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INDUSTRIAL EXPORTING IN ARGENTINA

by

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Subsidies, Recession and Non-Traditional Industrial Exporting in Argentina*

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Argentina, like many industrialized LDCs, has been afflicted for some years with an acute case of two-gapitis; the import-export gap rather than the investment-savings gap having been the dominant macro-constraint on output growth since around 1950.^{1/} In the period 1950-68 GNP per capita grew at an annual rate of about 0.9% as the economy lurched through a succession of 3-4 year cycles of growth and recession, the recessions being set off by the excess demand for foreign exchange generated during the growth phase of the cycles. In the 1950s increased foreign borrowing

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^{1/}A recent application of the two-gap model to Argentina by the UNCTAD secretariat estimates the long term partial elasticity of GDP with respect to intermediate imports to be 0.17 for the period 1950-65. That is, despite intense efforts during this period to establish import substituting intermediate goods industries, GDP would have risen 1.7 per cent higher for each 10 per cent increase in the capacity to import intermediate goods. See UNCTAD Secretariat, "Trade Projections for Argentina" mimeo. The study corroborates my own finding that shifts in final demand in this period tended to more than offset the import savings from the establishment of import substituting intermediate industries in Argentina. See David Felix, "The Dilemma of Import Substitution -- Argentina" in Gustav Papanek, ed., Development Policy: Theory and Practice (Harvard University Press, 1968).

partly offset the foreign exchange constraint, but this brought retribution in the form of a severe debt service problem to the 1960s. In 1961-68 output per capita despite a rise in exports, oscillated around a horizontal trend and industrial excess capacity and unemployment became a severe and chronic problem.

Paralleling the industrial stagnation of the 1960s has been a rise in industrial exporting and more concerted efforts by Argentine governments to stimulate such exporting. In addition to frequent global devaluations, the stimuli include subsidies for "non-traditional exports" and entry into the Latin American Free Trade Association (LAFTA). The export subsidies have been chiefly rebates for import duties (drawbacks) and indirect taxes (reintegros) levied on imported and domestic materials and intermediate products incorporated in non-traditional exports. LAFTA, although its original goal of full regional free trade seems to be receding indefinitely into the future, has nevertheless been a useful vehicle for negotiating preferential tariff cuts, mainly on industrial products, among member countries, and for industrialists of the various countries to exchange information and occasionally to make deals at the annual negotiating sessions. The initiation of export subsidies and LAFTA trade concessions both occurred in 1962 coincident with the onset of the severe 1962-63 industrial recession. In 1963, there was a very sharp rise in "non-traditional" industrial exports and after 1963 these exports have tended to rise further though more moderately and unevenly -- at least through 1968. Hence separating the relative importance of the various stimuli is not easy.

The first part of the paper reports on some statistical attempts to assess the causal factors behind the rise of non-traditional exports.

Three findings are of particular interest. (1) Statistically, almost all of the variance of non-traditional industrial exports for the period, 1955-66 is accounted for by excess capacity and by LAFTA. (2) These exports, on the other hand, seem to have been quite unresponsive to exchange rate movements, their partial correlation with the exchange rate adjusted for export subsidies was statistically insignificant for most groupings of these exports. (3) In contrast to a priori expectations based on conventional trade theory, the major share of such exports, both to LAFTA and to the rest of the world, has come from relatively capital intensive Argentine industries.^{2/} Part II relates the

^{2/}This result, however, conforms broadly to a priori expectations of Argentine business as expressed in a survey of leading Argentine trade associations made at the end of 1963. Each respondent was asked to identify the five non-traditional industrial products with the best prospects for substantial exporting to LAFTA countries. The top ten in order of frequency of choice were:

- Motor vehicles and tractors
- Non-electric machinery
- Electric machinery and equipment
- Organic chemicals
- Textiles
- Railroad equipment
- Vegetable preparations
- Natural and synthetic rubber products
- Foundry iron
- Miscellaneous metal products

Although the interviewers urged the respondents to give major importance to cost competitiveness in making their selections, the four main reasons given by the respondents for their product choices were in order of frequency:

- Current excess capacity
- Minimal production by other LAFTA countries
- Future excess capacity
- Progressive management

See José M. Dagnino Pastore, Productos Exportables: Resultados de Encuestas Documento de Trabajo (Buenos Aires: Instituto Torcuato Di Tella, 1964).

findings to Argentine industry pricing patterns and exchange rate policies, while Part III discusses the implications of the findings for export promotion policy.

I. The Behavior of Non-Traditional Exports, 1955-66

Non-traditional industrial exports, although a somewhat imprecise concept, is analytically meaningful in the Argentine context. The Argentine industrial sector divides readily enough into a small group of long established industries which process agricultural and forestry products, a sizeable percentage of which is exported, and a large array of industries whose market orientation has been almost exclusively domestic. In the first half of the 1960s, the value added of the export processing group averaged around 3.5 per cent of gross domestic product, it provided less than 8 per cent of all industrial employment, but it supplied well over half of all Argentine exports. In contrast, the remaining industries produced about 27 per cent of gross domestic product and supplied about 5 per cent of all exports.^{3/}

^{3/} Industrial value added averaged 30.3 per cent of gross domestic product in 1960-65, according to the national accounts of the Argentine Central Bank. The 1963 census of manufactures shows the export processing group to have produced 11.2 per cent of industrial value added in 1963 and to have accounted for 7.6 per cent of industrial employment on the census day, April 30, 1964. Both figures are probably somewhat above average for 1960-65, since the domestically oriented industries were more severely depressed in 1963 than the exporting group.

The export processing group in these calculations consists of the following 5 digit ISIC industries:

Meat packing (20101, 20104)	Wool Washing (23102)
Dairy Products (20201)	Preparation of vegetable fibres
Flour Milling (20502)	other than cotton (23103)
Sugar Refining (20701)	Salting and depilating hides (29101)
Oilseed Refining (20911)	Quebracho Extracting (31106)
Cotton Ginning (23101)	Fat Rendering and Bone Milling (31201)

Two other features also distinguish the export processing industries economically from the rest of the industrial sector. Their ratio of value added to value of output is much lower than for the rest of the sector; 32 per cent as compared to 34 per cent, according to the 1963 census of manufactures. Secondly, because of the relatively easy exportability of their output, their rates of capacity utilization have been mainly a function of the changing levels of output of the basic agricultural inputs being processed, rather than, as with the rest of the industrial sector, of fluctuations in the level of domestic demand. Argentine foreign trade statisticians have a plausible case, therefore, for classifying the exports of these export processing industries as agricultural, livestock and forest rather than industrial products. This is the classification used in Tables 1-3, Appendix B, which summarize Argentine exports by major grouping for the period 1938-1966.^{4/} The slow growth of exports since the war shown by Table 1 helps to illustrate why Argentina has been plagued with two-gapitis since 1950.

In this study non-traditional industrial exports are, with some deletions, the industrial products listed by the Argentine Secretary of Commerce in Decree 46/65 as eligible to receive drawbacks and reintegros. The list, which was

^{4/} The classification is not completely consistent, however. Refined sugar, for example, is classified under Diverse Manufacturing Exports in the foreign trade statistics, possibly because sugar in common with many of the domestically oriented industrial products, is produced at very high cost in Argentina. In Table 1, about 20 per cent of the increase in Diverse Manufacturing Exports between 1956-60 and 1961-66 is accounted for by sugar exports. Almost all the sugar increase occurred in 1963 when a sharp rise in the world price of sugar and an enlarged U.S. sugar allotment to Argentina encouraged sugar exports of almost \$60,000,000. After 1963 sugar exports declined as precipitously as they had risen.

drawn up to give prospective exporters prior assurance on eligibility includes, in addition to manufactures, raw and semi-refined mining, petroleum and agricultural products, some of which are also traditional primary export items, such as washed wool and dried fruit. These were deleted from the list. Difficulties were also encountered in collating the remaining items on the list, classified according to the (NABALALC) code,^{5/} with the classification used prior to 1966 in Argentine foreign trade statistics. As a consequence some product categories had to be aggregated. Of the final reduced list of non-traditional industrial "products", 264 turned out to have been exported in at least one year during 1955-66.^{6/}

The annual dollar values of these items for 1955-66 were deflated by the relevant U. S. industry wholesale price series to 1960 constant dollars in order to eliminate the distorting effect of the rising trend of international industrial prices during this period.^{7/} Table 4 lists these constant

^{5/}NABALALC is the Spanish acronym for Brussels-LAFTA tariff nomenclature. All LAFTA countries have converted their trade statistics to NABALALC to facilitate tariff bargaining.

^{6/}Detailed summaries of the laws, decrees, lists and procedures relating to drawbacks and reintegros are given in Felix Herrero, Aspectos Legales de la Promoción Industrial en la Argentina (Buenos Aires: Instituto Torcuato Di Tella, 1965) 2nd ed., pp. 127-134, and in P.S. Palazzo, R. G. Stocker, F. A. Ibarra and R. Rivas Molina, Exportación de Productos no Tradicionales (Buenos Aires, Fundación de Investigaciones Económicas Latinoamericana, May 1967), pp. 235-312.

^{7/}1955 is the earliest year for which exports were recorded in the foreign trade yearbooks both in dollars and pesos, while 1966 was the most recent year for which a detailed export product breakdown was available at the time this study was undertaken.

dollar export totals and also separates the totals into Type I and Type II exports and into three groups by destination: border countries, LAFTA countries and the rest of the world.^{8/} Type I exports are those eligible to receive a reintegro equal to 12 per cent of the export price, while Type II were those eligible for a flat 18 per cent reintegro. Since the 18 per cent reintegro was allegedly granted by the Secretary of Commerce to products which incorporate a substantially higher degree of processing or value added than the 12 per cent products,^{9/} it seemed useful to test also whether the two-product types responded differently to the various stimuli.

