are such then, that there is nowhere to place the increased output arising from fuller utilization of capacity.

b. Unavailability of working capital

Since production is not instantaneous, a certain amount of working capital is needed for maintenance of stocks of raw material, goods in process, and finished products. Latin American industry typically finances this working capital with bank credit. This implies that unless credit for working capital were expanded, fuller utilization of capital would be made impossible through a constraint on the possibility of maintaining the required inventories of various types of materials and goods in process.^{1/} In addition it must be borne in mind that some of these inventories consist of imported products and thus their increase has balance of payments effects.

c. Unavailability of skilled personnel

Skilled and supervisory labor are inputs complementary to capital, unskilled labor and foreign exchange. The total unavailability of such 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 24 hours a day. In larger firms, with hired management, this problem becomes less acute. Nevertheless, the procurement of supervisory labor of adequate quality to work the 2nd and 3rd shifts is no negligible problem. At the same time, the process centered industries in which the nature of the technical process requires working around the clock, have found it possible to obtain the requisite type of labor, thus, it is difficult to believe that other industries would not be equally successful. It appears

^{1/} For a general argument in favour of considering credit a factor of production cf. Maynard, G. and W. van Rijkeghem "Stabilization Policy in an Inflationary Economy" in G.P. Papanek, ed. Development Policy: Theory and Practice, Harvard University Press 1968.

useful, therefore, to think of this element more as generating an extra cost rather than as raising a question of absolute availability.

d. Labor cost structure

The movement to a second and or third shift implies a discrete enlargement in the labor force in industry. In the context of labor regimes in which hiring is considerably easier than firing due to laws protecting the stability of employment, regulations governing severance pay, vacations, etc.^{1/}, such a commitment on the part of industry has aspects similar to those of investment in a fixed asset.^{2/} In addition, labor laws or collective bargaining contracts often specify higher pay for second and third shift work, thus making the hiring of additional labor for fuller capacity utilization through multiple shifting more expensive than the acquisition of a similar amount of labor to work a first shift on additional capital goods.

e. Tax legislation

Depreciation rules for corporate income tax purposes are typically related to a number of calendar years according to the type of equipment. No allowance is made for the level of intensity with which the equipment is used. As a result, the total allowable depreciation can be used as a deduction from taxable profits arising out of first shift operation. If a second or third shift of production is added, no further deduction for depreciation can be taken from taxable profits. In consequence, the same tax rate has a higher incidence on each peso of profit earned from a second or third shift than it does on a peso of profit earned from the first shift. However, such a differential impact is equivalent to a higher corporate tax rate on second and third shift profits and constitutes a disincentive to the operation of such shifts.

^{1/} The current cost of fringe benefits to the hiring enterprises was estimated in 1957 by R. Ferrero for Peru at 41.4% of wages for blue collar workers and 45.9% for white collar workers. The impact of a substantial dismissal on company liquidity requires a different analysis, however. Cf. Ferrero R.A. and A.J. Altmeyer "Estudio Economico de la Legislacion Social Peruana y Superencias para su Mejoramiento" Lima 1957.

^{2/} For a more general discussion of labor force hiring as a fixed

III

The availability of a Market and of Foreign Exchange Inputs

We have noted before that the internal market, at current levels of aggregate demand, is not sufficient to absorb the additional output arising from fuller utilization of the industrial capacity. At the same time, it is not possible to expand the aggregate demand without placing an intolerable strain on the balance of payments. The obvious solution is to look to the export market which has sufficient capacity to absorb the additional output of any one Latin American country and indeed of all of them together. In addition, the placing of output on the foreign market would provide the necessary foreign exchange to acquire the imported inputs necessary for production to go forward. The problems of market availability and foreign exchange availability are therefore interdependent and can be solved simultaneously. Moreover, it is worth bearing in mind that as industrial exports increase and the availability of foreign exchange is thereby augmented, it becomes possible to adopt a more expansive aggregate demand policy thus absorbing some of the increased industrial output in the domestic market. In consequence, the balanced policy will be one in which only a part of the additional industrial product gets exported, the remainder being absorbed by the domestic market through an expansion in the aggregate demand therein. The precise point of balance is one in which the new industrial exports cover precisely the new import requirement generated by the output itself as well as by the additional domestic aggregate demand.