Table 4 shows that the sharp increase in non-traditional industrial exports after 1962 was shared by all three sub-categories of countries and

^{8/}The border countries are Bolivia, Chile, Paraguay and Uruguay. The border and LAFTA sub-totals overlap since all but Bolivia were also members of LAFTA in the period 1962-66.

^{9/}There is also a third group of products eligible for only a 6 per cent reintegro. This group, however, consists of either crude mining products or long-standing agricultural exports like washed wool and dried fruit involving a small degree of industrial processing, and was, therefore, as indicated in the text, excluded from our reduced final list.

The purpose of assigning flat subsidy rates was to give the prospective exporter more precise information on the size of his subsidy as well as to reduce bureaucratic complications in distributing the reimbursements. Evidently, the value added criterion for assigning products 12 or 18 per cent reintegros was applied loosely, with ad hoc modifications made in response to business pressures. Thus when the list was issued the accompanying press release stated that "an effort was made to include the largest number of products possible within the 18 per cent category and that the Secretary regretted not being able to satisfy the petitions of some exporters for a 24 per cent reintegro, since the Decreto 6671/63 authorized only an 18 per cent maximum." Herrero, *op. cit.*, p. 134.

both types of products. The share of the border countries held more or less constant at 28 per cent, the share of LAFTA, as might be expected, rose from 42 per cent in 1955-62 to 49 per cent in 1963-66, while the share of the rest of the world fell from 58 to 51 per cent. Type II exports rose more rapidly than Type I to all three groups of countries, but despite the emphasis in LAFTA bargaining sessions on expanding regional trade in sophisticated manufactures, LAFTA's share of Type II exports fell somewhat between 1955-62 and 1963-66, from 74 per cent to 59 per cent.

Another characteristic of Argentine non-traditional industrial exporting, the tendency for many of the export items to be exported in miniscule quantities, is brought out by Table 5. Well over half of both Type I and Type II items averaged under \$10,000 per annum during 1955-62 (in 1960 prices), and the proportion dropped only moderately despite the upsurge after 1962 in non-traditional exporting. Mini-exporting was highest in border trade, which involved virtually the full gamut of non-traditional items but with around 90 per cent of the items exported in annual quantities of under \$100,000. This reflects Argentina's role as "country store" to its neighbors. Although the largest and most diversified industrial country in the "Southern Cone," Argentina is also a high-cost producer. Proximity has made it a minor fill-in source of a wide range of industrial products to its neighbors, but Argentina's share of their annual manufacturing imports has been negligible except during World War II years.^{10/} Even during the 1963-66 upsurge Argentina still supplied little more than 5 per cent of the total industrial imports of the Border countries.

^{10/}Wartime trade with border and other Latin-American countries accounts for most of the very large but evanescent rise in Diverse Manufactures for 1941-45 shown in Table I.

Table 5
Annual Percentage Distribution of Non-Traditional Export Items
 By Size, ^(a) 1955 - 66

<u>Export Type and Destination</u>	<u>Under \$10,000</u>	<u>\$10,000 to</u> <u>\$100,000</u>	<u>\$100,000 to</u> <u>\$500,000</u>		<u>\$500,000</u> <u>to</u> <u>\$2,000,000</u>	<u>Over</u> <u>\$2,000,000</u>	<u>Average</u> <u>Number of</u> <u>All Items</u> ^(b)
			<u>(percentages)</u>				
<u>Type I</u>							
A. Border Countries							
1) 1955-62	65.5	28.9	5.1	0.5	-	67	
2) 1963-66	59.6	29.8	8.8	1.2	0.6	82	
B. LAFTA							
1) 1955-62	58.5	8.3	25.4	3.9	3.9	67	
2) 1963-66	49.6	12.4	24.5	4.9	8.6	87	
C. Rest of World							
1) 1955-62	51.7	12.2	22.3	6.9	6.9	67	
2) 1963-66	46.0	9.4	24.1	12.3	8.2	85	
D. All Countries							
1) 1955-62	51.9	9.0	12.0	20.3	6.8	68	
2) 1963-66	44.9	15.4	11.8	18.8	9.0	89	
<u>Type II</u>							
A. Border Countries							
1) 1955-62	62.2	31.3	5.2	1.3	-	114	
2) 1963-66	46.3	36.5	12.4	4.8	-	149	
B. LAFTA							
1) 1955-62	61.0	2.5	30.1	1.1	5.3	114	
2) 1963-66	44.8	6.7	32.0	4.2	12.3	149	
C. Rest of World							
1) 1955-62	55.7	7.1	26.9	5.7	4.7	114	
2) 1963-66	44.0	7.9	25.4	12.1	10.6	142	
D. All Countries							
1) 1955-62	56.2	5.5	7.0	25.6	5.7	114	
2) 1963-66	45.5	8.5	9.2	26.2	10.5	150	

(a) Value of each item in U. S. dollars at 1960 prices

(b) "Items" are NABALALC 4-digit categories or aggregates, thereof, as described in text

Source: Same as Table 4

To assess the relative importance of devaluation plus export subsidies, industrial recession, and LAFTA in impelling the rise of non-traditional industrial exporting in the 1960s, the annual export series in Table 4 were regressed on indices approximating the three hypothesized causal variables. The general form of the estimating equations was:

$$Y = a + bX_1 + cX_2 + dX_3, \text{ where}$$

Y = annual deflated non-traditional exports in various groupings.

X_1 = the annual "real" exchange rate, i.e., the nominal exchange rate adjusted upward for reintegro and drawback subsidies and deflated by the Argentine industrial price index relevant for the particular non-traditional export group.

X_2 = the annual rate of utilization of industrial capacity for the industry or group of industries corresponding to the export group.

X_3 = a dummy variable to represent the impact of LAFTA. Its value is 0 for the years 1955-61 and, 1, 2, 3, 4, 5, respectively, for the ensuing five years.

The annual "real" exchange rates and excess capacity rates used in the various regressions are given in Table 6, Appendix B. The derivation of these rates is described in Appendix A.

The LAFTA dummy, X_3 , was included in regressions of exports to all countries and to LAFTA, but not in export regressions to the "rest of the world". The regressions were computed alternatively, with all variables unlagged and with X_1 and X_2 lagged one year. The lagged form makes much more behavioral sense, since one would expect current exports recorded at customs to be the result of prior decisions guided to a considerable degree by parameters prevailing in the prior time period. This assumption was fully borne out by the regressions. Even though the data covered only 12 years and the regressions

contained up to 3 independent variables plus a constant, dropping a degree of freedom by lagging proved to be reassuring rather than traumatic. All of the lagged regressions gave better fits than the unlagged regressions, and the exchange rate coefficient, often negative in the unlagged regressions, was almost always positive in the lagged versions.

Table 7-A summarizes the results of the lagged regressions for the more aggregative groupings of exports, while 7-B presents the same regressions for log transformations of the variables.^{11/} Comparing the two tables, it can be seen that differences in results between the unlogged and logged regressions are minor. In some cases slightly higher corrected R^2 and F and t values were obtained with the log transformation, suggesting a slight curvilinearity of the original data. In other cases the unlogged regression gave a somewhat better fit, suggesting that the original data were linear for the period covered. Given the crudity of the proxies for the independent variables drawing deep implications from the small differences is unwarranted.

The most interesting findings are the unimportance of the exchange rate and the importance of excess capacity in explaining export variance. The sign of the exchange rate is always positive, as per a priori expectations, but it is insignificant at the 5 per cent confidence interval in all cases except for the log regression of Type II exports to LAFTA, and this

^{11/}The dummy variable with its 0 values could not, of course, be logged. Since the dummy in the log regressions kept its natural number values, the dummy implies a constant rate of increase in LAFTA trade after 1961 in the log regressions and a constant absolute increment in the unlogged regressions.

Table 7-A

Regression of Non-Traditional Export Aggregates
with X_1 and X_2 lagged one year

Export Type	Coefficient Values				Corrected R^2	F-Ratio
	<u>b</u>	<u>c</u>	<u>d</u>	<u>a</u>		
<u>Combine I + II</u>						
1. To all countries	219.87 (1.65)	-1357.19* (-2.98)	93,536.80* (5.18)	95,787.0	0.892	31.49
2. To LAFTA	69.94 (1.37)	-341.00 (-1.96)	61,902.91* (8.96)	251,772.9	0.947	67.20
3. To Rest of World	59.46 (0.49)	-1427.67* (-3.73)		110,126.38	0.569	8.77
<u>Type I</u>						
1. To all countries	84.82 (1.05)	-1586.83 (-1.01)	25,080.11* (4.68)	318,268.3	0.780	14.30
2. To LAFTA	3.96 (0.09)	56.44 (0.27)	25,492.72* (5.04)	-10,838.5	0.782	14.47
3. To Rest of World	35.22 (0.45)	-763.17 (-1.93)		571,764.3	0.206	2.93
<u>Type II</u>						
1. To all countries	112.93 (1.16)	-612.72* (-3.37)	49,512.25* (4.11)	443,566.3	0.893	32.01
2. To LAFTA	56.83 (1.23)	-204.58* (2.37)	36,248.79* (6.33)	154,463.4	0.927	47.84
3. To Rest of World	3.02 (0.15)	-536.14* (5.17)		44,169.3	0.717	15.45

Notes: b = the exchange rate coefficient

c = the capacity utilization coefficient

d = the LAFTA dummy

a = the constant term

Numbers in parentheses are t - values, starred coefficients are significant to at least the 5% confidence interval.