A necessary condition for such a policy to be feasible is the price competitiveness of industrial output. ^{1/} This condition is generally

investment cf. 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 1970.

^{1/} This condition is not by itself likely to be a sufficient one.

Quality of product and marketing channels with appropriate information feedback are two other conditions which are necessary ones in most situations.

thought to be so difficult to fulfill that the Latin American policy makers have typically not looked at the export market as a likely place for placing any industrial output. The prevalent view is that Latin American industrial production is "very high cost" and "inefficient". Such a conclusion is derived from a rather simple cost analysis which consists of taking the costs of production in local currency, dividing these costs through by the exchange rate and comparing the resultant foreign exchange amount with the current price in the international markets. Such an analysis is fortunately highly misleading.

The Latin American economies all operate with an implicit multiple exchange rate system which consists of a unified financial exchange rate and a highly differentiated set of import and export taxes and other restrictions. Whereas the financial exchange rate, i.e. the amount of units of local currency for which a unit of foreign exchange sells in the local financial market, is the figure that receives most attention, from the point of view of the impact on the economy's performance, the influence of the trade taxation and other trade restrictions is at least as important. Indeed, the whole "exchange rate system" is 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 exchange rate is defined as the number of units of local currency for which a dollar's worth of imports at CIF prices (or exports at FOB prices) sells for (is bought at) on the domestic market. Each commodity exchange rate is equal to the financial exchange rate plus all the trade taxation and restrictions assessed on the import or export of that particular commodity. A single commodity may naturally have more than one commodity exchange rate depending on whether it is imported, exported, or traded under a variety of regimes.

A typical Latin American exchange rate system is structured like that of Argentina in 1966, which consisted of the following rates:^{1/}

^{1/} Taken from "Proyecto de Modificación de la Estructura Arancelario-Cambiaría", Cámara Argentina de Radio, Televisión, Telecomunicaciones y Afines (Carta), September 1966.

<u>Rate</u>	<u>Composition</u>	<u>Pesos per \$</u>
Agricultural Export	= Financial less 10% tax	= 200
Financial	= Financial	= 220 = official rate
Non-traditional Export	= Financial + 18% tax rebate	= 260
Raw Material Import	= Financial + 50% duty	= 330
Semi-Manufactures Import	= Financial + 120% duty	= 460
Components Import	= Financial + 175% duty	= 600
Finished Products Import	= Financial + 220% duty	= 700

Examining now the cost structure of the typical Argentinian industrial producer, we find that his imported material inputs would be acquired at an exchange rate ranging from 330 to 600 pesos per dollar. His domestic material inputs would be supplied by local producers at prices somewhat below the import point, i.e. at prices reflecting an exchange rate range of say 310 to 580 pesos per dollar. Finally, the typical producer's wage rate would reflect an exchange rate approximating the average exchange rate applying to industrial output in general or about 600 pesos per dollar. ^{1/} Thus our producer's cost exchange rate would approximate 450 to 500.

Two conclusions can be drawn from this calculation of the cost exchange rate. The first of these is that at a non-traditional export exchange rate of 260, the typical Argentinian producers could not have been expected to export. Indeed, he was implicitly subject to a substantial export tax through the relative exchange rates for costs and sales with which he was confronted. This situation, of course, generalizes to Latin America as a whole: the import commodity rates are very disparate and invariably higher than the financial and the non-traditional export rates. Table 2 shows the ratio^{of} commodity import rates to the financial rates for two digit industries in Brazil, Chile and Mexico.

^{1/} $w =$ marginal physical product (MP_P) x price of output. If the unit^{of} output is set at an amount costing \$1 CIF, then we have $w =$ marginal physical product x average commodity exchange rate for output.

The second conclusion is that it is inappropriate to take local currency costs and compare them to world prices by means of the financial exchange rate. Since costs are based on an exchange rate substantially above the financial exchange rate, the comparison of these costs with world prices by means of the financial rate implies an overstatement in the dollar costs. The standard cost calculations, therefore, generate an "inefficiency illusion" which "substantiates" the conviction that Latin American industrial production is high cost and inefficient. An impression of the importance of the inefficiency illusion can be derived from Table 3 which presents estimates of the excess of local costs over the world price for Brazil on the basis of the financial exchange rate and an average industrial cost exchange rate.

Several additional factors need to be mentioned at this point. The anti-export bias introduced by the inequality of the industrial cost exchange rate and the non-traditional export exchange rate is made worse by the impact of transportation costs which reduce FOB prices below the CIF prices for equivalent commodities. Import duties in the developed countries serve to widen this FOB/CIF gap further and to reinforce the anti-export bias of the exchange rate system. On the other hand if exports would be additional to rather than substitutive of domestic sales and excess capacity is available, they may well have a marginal cost below the average cost of output for the domestic market. If such were the case, the anti-export bias in the exchange rate structure and in the world price structure would be somewhat offset. Further offsets could come from monopolistic market structures in the domestic commodity markets of potential export products of Latin America. Such structure essentially implies a marginal cost below the domestic price. Finally, monopolistic pricing in developed countries by producers of potential Latin American export products would also generate an offset by providing a higher price floor which must be undercut.

Table 2

Import Commodity Rates in Selected Latin
American Countries

(Financial Rate = 1.00)

	<u>Brazil</u> <u>1967</u>	<u>Chile</u> <u>1961</u>	<u>Mexico</u> <u>1960</u>
Non-Metallic Mineral Products	1.40	2.39	.96
Metallurgy	1.34	1.66	1.30
Machinery	1.34	1.84	1.30
Electrical Equipment	1.57	2.05	1.25
Transport Equipment	1.57	1.84	1.26-1.52
Wood Products	1.23	1.35	1.14
Furniture	1.68	2.29	-
Paper and Paper Products	1.48	1.55	1.35
Rubber Products	1.78	2.02	1.33
Leather Products	1.66	2.61	1.20
Chemicals	1.34	1.94	1.21
Pharmaceuticals	1.37	-	1.12
Perfumes and Soaps	1.94	-	1.10-1.22
Plastics	1.48	1.50	-
Textiles	1.81	2.82	1.30
Clothing	2.03	3.55	1.10
Food Products	1.27	1.82	1.18
Beverages	1.83	2.22	1.28
Tobacco	1.78	2.06	1.31
Printing and Publishing	1.59	1.72	1.13
Metal Products	-	1.59	1.31
Fertilizers and insecticides	-	-	1.09

Source: Bergsman, J. and Pedro S. Malan "The Structure of Protection in Brazil", Table 6.6, Col. 5

Jeanneret, T. "The Structure of Protection in Chile", Table 7.8, Col. 1

Bueno, G. "The Structure of Protection in Mexico", Table 8.7, Col. 3

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

The Private and Social Benefits and Costs of Capacity Utilization

We have already established that utilization of capacity requires industrial exporting. We have also suggested that the generation of such exports is hampered by an exchange rate system that has a sufficiently large anti-export bias to make exporting unprofitable, i.e. at private prices benefits from export sales (revenue) fall short of costs (expenditure).

An estimate of the excess of costs of production in Brazil, Chile and Mexico over prices in developed countries on the assumption of fully competitive markets all around and no excess capacity is shown in Table 4. Due to the various considerations discussed at the end of the last section, these figures overstate the true cost/price gap, however, the precise extent of this overstatement awaits a quantification of the impact on marginal costs and prices of levels of capacity use and market structure in both the exporting and importing countries.

The effect of the anti-export bias in the exchange rate system can be expressed as the percentage of per unit current value added that could be paid to factors on the basis of revenue from export sales under the existing exchange rate structure. Table 5 shows such data for Brazil, Chile, and Mexico. It will be noticed that in some cases, the anti-export bias is such that revenue from export sales would be insufficient to cover the costs of the material inputs required by such sales.