Table 7-B

Results of Log Regressions for Various Non-Traditional
Export Aggregates, with $X_1 + X_2$ lagged one year

<u>Category of Exports</u>	<u>Coefficient Values</u>					
	<u>b</u>	<u>c</u>	<u>d</u>	<u>Constant</u>	<u>Corrected R²</u>	<u>F-Ratio</u>
<u>Combined Types I and II</u>						
1. To all countries	0.474 (1.65)	-2.96* (-2.94)	0.249* (4.95)	24.03	0.848	30.47
2. To LAFTA	0.518 (1.57)	-2.490* (2.79)	0.317* (5.52)	24.06	0.902	35.04
3. To rest of world	-0.006 (0.01)	-4.021* (3.36)	-	38.16	0.509	7.20
<u>Type I</u>						
1. To all countries	0.316 (0.82)	-0.894 (0.64)	0.220* (3.79)	15.40	0.689	9.44
2. To LAFTA	0.067 (0.09)	-0.156 (-0.06)	0.354* (3.22)	10.84	0.605	6.95
3. To rest of world	0.046 (0.10)	-2.833 (1.74)		29.61	0.159	2.54
<u>Type II</u>						
1. To all countries	1.126 (2.84)	-2.395* (-3.82)	0.356* (5.59)	19.38	0.926	47.39
2. To LAFTA	1.240* (2.40)	-1.901* (-2.33)	+0.370* (4.46)	14.94	0.864	24.70
3. To rest of world	0.235 (0.25)	-5.451* (4.15)		47.81	0.599	9.72

Note: b - the exchange rate coefficient
c - the capacity utilization coefficient
d - the LAFTA dummy

Numbers in parentheses are t-values. Starred coefficients are significant to at least the 5% confidence interval.

exception is compromised by the fact that in the unlogged version of the same regression the exchange rate is insignificant. On the other hand, the capacity utilization variable not only has the expected negative sign but is also significant for all regressions except those for Type I exports. The LAFTA dummy is also significant in all the regressions and picks up most of the variance in the unlogged regressions. This is no major breakthrough, of course. The dummy merely picks up trend, which was virtually horizontal during 1955-61 but rising in 1962-66.

The Type I and II separation yielded only mixed support for one of my a priori expectations. I had expected that Type I exports would be more responsive to real exchange rate movements and less responsive to rate of capacity utilization changes than Type II exports. This expectation was based on premise that Type I exports with their lower value added were also probably less import intensive and more labor intensive than Type II products. Devaluation, which in Argentina lowers real wages while raising the cost of imported materials, should therefore increase the margin of export price over cost of production more for Type I than for Type II. In addition, the fact that Type I exports, being less highly processed, could be sold in more standardized foreign markets and required, therefore, fewer risky outlays on marketing and product differentiation than Type II products, was also expected to increase the price responsiveness of Type I exports. In other words, it was assumed that Argentina's comparative disadvantage was likely to be less for Type I than for Type II industrial products.

The regressions only partly support these expectations. Type II exports responded strongly to changes in excess capacity as expected, while Type I exports did not, but neither type responded significantly to exchange rate changes.

The partial elasticities listed in Table 8 buttress these mixed findings. The partial elasticity of exports to excess capacity ranges from -1.4 to -6.2, with Type II showing substantially higher elasticities than Type I. However, the partial elasticities of exports on the exchange rate, while they range from near zero to a high of only 0.55, are generally somewhat higher for Type II than for Type I. As indicated in Table 8, many of these elasticities relate to statistically insignificant coefficients but the consistent tendencies they manifest for each type are in the aggregate unlikely to have been the result of mere chance occurrences.

The two main findings of the aggregative regressions were explored further by means of industry regressions. Table 9, Appendix B, lists non-traditional industrial exports for 1955-66 by 13 two-digit industries. Each industry's exports to all countries, LAFTA and "rest of the world" regions, respectively, were regressed on that industry's "real" exchange and per cent of capacity utilization series recorded in Table 6, and, in the case of all country and LAFTA groupings, on the all-purpose LAFTA dummy. Type I and II exports were, however, combined in the industry regressions since with the combined annual exports for six of the thirteen industries averaging under \$500,000, separate regressions by type seemed unwarranted. Wood products, in fact, was dropped entirely from the industry regression effort because of ultra mini-exporting.^{12/} For the remaining twelve industries regressions were carried out with the data in natural numbers and in log transforms. Again there wasn't much to choose between the two. In each form, 27 of the 36 regressions were significant at the 5 per cent confidence interval (by

^{12/} There were no exports of wood products in 1955-57, and the annual average for 1958-66 was only around \$100,000.

Table 8

Mean Partial Elasticities of Non-Traditional Exports with Respect to the Exchange Rates, Excess Capacity and LAFTA^(a)

<u>Export Category</u>	<u>Exchange Rate</u>	<u>Excess Capacity</u>	<u>LAFTA Dummy Variable</u>
<u>Combined I + II Types</u>			
A. To all countries	0.513 (0.474)	-2.545* (-2.296)*	0.355* (0.249)*
B. To LAFTA	0.353 (0.518)	-1.381 (-2.490)*	0.508* (0.317)*
C. To Rest of World	0.014 (0.01)	-2.678* (-4.021)*	
<u>Type I</u>			
A. To all countries	0.376 (0.316)	-1.412 (-0.894)	0.310* (0.220)*
B. To LAFTA	0.055 (0.067)	-0.549 (-0.156)	0.558* (0.354)*
C. To Rest of World	0.023 (0.046)	-3.587 (-2.833)	
<u>Type II</u>			
A. To all countries	0.551 (1.126)*	-2.653* (-2.395)*	0.409* (0.356)*
B. To LAFTA	0.441 (1.240)*	-1.410* (-1.901)*	0.476* (0.370)*
C. To Rest of World	0.397 (0.235)	-6.273* (-5.451)*	

* -- regression coefficient significant at 5% level

(a) Numbers in parentheses are elasticities from the log regressions, those without parentheses are computed at the mean of the non-log regressions.

F-test for the multiple regression). To conserve space, Table 10 lists only the 27 significant log regressions, since the partial elasticities can be read off directly from these regressions.

On the basis of the democratic principle of one regression-one vote, Table 10 provides only modest additional support for the previously stated finding that Argentine non-traditional industrial exporting responded fairly strongly to changes in excess capacity but not to changes in the exchange rate. However, if the votes are weighted by relative volume of exports in each regression, the support is substantially strengthened. Deviations from the two findings occur mainly for regressions involving relatively small annual export flows. This can be seen in Table 10, where the corresponding annual exports of the high years, 1963-66, are given with each regression.

More specifically, of the 27 exchange rate coefficients, 4 have the "wrong" sign (-), while only 10 have both the "right" sign and are statistically significant. Of the 10, moreover, only 4 relate to annual export flows which exceeded \$500,000 in 1963-66: Printing and Publishing and Electric Machinery and Equipment exports to all areas and to LAFTA. Of the 27 capacity utilization coefficients, 6 have the "wrong" sign (+), of which two, Leather Products and Stone, Glass and Ceramics products to LAFTA, are statistically significant. Both, however, are factually insignificant, with annual export flows of \$90,000 and \$224,000 respectively in 1963-66. On the other hand, of the 21 capacity utilization coefficients with "correct" signs, 12 are statistically significant and 10 of these involve annual export flows in 1963-66 ranging from \$850,000 to over \$13,000,000.

The partial elasticities of capacity utilization also run considerably higher than those of the exchange rate, the first ranging from -0.39 to -19.20

Table 10

Statistically Significant^(a) Log Regressions of Non-Traditional Industrial Exports
by Industry, Exchange and Capital Utilization Rates Lagged One Year

<u>Exports by Industry</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>a</u>	<u>Corrected</u> <u>R²</u>	<u>Corresponding</u> <u>Annual</u> <u>Volume</u> <u>1963 - 66</u> <u>(\$1000. in 1960</u> <u>prices)</u>
A. <u>Food and Beverages</u>						
a) To LAFTA	-1.675 (1.39)	5.749 (2.01)	0.272* (2.62)	-19.31	.418	3,062
B. <u>Textiles</u>						
a) To all areas	-0.146 (0.21)	-5.644* (3.39)	-0.308* (2.63)	48.10	.442	2,328
C. <u>Clothing</u>						
a) To rest of world	-2.381 (1.14)	-6.135* (2.88)		58.45	.419	295
D. <u>Printing and Publishing</u>						
a) To all areas	1.358* (3.20)	-6.564* (6.07)	0.685* (12.84)	45.23	.974	8,039
b) To LAFTA	1.538* (3.21)	-5.849* (4.79)	0.643* (10.60)	39.55	.962	5,282
c) To rest of world	0.917 (0.34)	-19.203* (3.27)		137.01	.412	2,757

Table 10
page 2

<u>Exports by Industry</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>a</u>	<u>Corrected R²</u>	<u>Corresponding Annual Volume 1963 - 66 (\$1000 in 1960 prices)</u>
<u>E. Leather Products</u>						
a) To LAFTA	2.341 (1.64)	13.165* (3.29)	0.877* (2.97)	-94.77	.483	90
b) To rest of world	0.227 (0.50)	-3.335* (4.05)		29.92	.549	858
<u>F. Paper and paper board</u>						
a) To all areas	5.930* (4.56)	-2.596 (1.24)	0.432* (2.87)	3.00	.726	304
b) To LAFTA	6.040* (4.46)	-2.343 (1.08)	0.391* (2.50)	-5.20	.694	224
<u>G. Chemical Products</u>						
a) To all areas	0.491 (1.94)	-1.045 (1.34)	0.252* (5.17)	15.22	.877	10,242
b) To LAFTA	0.555 (1.17)	-1.209 (0.86)	0.294* (3.23)	15.19	.718	5,257
c) To rest of world	0.468 (1.08)	-3.393* (3.75)		30.60	.518	4,985
<u>H. Rubber Products</u>						
a) To all areas	3.126* (4.18)	-0.386 (0.39)	0.376* (5.10)	-5.22	.739	224
b) To LAFTA	0.798 (0.68)	-0.895 (0.58)	0.511* (4.44)	7.78	.631	183

Table 10
page 3

<u>Exports by Industry</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>a</u>	<u>Corrected</u> <u>R²</u>	<u>Corresponding</u> <u>Annual</u> <u>Volume</u> <u>1963 - 66</u> <u>(\$1000 in 1960</u> <u>prices)</u>
<u>I. Stone, Glass, Ceramics</u>						
a) To all areas	1.682* (3.64)	2.317 (1.91)	0.204* (3.85)	-15.16	.685	345
b) To LAFTA	1.509* (2.61)	3.570* (2.34)	0.194* (2.93)	-22.68	.580	282
c) To rest of world	1.567 (1.05)	-12.773* (3.34)		81.33	.427	63
<u>J. Metals and Metal Products</u>						
a) To all areas	0.246 (0.28)	-4.161* (2.94)	0.383* (2.78)	35.03	.698	13,221
b) To LAFTA	0.147 (0.18)	-2.835 (2.15)	0.315* (2.45)	26.86	.577	6,368
c) To rest of world	-0.422 (0.18)	-12.736* (3.73)		90.67	.498	6,853
<u>K. Non-Electric Machinery and Vehicles</u>						
a) To all areas	0.622 (1.09)	-2.301* (2.38)	0.466* (3.83)	21.79	.885	11,368
b) To LAFTA	0.587 (1.10)	-2.052 (2.12)	0.423* (3.71)	-20.17	.876	8,048
c) To rest of world	0.375 (0.26)	-8.073* (4.83)		59.58	.660	3,320

<u>Exports by Industry</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>a</u>	<u>Corrected R²</u>	<u>Corresponding Annual Volume 1963 - 66 (\$1000 in 1960 prices)</u>
L. <u>Electrical Machinery and Equipment</u>						
a) To all areas	2.419* (8.44)	0.624 (1.12)	0.204* (3.32)	-5.33	.903	2,667
b) To LAFTA	1.837* (3.77)	-0.649 (0.68)	0.211 (2.01)	5.03	.751	2,199
c) To rest of world	3.540* (3.91)	1.384 (1.05)		16.50	.530	467

(a) Regression equations significant to at least the 5% confidence interval. Numbers in parentheses are t-values. Starred coefficients are significant to at least the 5% confidence interval.

b = "real" exchange rate coefficient

c = capacity utilization coefficient

d = LAFTA dummy coefficient

a = Constant term

Data Sources: Tables 6 and 9.

and the second from 0.15 to 5.93. Only 3 exchange rate elasticities with correct signs were over 3.0, all relating to export flows below \$500,000, while 11 capacity utilization elasticities with correct signs were over 3.0, the export flows of 9 of these ranging from \$850,000 to over \$13,000,000.

The regressions also indicate that the exchange rate was least important and capacity utilization most important for the "rest of the world" trade. Of the ten significant exchange rate coefficients only one relates to rest of the world exports, whereas of the 12 significant capacity utilization coefficients, 7 relate to non-LAFTA exports. These seven non-LAFTA exports also have unusually high partial elasticities with respect to the capacity utilization rate. The implication is that it takes more "push" from depressed home markets to move Argentine industrialists into exporting to the more competitive "rest of the world" markets than it takes to stimulate them to hunt for LAFTA customers.

As for the anomalies in the regression results, some have a reasonable explanation which reduces their contradictory implications. For example, the smaller the export volume the more likely is it that adventitious factors will strongly influence the results. Many of the anomalies relate to small export flows. In the case of food and beverages, however, export flows were relatively large and the positive sign of the capacity utilization coefficient probably does represent true persistent differences between the determinants of excess capacity in food and beverages and in the other industries. The items under food and beverage exports are chiefly canned fruits, vegetables and juices, hard cheeses, canned and powdered milk, and processed meat products (excluding corned beef). For such products, whose low costs and standardized characteristics make them relatively easy to export, variations

in the rate of capacity utilization are likely to be determined more by variations in the production of the main agricultural ingredients, rather than by fluctuations in home market demand.^{14/}

Some anomalies, however, have no simple explanation. There is no good general reason why Electrical Machinery and Equipment exports should have different coefficient signs than Non-Electrical Machinery and Vehicle exports. A twelve-year observation period is evidently too short to permit more than a rough statistical separation of random from persistent factors affecting the export flows.

The plausibility of the findings, however, is also strengthened by the fact that the relatively high value added Type II exports expanded considerably more than did Type I exports. In a recent study Hal B. Lary has shown that value added per employee is a fairly good index of factor intensity, the higher an industry's value added in relation to the national industrial average, the higher is likely to be its relative capital intensity.^{15/} Type II exports are thus probably more capital intensive than Type I. Since it is generally accepted that Argentina's capital intensive industries are at the higher end of the Argentine comparative cost range, the more rapid

^{14/} For example, a recent analysis of the Argentine cheese industry found that while capacity utilization of cheese processing plants was quite low, this was due to seasonal and annual variations in the output of milk and was not influenced in any significant degree by demand variations. See Fundación de Investigaciones Económicas Latinoamericanas, La Industria del Queso en la Argentina (Buenos Aires, 1966) 95 pp.

^{15/} Imports of Manufactures from Less Developed Countries (New York: National Bureau of Economic Research, 1958). 286 pp.

expansion of Type II products was most likely a response to other factors than improvements in the ratio of external to domestic prices and costs within the industrial sector.

Since Types I and II are very broad aggregates, the analysis of the factor intensity of non-traditional industrial exports, using value added as a proxy, was also pursued at the industry level of disaggregation, both with the industry categories of Tables 8-10 and with a finer breakdown as well. Before reporting the results, a more detailed description of the Lary value added approach seems called for.

Lary's approach stems from two a priori hypotheses. The first is that despite labor market imperfections, wage differentials correlate broadly with differences in skill levels. The average wage will therefore be higher in industries requiring more human capital per worker. The second is that non-wage value added per employee per industry should correlate positively with physical capital per worker per industry because the incidence of monopoly and other distortions is distributed with sufficient randomness across industries as not to block the relative factor intensity effects from shining through statistically. Total value added per worker by industry should, therefore, correlate with capital intensity per worker by industry, capital in this case including both human and physical capital. Using human and physical capital per worker estimates for a disaggregated range of U. S. industries, Lary gets moderately high and strongly significant correlation coefficients ($r = 0.80$) for both wages and human capital and non-wages and physical capital. His correlation between non-wage value added per employee and physical capital per employee for Indian industries is also of about the same r -value. Lary then correlates U. S. arrays of total value added,

wage and non-wage value added per employee with the same arrays for British, Japanese and Indian industry and finds that the three U. S. arrays correlate reasonably well with those of the first two countries, and, after deleting some extreme deviations, with those of India. From this he draws two general conclusions: (1) relative value added per employee is a reliable proxy for relative capital intensity, and (2) there is little evidence of factor reversals between high and low wage countries.^{16/} What's capital intensive for General Motors USA is capital intensive for General Motors do Brasil.

Our first step was to see whether it was also capital intensive for General Motors Argentina S.A. The value added ratios of 64 U.S. industries were correlated with their Argentine counterparts.^{17/} The results given in Table 11, along with Lary's correlations with the U.K., Japan and India, are rather odd. The total value added correlation with Argentina is quite high; that for wage-value added is respectable, but that for non-wage value added is not significant.^{18/}

Correlating 1963 and 1953 value added for a sample of 90 Argentine industries merely thickened the plot. The results, reported in Table 12,

^{16/}For details see Lary, op. cit., Chapters 2 and 3.

^{17/}The Lary table from which the U.S. data is taken contains 102 industries listed by U.S.-S.I.C. code. Collating problems with the ISIC code used by Argentina required aggregating some of the industries. Also some Argentine industries which were mainly repair activities, were deleted. Aggregation and deletion resulted in a reduced list of 64 comparable industries.

^{18/}The non-wage correlation in logs is 0.235 and barely significant at the 5 per cent level.

Table 11

Coefficients of Correlations of Value Added, Wage Value Added, and Non-Wage Value Added per Employee of U.S. with Argentina and Other Selected Countries

<u>Countries Compared and Year of Census</u>	<u>Number of Industries in Correlation</u>	<u>Value Added per Employee</u>		
		<u>Total</u>	<u>Wage</u>	<u>Other</u>
U.S. (1965) and Argentina (1963)	64	0.839	0.699	0.171 ^(a)
U.S. (1958) and U.K. (1958)	103	0.882	0.849	0.855
U.S. (1962) and Japan (1962)	178	0.753	0.778	0.690
1) Excluding 9 extreme observations	169	0.806	0.782	0.743
U.S. (1963) India (1961)	117	0.600	0.494	0.599
1) Excluding industries under 2000 employment	83	0.634	0.553	0.658
2) Excluding also 7 extreme observations	76	0.786	0.518	0.785

(a) Not statistically significant

NOTE: U.S. correlations with U.K., Japan and India are between the logs of dollar value added per employee for the various countries. The U.S.-Argentine correlations are between unlogged ratios of industry value added to the national industrial average of each of the two countries.