The social cost, i.e. the cost at shadow prices, of additional industrial production is substantially below private costs for a number of reasons. Labor costs would be much lower on several counts: unskilled labor is generally recognized to be in surplus supply and thus would have no opportunity cost from the point of view of the economy as a whole. Semi-skilled^{and skilled} labor is not so extensively available, but could be generated through the training of some of the existing surplus of unskilled labor. This training cost, however, when viewed in relation to the useful lifetime of the trainees, becomes a negligible magnitude. Nor is it appropriate to include in the shadow price of labor an item for reduction in society's investment^{1/} except in the unlikely case that

^{1/} The "Little-Mirless" adjustment. Cf. OECD "Manual on Project Analysis".

THE EXCESS OF COST OVER EXPORT PRICE FOR SELECTED
LATIN AMERICAN COUNTRIES

Sector	<u>Brazil</u>				<u>Chile</u>				<u>Mexico</u>			
	Own Tariff	Industrial Country Tariff	Freight	Total ^{1/}	Own Tariff	Industrial Country Tariff	Freight	Total	Own Tariff	Industrial Country Tariff	Freight	Total
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Non-Met. Minerals	40	5	5	62	139	5	5	177	-4	5	5	11
Metallurgy	34	5	15	85	66	5	15	131	29	5	15	78
Machinery	34	22	8	90	84	22	8	103	30	22	8	84
Electrical Equipment	57	22	8	122	105	22	8	191	25	22	8	77
Transportation Equipment	57	22	8	122	84	22	8	161	26*	22	8	78
Wood Products	23	5	30	119	35	5	30	140	14	5	30	103
Furniture	58	16	8	117	129	16	8	210	—	16	8	—
Paper & Products	48	5	8	81	55	5	8	89	35	5	8	65
Rubber Products	78	8	6	124	102	8	8	154	33	8	8	67
Leather Products	66	16	8	114	161	16	8	252	20	16	8	62
Chemicals	34	8	8	69	94	8	8	54	24	8	8	56
Pharmaceuticals	37	8	8	73	—	8	8	—	12	8	8	41
Perfumes & Soaps	94	16	8	162	—	16	8	—	10**	16	8	48
Plastics	48	8	8	87	30	8	8	64	—	8	8	—
Textiles	81	8	8	128	82	8	8	255	12***	8	8	41
Clothing	103	16	8	174	255	16	8	380	10	16	8	48
Metal Products	—	8	8	—	60	8	8	100	31	8	8	65
Fertilizers & Insecticides	—	8	8	—	—	8	8	—	9	8	8	38

$$\frac{1}{\text{Total}} = \left(1 + \frac{\text{Own tariff}}{100}\right) \left(1 + \frac{\text{Industrial tariff}}{100}\right) \left(1 + \frac{\text{freight}}{100}\right)^2 - 1$$

SOURCES: Own tariffs: Bergsman & Malan, Jeanneret, Bueno, op. cit. Industrial Country Tariffs, Balassa, B., "The Structure of Protection in Industrial Countries and Its Effect on the Exports of Processed Goods from Developing Countries." Paper submitted to UNCTAD II, Table 1. Freight: Balassa, B., footnote in above source taken from "Trade Prospects in Developing Nations."

^{1/}Railway equipment only, ** soap only, *** cotton textiles only

Table 5

THE ANTI-EXPORT BIAS OF THE EXCHANGE RATE
SYSTEM IN SELECTED LATIN AMERICAN COUNTRIES

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

<u>Industry</u>	<u>Brazil</u>	<u>Chile</u>	<u>Mexico</u>
Non-Metallic Mineral Products	.64	NVA	---
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.: no payments to factors feasible

* Cotton textiles

** Railroad equipment only; motor vehicles have NVA

SOURCES:

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

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

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

in Bela Balassa and Associates, The Structure of Protection in Developing Countries, Johns Hopkins University Press, 1971

consumption out of the new wage bill caused a reduction in the absolute level of investment that would be forthcoming in the absence of the capacity utilizing production. The social cost of labor in production is therefore negligible.