Sources: U.S. correlation with U.K., Japan and India taken directly from Hal B. Lary, Import of Manufactures from Less Developed Countries, p. 75, Table 6. U.S.-Argentine correlation computed from U.S. data in Lary, op. cit., pp. 24-29, Table 2, and Dirección Nacional de Estadística y Censos, Censo Nacional Económico: Industria Manufacturera, 1963 (Buenos Aires, 1968).

Table 12

Coefficients of Correlation of Value Added, Wage Value Added and Non-Wage Value Added Per Employee for Argentine Industry 1963 and 1953^(a)

	<u>r (b)</u>	<u>r without 5 extreme observations (b)</u>
I	<u>1953 with 1963</u>	
A.	Total value added	.801 .870
B.	Wage value added	.309 .558
C.	Non-wage value added	.838 .864
II	<u>Intra 1953</u>	
A.	Total value added with wage	.432 .460
B.	Total value added with non-wage	.972 .994
C.	Wage with non-wage	.214 .363
III	<u>Intra-1963</u>	
A.	Total value added with wage	.677 .692
B.	Total value added with non-wage	.977 .997
C.	Wage with non-wage	.622 .642

a) 90 industries in the sample

b) Correlations under I are significant to 1% confidence interval. Those for II and III were obtained as by-product, through the correlation matrix of the computer program. All but II-C are probably statistically significant at the 1% confidence level.

Sources: Dirección Nacional de Estadística y Censos, Censo Nacional Económico: Industria Manufacturera, 1963 (Buenos Aires, 1968) and Censo Industrial 1954 (Buenos Aires, 1958).

show that total value added and non-wage value added per employee were highly correlated between the two years, but that wage value added per employee was not. Intra-1953 and 1963 regressions compound the perplexity; wage-value added correlates poorly with the other value added variables in 1953, but moderately well in 1963. In all, the intra-Argentine correlations strongly suggest that total value added per employee is a better measure of physical than of human capital intensity in Argentina. Yet this does not explain why U.S. and Argentine non-wage value added per employee correlate so much more poorly than wage-value added in the 1960s.^{19/} Removing 5 extreme observations from the sample raises all the correlations but doesn't change the pattern much. The fairly high total value added correlations thus provide a rough basis for classifying Argentine industries by relative capital intensity, but only by invoking the BTN theorem^{20/} to overcome reservations which the contradictory correlation patterns raise.

Table 13 gives the annual non-traditional exports for 1963-66, their ratio to 1963 output, and the value added index of each of the 13 two-digit industries. Two main conclusions are indicated. The first is that 59 per cent of non-traditional industrial exports in 1963-66 came from the six relatively capital intensive industries, that is, from industries with higher than average value added per employee. The second is that non-traditional exporting was a very minor outlet for all but one of the 13 industries, Printing and Publishing.

^{19/}Part II presents evidence that Argentine pricing patterns may explain much of the poor correlation.

^{20/}The BTN (Better Than Nothing) theorem was first developed by B.T. Nemesio, a Neapolitan logic chopper, during his honeymoon trip. There are no Argentine capital stock estimates by industry, either reliable ones or the standard kind, by which to estimate capital intensity directly.

Table 13

1963 Output, Value Added per Employee and Annual Non-Traditional Exports of Argentine Industries

<u>Industry</u>	<u>1963 Output</u> (millions of pesos at 1963 prices)	<u>Annual Non- Traditional Exports, 1963- 1966</u>	<u>Ratio of Exports to 1963 Output</u>	<u>Index of Value Added per Person 1963</u> (Industry Average=100)
Food and Beverage	325,268	2,121	.0065	91.7
Textiles	124,163	349	.0028	91.8
Clothing	47,268	62	.0013	69.6
Furniture and Wood Products	25,539	16	.0006	38.9
Printing and Publishing	22,993	1,206	.0524	66.4
Leather Products (including leather shoes)	17,298	142	.0008	73.7
Paper and Paper Board	26,594	46	.0002	149.1
Chemicals	89,520	1,536	.0172	157.5
Rubber Products	21,197	34	.0002	137.0
Stone, Glass, Ceramics	35,926	52	.0001	72.4
Metal and Metal Products	111,744	1,983	.0177	114.8
Non-Electric Machinery and Vehicles	172,523	1,705	.0099	101.0
Electric Machinery and Equipment	<u>35,854</u>	<u>400</u>	<u>.0112</u>	147.9
Total	1,078,953	9,639	.0089	

Sources: 1963 Census of Manufactures and Tables 6 and 9

The ratio of exports to output was 0.65% for the seven industries with below average value added per employee and 1.24% for the six above average industries.

The same relationships were also sought at a more disaggregated level -- that of 5-digit ISIC industries. The procedure was first to select all non-traditional export "items"^{21/} which (1) averaged over \$100,000 per annum during 1963-66 and (2) exceeded \$100,000 in at least three of those years. The purpose of this procedure was to eliminate miniscule items, of which there were a great many, and one or two-shot larger items, of which there were also a fair number. Forty-four items out of the total of 264 met both criteria. The 44, however, accounted for 81 per cent of all non-traditional industrial exports during 1963-66. The 44 items were then matched to the thirty-two 5-digit ISIC industries which produced the 44 items. A similar processing was done on exports to the "rest of the world". Only 19 items met both criteria and these collated with sixteen 5-digit industries. Finally, the value added per employee was obtained for each of the industries.

Charts I and II, which graph the results, show a very similar pattern. In both cases well over half the values of the 44 substantial export items came from relatively capital intensive industries. Specifically, 59 per cent of the exports to all areas came from industries whose value added per employee was above the average for the Argentine industrial sector by 20 per cent or more, while only 32 per cent came from industries whose value added per employee was below the industry average by at least 20 per cent. Similarly, 61 per cent of

^{21/} As noted previously, an export item is a 4-digit NABALALC code category, or in some cases, the sum of 2 or more of such categories.

Chart I

Factor Intensity of Leading Argentine Non-Traditional Industrial Exports
by ISIC 5-digit Industry, 1963-1966

Annual Exports Millions of U.S. dollars (1960 prices)

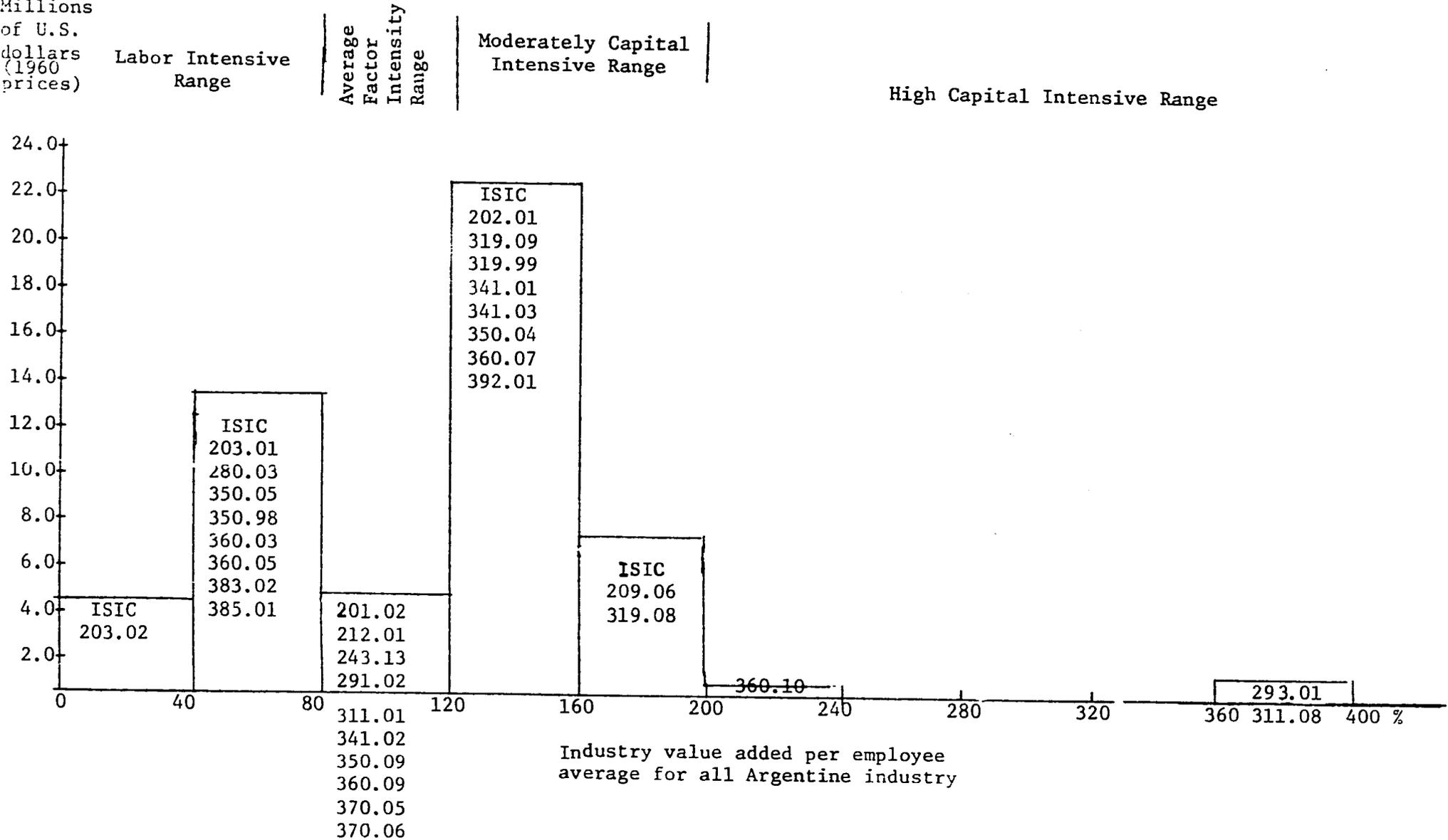
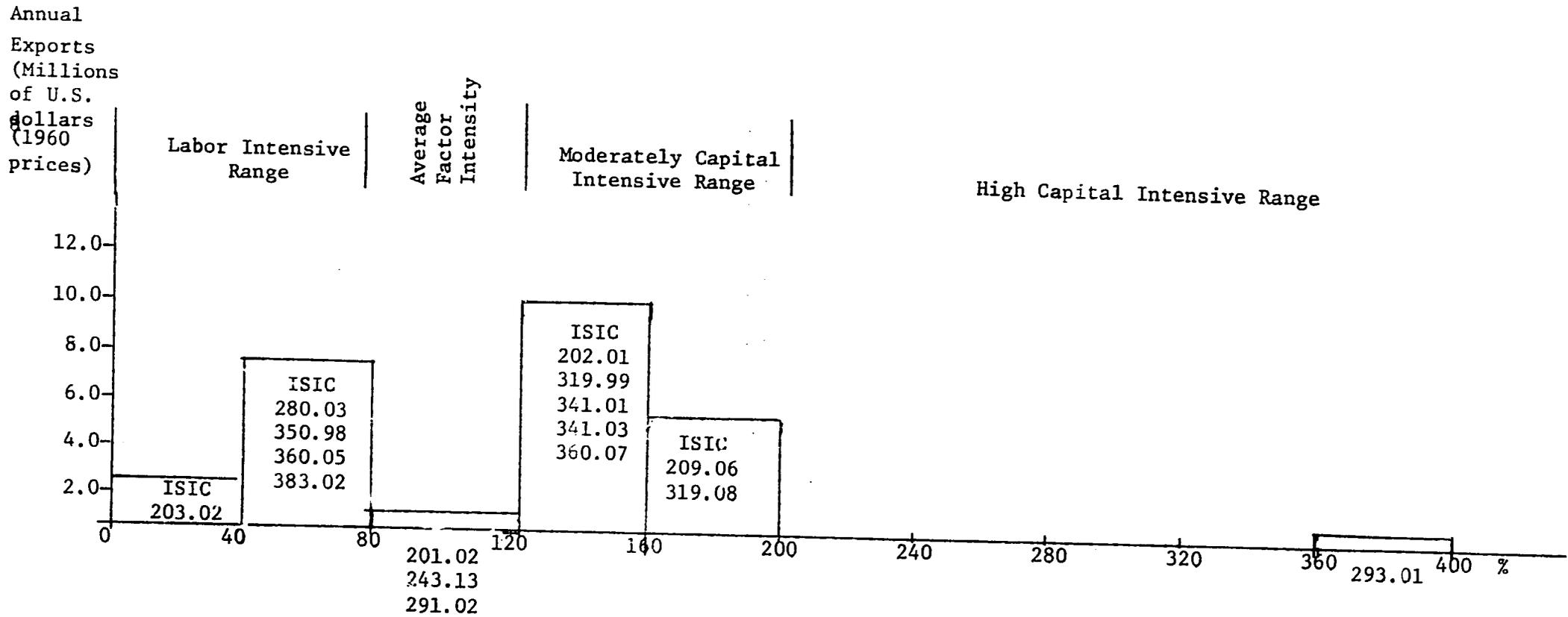


Chart II

Factor Intensity of Leading Argentine Non-Traditional Industrial Exports
by ISIC 5-digit Industry, 1963-1966 to Non-LAFTA Countries



Industry value added per employee (average for all Argentine industry = 100)

"rest of the world" exports came from the capital intensive portion and only 34 per cent from the labor intensive portion of the Argentine industry array.

Table 14 gives the ratio of these more substantial export items to the 1963 output of the industries producing them. For only five of the industries, was the export market patently important, the ratio exceeding 10 per cent.^{22/} For six others, exports were a moderately important addition to domestic sales, their ratios falling in the 3 to 10 per cent range. But for the remaining twenty-one industries exporting was a minor supplement during 1963-66.

II. Exchange Policy, Industry Pricing, and the Findings

According to other studies, Argentine post-war imports have also been singularly unresponsive to changes in the ratio of external to domestic prices.^{23/} Rather imports have varied positively with changes in the level of domestic aggregate demand and negatively with the severity of import controls and with the share of wages in national income.^{24/}

Are relative prices really so uninfluential on Argentine trade flows? The first impulse of right-thinking economists would probably be to disprove

^{22/} The ratios are probably somewhat overestimated, since the denominator is 1963 output, a year when the Argentine industrial sector was suffering its worst recession of the post-war period.

^{23/} Richard Mallon observes that "no investigator has yet to my knowledge been able to discover a regression equation for import demand which turns up a coefficient of relative import prices that is statistically significant." See "Balance of Payments Adjustment in a Semi-industrialized Export Economy: the Argentine Case," paper presented at the Harvard Development Advisory Service Conference, Sorrento, Italy, September 5-12, 1968.

^{24/} Cf. Mallon, op. cit.; UNCTAD Secretariat, "Trade Projections for Argentina," op. cit., and Carlos Diaz-Alejandro, Exchange Rate Devaluation in a Semi-industrialized Economy (Cambridge: M.I.T. Press, 1965).

Table 14

Annual Non-Traditional Export to Output Ratios and Value Added
for Selected Argentine Industries ^(a)

<u>ISIC No.</u>	<u>Industry Description</u>	<u>1963 Index of Value Added per Employee</u> (Average for Industrial Sector = 100)
	<u>25 - 30 per cent</u>	
36007	Business Machines and Typewriters	133
	<u>15 - 20 per cent</u>	
20906	Prepared Animal Feed	172
	<u>10 - 15 Per cent</u>	
20302	Canned fruits, vegetables and juices	34
34102	Iron and Steel Wire	116
34103	Iron and Steel Pipe	144
	<u>5 - 10 per cent</u>	
28003	Printing and Binding	63
31999	Miscellaneous Chemicals	157
37005	Electric Hand Tools and Household Equipment	96
	<u>3 - 5 per cent</u>	
31108	Plastic Materials	365
36005	Industrial Machine Tools	86
39201	Film and Photographic Paper	162
	<u>1 - 3 per cent</u>	
20102	Meat Sausages	94
20201	Milk Products	153
20301	Jellies and Candies	65
24313	Ready to wear clothing of all types	81
29301	Leather Luggage and Harnesses	39
31908	Pharmaceutical Products	191
34101	Iron and Steel Ingots, Bars, Sheets	147
35011	Metal Tubular Structures for Construction Industry	81

Table 14
Page 2

<u>ISIC No.</u>	<u>Industry Description</u>	1963 Index of Value Added per Employee (Average for Industrial Sector = 100)
<u>(con't) 1 - 3 per cent</u>		
35098	Miscellaneous bronze and non-ferrous metal products	76
36010	Internal Combustion Engines	206
38302	Automotive Parts and Accessories	89
38501	Bicycle and motorbike parts and accessories	63
<u>Less than 1 per cent</u>		
21201	Wine	119
29102	Tanned and finished leather	94
31101	Chemical compounds: acids, bases, salts	155
31909	Soap, except toilet soap	134
35004	Non-electric stoves and heaters	123
35005	Hand Tools	74
36003	Agricultural machinery	79
36009	Refrigerators, air conditioners, washing machines	107
37006	Radio, T-V receivers, Phonographs, Telephone equipment	98

(a) Exports in each industry is the annual 1963-66 average in 1963 prices of the sum of non-traditional export items which averaged over \$100,000 in 1963-66 and which were exported in at least 3 of the 4 years. Output per industry is for 1963.

Sources: Dirección Nacional de Estadística y Censos, Anuario de Comercio Exterior, various issues, and Censo Nacional Económico: Industria Manufacturera 1963.

such heresy by impounding additional variables in caeteris paribus until a significant price effect is uncovered. Such efforts have not been successful thus far as regards imports, but there is less reason to doubt that for the rather marginal flows of non-traditional exports with their negligible repercussions on domestic product and factor prices, the quest for a significant relative price effect through adding and reshuffling variables would ultimately be crowned with success. However, while this might be theologically comforting, it would not be very interesting unless the variables impounded in caeteris paribus in the model can also be prevented by policy from swamping the pure substitution effect in the real world.

The problem in Argentina has been that the repeated devaluations, export subsidies, and the decline in real wages during 1955-66 were not able to sustain shifts in the "real" industrial exchange rate of the size which might conceivably have evoked a significant price response from non-traditional exports. Part of the failure was due to a conflict between exchange rate unification and the relative price objectives of exchange rate policy; a side effect of the dismantling of the formal multiple exchange rate system inherited from Perón has been a reduction in preferential treatment accorded non-traditional exports. But much of the difficulty also lay in the substantial capacity of the industrial sector to raise prices oligopolistically, and thus offset the impact of devaluation and export subsidies on the "real" non-traditional exchange rate. As a result, non-traditional exports were mainly responsive to changes in the level of aggregate demand and to institutional changes, e.g., LAFTA.