The social cost of capital is also substantially below the private cost. Since the use of installed capacity is at issue, the capital outlay has already been made. The only relevant cost for utilization is a possible user cost. This in turn depends on whether scrapping of installed capital is the result of actual physical deterioration or of technological obsolescence. If scrapping arises from wear, the social cost is equal to the present value of the output foregone due to earlier scrapping. Assuming the production from years 20 to 40 is at issue, this will be substantially reduced by any reasonable discount rate. If scrapping is due to obsolescence, be it at private or social costs, then the marginal cost of using installed capacity is zero, except for additional maintenance cost.

The social benefit of capacity utilizing industrial production can take two forms, depending on whether the output is (a) exported, or (b) used to increase domestic absorption of the goods produced over the level obtaining in the absence of such production. In the first case the social benefit is equal to the net foreign exchange made available, i.e. to the difference between the foreign exchange value of the output and the foreign exchange value of the material inputs. For the output, FOB prices are relevant and for inputs FOB or CIF prices should be used depending for each material input on whether it is exported or imported (or substitutes for imports).

If the output is used to increase domestic absorption, the social benefit is equal to the excess of the marginal social utility of the good whose absorption is increased over the marginal social cost of the material inputs required for production. This cost will equal the foreign exchange value of the material inputs converted to local currency at the marginal social utility of foreign exchange, if the material inputs are traded on the margin. It is worth noting that an activity may have negative social benefits under use (a) and still yield positive benefits under (b) if the commodity concerned has a demand price (i.e. marginal utility) greater than the demand price for foreign exchange in

general (i.e. marginal utility of foreign exchange), as is likely to be the case with commodities at the higher end of the protection spectrum.^{1/}

From an empirical point of view, most productive activities in Latin America yield positive social benefits under (a) and of the remainder only a few would fail to do so under (b). Thus, it can be concluded in general that the social benefit of using installed capacity is positive. Whether the social benefit will also exceed the social cost depends both on the size of the benefit as well as on the importance of the user cost of capital as a social cost. It is to be expected, however, that utilization of installed capacity in a broad spectrum of activities would have a high excess of social benefits over social cost.

V

Fiscal policy for capacity utilization

So far we have argued the following:

- (1) The utilization of capacity requires that some of the new output generated with that utilization be exported;
- (2) At social (shadow) prices the export of part the production arising from capacity utilization will leave a positive net benefit for a wide spectrum of activities;
- (3) At private prices, exports are unprofitable.

It follows, therefore, that fiscal policy for capacity utilization must consist of making the export of industrial production profitable in those sectors in which it leaves a net benefit at social (shadow) prices. A version of such a policy is one which subsidizes exports.

^{1/} Given some level of availability of foreign exchange, the marginal utility of foreign exchange is equal to $1 + \sum m_i t_i$ where the m_i are the marginal propensities to import and the t_i are the tariffs or tariff equivalents of import restrictions. The marginal utility of a tradable commodity is given by $1 + t_i$. Defining a_{ji} as the input of material j into one unit of i , all taken at free trade prices,

Export subsidies have traditionally been opposed by the policy makers of Latin America, on the grounds that they foster inefficient industries and that in addition they draw on very scarce fiscal resources which are better employed elsewhere. The first of these reasons is based on the comparison of domestic industrial costs and international prices by use of the financial exchange rate. This procedure has already been shown to be an inappropriate way of undertaking these comparisons. It is biased against the conclusion that industrial cost will allow exporting and instead gives rise to the phenomenon of "industrial inefficiency illusion". The second objection is not conclusive either. An export subsidy, once enacted, will only generate fiscal expenditure if exports in fact take place under it. Such exports would at the same time, however, imply additional economic activity 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 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, the export subsidy generates its own (partial or total) financing. Under the Latin American conditions in which the marginal import propensities are rather low, foreign trade tax multipliers tend to be high and as a result 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, what is at issue is the use of a full capacity utilization budget to estimate the fiscal impact of export subsidies. This full capacity budget is analogous to the full employment budget introduced recently in the U.S. However, whereas in the U.S. version, the issue is a spending (reduction) of government revenue

it can easily be seen that negative net benefits under (a), $1 - \sum a_{j1} < 0$, does not in general imply negative benefits under (b), $(1 + t_1) - (1 + \sum m_{it_1}) \sum a_{j1} \geq 0$. For the derivation of the marginal utility of foreign exchange, Cf. D.M. Schydowsky "On the Choice of a Shadow Price for Foreign Exchange", Economic Development Report 108, Harvard University Center for International Affairs.