To elaborate. From 1952 onward Argentine economic policy has tried intermittently to stimulate agricultural output and the exporting of a larger

share of that output by elevating relative agricultural prices and by restraining real wages. During the second Perón presidency (1952-55), the means used were selective changes in the multiple exchange rate system and adjustments in price and wage controls. After the overthrow of Perón in 1955 the means shifted gradually to more global type devaluations and the removal of price and wage controls. The rate of changeover was, however, modest in 1955-58, the major shift in the means occurring after 1958. During 1955-58, the multiple rates were nominally reduced to two rates, an official rate, and a "free" rate, but in fact, some traditional exports received only the official rate, others obtained various mixes of the two rates, and non-traditional exports received the free rate.^{25/} At the beginning of 1959, however, the two rates were unified, almost all direct import controls were replaced by variable rate import surcharges, and industrial wage determination was turned over more completely to the market and industry-wide bargaining.^{26/}

The changes were moderately successful in altering some key relative prices in the intended direction, although with an enormous inflationary

^{25/}The effective rate structure in 1955-58 became almost as complex as in the Perón era, particularly toward the end of the period, as the authorities adjusted effective export and import rates to inflation by piecemeal changes in the free rate and in the various rate mixes rather than by global devaluation. Some traditional exports were also subject to export taxes in 1956-57 while other traditional exports, which had to surrender foreign exchange at "aforo" prices fixed by customs, were at times given "aforos" set below the actual export prices.

^{26/}In 1967, however, the Onganía government reinstated wage controls similar to those utilized by the Perón government in 1952-54.

accompaniment. The implicit merchandise exchange rate rose from 6.9 pesos/\$US in 1954 to 166 pesos/\$US in 1966, a 2300 per cent increase, while the implicit GDP price deflator rose by only (!) 1450 per cent. The exchange rate rise was less, however, in relation to commodity prices, since the implicit GDP deflator is heavily weighted with the price of services, many of which -- e.g., house rents and most public service rates -- lagged far behind the general price level through most of this period. Nevertheless the relative exchange rate rise helped improve internal terms of trade for agriculture; Table 15 shows that the agricultural/manufacturing price ratio in 1959-66 averaged around 18 per cent higher than the 1951-54 average. The wage objective was also realized; real industrial wage rates in 1959-66 averaged more than 4 per cent below the 1951-54 average and the wage share of national income fell over 13 per cent.

These relative price shifts, however, only partly accomplished their intended purposes. The overall growth rate of agricultural output in 1955-66 was no higher than the 1950-55 rate. On the other hand, the fall in real wages and the wage share, combined with the greater severity and frequency of post-1958 recessions, did raise the share of agricultural output exported, particularly after 1961.

Moreover, the elimination of overt multiple exchange rates at the beginning of 1959 also lowered the effective subsidy granted to non-traditional exports. During 1955-58, the percentage spread between the implicit rates on traditional and non-traditional exports ranged from around 100 per cent in 1955 to almost 150 per cent in 1958. With nominal exchange rate unification, the export rate plus drawbacks and reintegros for non-traditional exports in 1959-66 was never more than 50 per cent higher than the exchange rate less export taxes on traditional exports, and was usually considerably less. The

premium for non-traditional exports over the effective import rates for industrial materials and fuels dropped even more, ranging from a maximum of only +30 per cent on imports free of surcharges to a large negative minimum on imports subject to high surcharge rates. The reduction in effective subsidies for non-traditional exports after 1958 meant that the numerator of the "real" industrial exchange rate ratio grew less than the overall peso/dollar exchange rate and thus the price of industrial imports. This partly explains the hump-shape pattern of the "real" exchange rate series in Table 6; almost all peak in 1957 or 1958.

But the hump-shape pattern also reflects the ineffectiveness of wage policy in slowing the rise of the price denominator of the "real" exchange rate ratio. Table 15 indicates that Argentine industries were remarkably successful through most of 1955-66 not merely in raising industrial prices in excess of money wage increases but also in substantially increasing the non-wage share of industrial value added. Between the census years, 1953 and 1963, industrial value added per employed person rose by 25 per cent, while the wage-salary bill per employee fell by 10 per cent, and the wage-salary share of industrial value added fell 30 per cent.^{27/}

The increased share of non-wage value added could have resulted from factors other than higher mark-ups due to oligopoly or cartel pricing,

^{27/} The census year comparisons are facilitated by the accommodating prescience of the Argentine Statistical Office in picking depression years for carrying out industrial censuses, thereby minimizing the distorting effect of contrary phases of the business cycle on intercensal year comparisons. However, the 1963 industrial depression was deeper than the 1953 one, which probably means that the upward trend in overall and non-wage value added per employee is understated and the declining trend of the real wage bill per employee overstated.

Table 15

Trends in Relative Prices, Wages, Value Added and Relative Shares, 1951 - 1966

	<u>1951-54</u>	<u>1955-58</u> (1951-54 = 100)	<u>1959-62</u> (1951-54 = 100)	<u>1963-66</u>
I. Relative Prices				
1. $\frac{\text{Agricultural prices}^{(a)}}{\text{Manufacturing prices}^{(a)}}$	100.0	102.3	118.1	118.8
2. $\frac{\text{Manufacturing prices}^{(a)}}{\text{Industrial wages}^{(b)}}$	100.0	112.2	122.0	104.1
3. Real Industrial Wages ^(c)	100.0	110.3	97.4	94.2
<hr/>				
(per cent of national income)				
II. Wage Share ^(d)	48.9	46.1	40.9	43.7
<hr/>				
Pesos (1953 prices)				
III. Industrial Value added from 1953 and 1963 Industrial Censuses				
1. Value added per employee	34.6 (1953)			43.3 (1963)
2. Wages and salaries per employee	11.9 (1953)			10.8 (1963)
<hr/>				
(per cent of industrial value added)				
3. Wage-salary share of industrial value added	35.5 (1953)			25.0 (1963)

- (a) Wholesale price index-sub series, 1951-54, Central Bank wholesale price index. For 1955-66, National Statistical Office (DNEC) wholesale price index.
- (b) Weighted DNEC index of wages according to trade union agreements (convenios). Skilled labor index weight = 0.3, unskilled = 0.7.
- (c) DNEC weighted wage index deflated by DNEC cost of living index.
- (d) 1950-63 from the CONADE National Accounts. 1964-66 from Central Bank National Accounts.

namely from increased indirect taxes, increased capital intensity, or shifts in the output mix toward the more capital intensive industries. The published 1963 census gives no breakdown of non-wage value added, but it is unlikely that taxes accounted for any of the increase in the non-wage value added share. Taxes as a percentage of GNP fell from 19.3 per cent in 1953 to 13 per cent in 1963, and industrialists after 1955 became notoriously adept at retaining indirect taxes and social security payroll deductions for working capital, thereby reducing their real tax burden.^{28/}

Changes in output composition also seems to have contributed rather little to the rise in industry value added per employee, despite the fact that the industries in Table 16 with the above average increases in their value added ratios were also, for the most part, the relatively fast-growing industries between the census years. This was because their higher increases in output and average labor productivity was largely offset by contrary movements in inter-industry relative prices. As shown in Table 17, the weighted average ratio of value added per employee of the industrial sector is raised less than 6 per cent by using 1963 rather than 1953 output weights.^{29/}

^{28/}Every two or three years during 1955-66 the Argentine government decreed a moratorium on unpaid taxes, setting up a 3-5 year schedule for payment of accrued amounts. Since the penalty interest rates were invariably below the rate of inflation, the real tax burden was a decreasing function of the length of the repayment period.

^{29/}The low ratio of Line I in Table 17 probably reflects differences in the weights used to construct each of the two industrial price series which had to be spliced together in order to deflate 1963 industrial output. See note (a), Table 15.

Table 16

Changes in Value Added of Argentine Industries, 1953-63

<u>Industry</u>	<u>Percentage Change, 1963/1953</u>		
	<u>Value Added per employed person^a</u>	<u>Wages-Salaries per Employed person^a</u>	<u>Wages/Value Added</u>
<u>I. Above average increase in value added per employee</u>			
Paper & Paperboard	85.7	32.9	-27.9
Vehicles & Non-Electric Machinery	77.3	11.3	-36.1
Metals & Metal Products	74.6	28.1	-26.6
Rubber Products	68.1	-0.2	-40.5
Electrical Machinery & Equipment	52.8	36.3	-10.9
Chemicals & Chemical Products	37.6	8.9	-41.4
Textiles	26.9	-16.0	-33.7
<u>II. Below average increase in value added per employee</u>			
Stone, Glass & Ceramics	20.6	-25.9	-18.9
Tobacco Products	18.2	-7.4	-22.1
Food & Beverages	14.0	-27.4	-36.2
Miscellaneous Manufactures	12.0	-19.9	-28.5
Leather Products	3.7	-45.4	-47.3
Furniture and Wood Products	-6.6	-22.2	-12.2
Petroleum Refining	-8.4	-1.0	9.0
Printing & Publishing	-16.9	-9.7	-1.9
Clothing	-25.9	-64.0	-38.3

^aThe output and wage bill for 1953 is divided by the reported labor force on the censal date, July 30, 1954. Similarly the output and wage bill for 1963 is divided by the reported labor force on the censal date, April 30, 1964. The 1963 value added and wage bill for each industry was deflated to 1953 prices, using CONADE industry price series.

Table 17

Percentage Changes in Value Added Ratios of the Argentine Industrial Sector,
1953/1963, Under Various Industry Weighting Schemes

	<u>Value Added per employed person</u>	<u>Wages per employed person</u>	<u>Wages Value Added</u>
I. 1963 sector aggregates deflated by the industrial price index	25.1	-9.3	-29.6
II. Industry ratios, Table 16, weighted by relative industry shares of 1953 industrial output	26.0	-12.0	-29.9
III. Industry ratios, Table 16, weighted by relative industry shares of 1953 industrial value added	28.5	-9.2	-28.9
IV. Industry ratios, Table 16, weighted by relative industry shares of 1963 industrial output	31.9	-7.6	-29.6

Sources: Same as Tables 15 and 16.