to generate domestic activity and additional domestic employment which in turn will then finance the government expenditure, in Latin America we are faced with a situation in which it is the expenditure of public funds for the creation of exports which generates a higher level of economic activity and in consequence an increase in revenue.

A simple model of the following kind allows the calculation of a full utilization budget and specifically of the maximal subsidy payable without net fiscal cost to the exchequer.

Define:

- P = total expenditure of the private sector
- p = marginal propensity to spend of the private sector
- M = imports at CIF prices
- m = marginal (= average) propensity to import
- Y = income at market prices
- E = exports at FOB prices
- G = government expenditure
- T = fiscal revenue
- a = rate of ad valorem import duties
- td = rate of direct taxes on income
- ti = rate of taxation on domestic transactions expressed as a percentage of national income

Then:

$$\begin{aligned} P &= p_0 + p(1 - td - ti - a \frac{M}{Y}) Y & (1) \\ M(1+a) &= m(1 - td - ti - a \frac{M}{Y}) Y & (2) \\ E &= E_0 & (3) \\ G &= G_0 & (4) \\ Y &= P + G + (E - M) & (5) \\ T &= aM + (td + ti)Y & (6) \end{aligned}$$

This system of equations tells us that gross private disposable income ^{5/} determines the level of final demand for domestic goods and

^{5/} Note that this is defined at factor cost - hence, the terms for indirect taxation and import duties.

for imports measured in domestic prices (eqq [1 and 2]), that exports and government expenditure are exogenously determined (eqq [3 and 4]), that income must equal expenditure (eq 5) and that fiscal revenue comes from several kinds of taxes.

The total differential of fiscal revenue with regard to income from exports will show the net increase in fiscal resources per peso of additional income of exporters.

$$\Delta T = \frac{am(1-t_x) + (1+a)(t_d+t_i)}{(1+a)\{1-(1-t_x)[p-\frac{m}{1+a}]\}} dE \quad (7)$$

where $t_x = t_d+t_i+a \frac{M}{Y}$

Incorporating export subsidies explicitly requires substituting E by $E^* = (1+s)E$, where s = rate of subsidy on FOB value of exports. The net fiscal change after export subsidy payments can now be written as

$$\Delta T_n = \frac{am(1-t_x) + (1+a)(t_d+t_i)}{(1+a)\{1-(1-t_x)[p-\frac{m}{1+a}]\}} dE^* - \frac{s}{1+s} dE^* \quad (8)$$

Applying these formulae to Argentina with $t_x = .43$; $t_d = .0467$; $t_i = .07$; $a = .024$; $m = .159$, $p = 1$, one obtain

$$\Delta T_n = .566 dE^* - \frac{s}{1+s} dE^* \quad (9)$$

To obtain the maximal subsidy rate, s, which causes no net deficit, equation (9) is set equal to zero and $s = 1.3$ which means that in Argentina a subsidy rate of upto 130% of the FOB value of the export will not disimprove the fiscal balance. ^{1/} Other countries will surely have different and probably lower, cutoff points but economies as closed as the Latin American ones cannot fail to have high foreign trade multipliers, and hence room for substantial export subsidization without a negative net fiscal impact.

^{1/}For more detail on this model including period analysis, sectoral disaggregation and sensitivity analysis of the parameters, Cf.

D.M. Schydlosky "Short Run Policy in Semi Industrialized Economies", Economic Development and Cultural Change, April 1971.

VI

The effects of multiple shifting

Fuller utilization of capacity will naturally generate a once and for all increase in the level of income. Since second and third shifts are typically somewhat less productive than the first shift, one can expect the addition of a second shift to somewhat less than double the contribution of industry to GNP, and the addition of a third shift to add again somewhat less than the second shift. Assuming that the complementary factors of production can all be made available, and fiscal policies adopted to achieve the macro balance necessary, ball-park levels for per capita income at one, two and three shifts of operation of industry can readily be calculated. Table 6 presents such estimates for Argentina, Brazil, Chile, Colombia and Peru for the year 1967, in terms of index numbers of real per capita income based on Beckerman's study^{1/} in which U.S. per capita income in 1960 is taken at 100. In this calculation it is assumed that industry operates on the average at one shift of capacity.

In addition to producing a once and for all increase in the level of income, full utilization of capacity reduces the capital output ratio. Furthermore, if the marginal savings rate is above the average, there will be an increase in the average savings rate. These two factors together will generate a higher rate of growth. Unless the level of demographic increase is strongly and positive affected by the level of per capita income, the higher level of aggregate growth will also signify higher per capita income growth. The combination of a larger base and a higher rate of growth arising from multiple shifting generate much quicker increase in the level of income in multiple shifting countries.

The implications of applying full industrial capacity growth can be seen by comparing income on the assumptions of 1, 2 and 3 shifts of operation of the industrial sectors of Argentina, Brazil, Chile, Colombia and Peru in the year 2000. This comparison is presented in Table 7 which shows that triple shifting almost duplicates the per capita income attainable in the year 2000.

^{1/} Beckerman, W. "International Comparisons of Real Income", OECD.

Table 6

ESTIMATED REAL PER CAPITA INCOME OF SELECTED
LATIN AMERICAN COUNTRIES AT DIFFERENT
NUMBER OF SHIFTS WORKED IN INDUSTRY
1967
(U.S. 1960 = 100)

	<u>One Shift</u>	<u>Two Shifts</u>	<u>Three Shifts</u>
Argentina	26.0	30.4	34.0
Brazil	13.0	15.0	16.5
Chile	21.0	23.6	25.9
Colombia	12.0	13.1	14.0
Peru	10.0	10.8	11.4

Table 7

ESTIMATED REAL PER CAPITA INCOME OF SELECTED
LATIN AMERICAN COUNTRIES AT DIFFERENT
NUMBER OF SHIFTS WORKED IN INDUSTRY
FOR YEAR 2000
(U.S. 1960 = 100)

	<u>One Shift</u>	<u>Two Shifts</u>	<u>Three Shifts</u>
Argentina	42	80	87
Brazil	25	41	47
Chile	35	70	97
Colombia	20	35	38
Peru	23	29	31

VII

Conclusion

In this paper we have argued that unemployment in Latin America coexists with underutilization of capital. This quasi-Keynesian situation cannot be eliminated with a simple expansion of domestic aggregate demand in view of the balance of payments situation facing these countries. As a result, a part of the new output generated by putting the excess capacity to work must be exported in order to pay for the imports necessary for the higher levels of utilization to be sustainable.

The structure of the exchange rate system has a substantial anti-export bias thus hindering the generation of industrial exports. In addition, the "industrial inefficiency illusion" operates to reinforce the conviction that industrial exporting is impossible. For this and other reasons arising from the labor and tax legislations, putting capacity to work is not profitable at private prices.

At social (shadow) prices, however, the benefits can be expected to be substantial. A fiscal policy is therefore needed to bring private profitability in line with the net social benefits. Such a policy would be one of export subsidization.

Contrary to common belief such subsidies need not represent a net outflow from the Treasury. The higher level of activity concurrent with an increase in capacity utilization generates a greater tax base and more revenue. The total effect of the foreign trade and tax multiplier may well pay the whole cost of the subsidy or more.

Finally, the implications of full capacity growth for several Latin American countries were estimated for the year 2000. The ball-park figures indicate that per capita income at three shifts of operation would almost be double the level achievable in 2000 at one shift of operation and historical growth rates. It seems, therefore, that a vigorous fiscal policy of capacity utilization and industrial export promotion holds the promise of an impressive payout for the Latin American economies.