It is thus unlikely that increased capital intensity by industry explains much of the substantial rise in non-wage value added. The absence of any correlation between changes in value added per employee and the wage/value added ratio per industry is much more consistent with a pervasive pattern of oligopoly and cartelized pricing than with changes in capital intensity under reasonably competitive pricing. Note that Group I in Table 16, whose increase in value added per employee averaged 60.5 per cent, had a drop in the wage/value added ratio of 31 per cent, while Group II industries, with an average rise in value added per employee of only 1.2 per cent, had a drop in the wage/value added ratio of 23 per cent. Moreover, if petroleum refining is excluded, the drop in the Group II ratio expands to almost 27 per cent.^{30/}

Table 16 also clears up some of the perplexities generated by the Lary type correlations of Part I. The table indicates that wage differentials probably increased substantially between 1953 and 1963 as a result of major declines in the product wage of Group I industries, most of which are relatively labor intensive, and increases in the product wage of most Group II industries. The freeing of wage determination from the egalitarian controls of the Peronist period, which allowed the inter-industry wage structure to diverge more in accordance with inter-industry labor productivity differences, resulted in a wage structure which by 1963 had moved substantially closer to the United States, viz., the respectable correlation between U. S. and Argentine wage-value added per employee in Table 11, and the lack of correlation

^{30/}The justification for excluding petroleum refining is that the industry was dominated by YPF, the government owned petroleum company. YPF was widely accused in the post-war period of employing excessing personnel for political patronage reasons. This may explain why petroleum refining is the one industry whose wage/value added ratio rose between 1953 and 1963.

between the 1953 and 1963 Argentine wage-value added shown in Table 12. On the other hand, oligopoly and cartelized pricing in a domestic market which was tightly protected against competitive imports, preserved a sort of capitalist egalitarianism. The correlation between 1953 and 1963 non-wage value added is shown by Table 12 to be quite high, whereas the non-wage correlation with that paragon of anti-egalitarian capitalist efficiency, the United States, is shown in Table 11 to have been negligible.

It must not be assumed that the 1960s, therefore, have been years of orgiastic profits for Argentine industry. Quite the contrary. Half of the period, 1961-66, was marred by industrial recession.^{31/} Excess capacity, as discussed earlier, has been more serious in the 1960s than in the preceding post-war years, and, in addition, many firms which had made excessive use of foreign supplier credits to re-equip in 1959-1962, were saddled in the 1960s with heavy foreign debts. The sustained collapse of the market for industrial shares after 1961 also suggests a deep decline of industrial profits. Indeed, a recent analysis of a sample of industrial corporations concludes that when corrected for under-depreciation, after tax profits of the sampled firms in the period 1956-64 was negative. The methodology used seems to bias the results downward,^{32/} but they support the more conservative inference that the

^{31/}1966 was also the beginning year of a mild industrial recession which has extended into 1968.

^{32/}A.P. Martigena, C.M. de Estrada, et al. Perdidas de las Empresas en un Proceso Inflacionario (Buenos Aires, Fundación de Investigaciones Económicas Latinoamericanas, May 1967). The method used in the study probably overestimates the size of the sample's capital stock and its age distribution in the initial year of the study. The use of a single deflator, the cost of living index, for all balance sheet and income statement items also probably overdeflates profits.

rise in non-wage value added between 1953 and 1963 served to merely cover increased capital charges and depreciation.

Be that as it may, the ability of Argentine industry to raise non-wage value added through oligopoly and cartel pricing not only helped to keep the "real" non-traditional export rate from rising during the 1960s, but probably also enabled many firms to survive that under more competitive conditions would probably have gone under. This is a mixed blessing for long run allocative efficiency, but it helps to explain why the conventional remedy for two-gapitis, devaluation and lowering the wage rate, has failed to work in Argentina.^{33/}

III. Alternative Policies for Non-Traditional Industrial Export Promotion

Ineffective relative price stimuli have put the main burden of correcting the periodic incidence of excess demand for foreign exchange on industrial recessions. These have sharply curbed industrial imports, reduced home demand for agricultural exportables, and pushed some industrial firms with severe excess capacity problems into exporting. The recessions have not, however, forced the resource reallocations -- the Schumpeterian purification rites -- required to remove the oppressive foreign exchange constraint on output growth. Cyclical revivals have thus renewed excess demand for foreign

^{33/} It is generally accepted that the foreign exchange constraint on economic growth emphasized by two-gap models can be eliminated if the economy is sufficiently responsive to exchange and wage rate adjustments. For a recent demonstration of this point, see Richard R. Nelson, The Effective Exchange Rate, Employment and Growth in a Foreign Exchange Constrained Economy (Santa Monica, the RAND Corporation, May 1968).

exchange forcing further industrial recessions on the Argentine economy, with the incidence of these recessions increasing markedly after 1958. More substantial industrial exporting could, of course, ease this unhappy dilemma. The findings of this paper do not, however, lead inexorably to one line of export promotion policies. There are a number of alternative possibilities, each based on different assessments of the political and institutional flexibility of the economy which may be consistent with the findings. The remainder of this section attempts to sketch the main alternatives and the political and institutional assumptions underlying each of them.

If the oligopolistic-cartelized industrial structure is taken as an immovable policy constraint^{34/} one alternative would be simply to raise the subsidy on non-traditional exports until a significant supply response is forthcoming. To be sure, the very large subsidies given non-traditional exports under the 1955-58 dual rate system failed to elicit a detectable increase in exports, but it is plausible to suppose that LAFTA and the desperation of the 1960s have created a potentially greater responsiveness on the part of Argentine industrialists to large export subsidies. It can also be argued that the rise of non-traditional exporting after 1962 facilitates the potential response to large export incentives by increasing the familiarity of Argentine industrialists with foreign market characteristics, although

^{34/}The published 1963 census gives no size distribution of firms in each industry. Scattered industry studies suggest, however, a mixed pattern of industry concentration. Some industries -- notably the capital intensive ones -- are dominated by a handful of large firms, while others seem to have relatively low concentration ratios. Almost all are organized, however, in very active industry associations which vigorously represent each industry in labor negotiations and in pressing government authorities on tariff, government contracts, licensing of new firms and other policy matters. This is why we have used the cumbersome dual phrase, oligopoly and cartel pricing, to describe the pricing patterns which probably dominate the industrial sector.

this last supposition is not supported by their early post-war behavior, when Argentine industrialists speedily relinquished the proportionately larger export markets which had fallen their way during World War II. (See Table 1, Appendix B).

In principle, the increased subsidy could be provided either by returning to the premium exchange rate method of 1955-58, or by increasing tax rebates for non-traditional exports and export taxes on traditional exports while nominally preserving the single exchange rate. In practice, each approach raises a somewhat different set of complications.

A premium exchange rate would be simpler to administer and easier to adjust flexibly than a direct tax subsidy system. It would also, perhaps, generate fewer adverse repercussions on the rest of the economy by not becoming entangled in the complex sub-optimization conflicts which taxes and tax subsidies tend to raise. That is, given the substantial idle capacity and chronic industrial underemployment of the 1960s, a fairly sizeable increase of the present small ratio of industrial exports to industrial output could be accommodated without setting off strong added price pressures because of increased factor and intermediate product demand. A tax subsidy approach, on the other hand, would probably run afoul of inflexibilities in the tax system, tax equity arguments with which competing economic interest groups sanctify their claims, and the fear of the fiscal

authorities that large subsidies would aggravate the chronic fiscal deficit.^{35/}

The equity issue is mainly an ethical and power question, hence of more interest to citizens than economists. The fiscal deficit issue, on the other hand, does lend itself to conventional economic analysis. For the existing system of tax rates, import coefficients and other key parameters, there may be a range of export tax subsidies for which the income multiplier would enable the treasury to recoup from other existing taxes the fiscal cost of the export subsidy. Professor Schydrowsky, using both a Keynesian macro-model and a disaggregated input-output model for Argentina, tentatively estimates the upper limit of the export tax subsidy at 56 per cent, according to the macro-model and 70 per cent from the input-output model.^{36/} Both are higher than the combined drawback-reintegro subsidy plus export tax on traditional exports of the 1960s but much lower than the exchange rate subsidies of 1955-58. A basic assumption of the estimates is that industrial exports in the 1960s

^{35/} Recent evidence on the conflicting pressures at work is provided by the March 1967 devaluation, when the peso was devalued by forty per cent. The devaluation was accompanied by export taxes on traditional exports ranging from 16 to 25 per cent. But despite the avowed interest of the government in promoting non-traditional industrial exporting, the reintegro subsidy was simultaneously suspended, mainly because the government had given higher priority to reducing the fiscal deficit. Subsequently, export taxes have been progressively reduced and the reintegros reactivated under the impetus of rising domestic prices and pressure from traditional exporters and industrialists. The overall consequence has been to keep the effective subsidy on non-traditional exports within pre-devaluation limits. The politico-economic balancing act which kept the effective subsidy rate from expanding, occurred, it should be noted, under a military dictatorship which had freed itself from parliamentary constraints by abolishing the Argentine Congress.

^{36/} See Daniel M. Schydrowsky, "Short Run Employment Policy in Semi-Industrialized Economies," Economic Development Report No. 73 (Harvard Development Advisory Service, September 1967).

would respond favorably to an extra 25-40 per cent tax subsidy. This assumption is at odds with the findings of this paper, but it is conceivable that because of LAFTA and the depressed home environment of the 1960s, these findings somewhat underestimate the current elasticity of non-traditional exports to increased external price incentives. If, however, the underestimation is small and subsidies beyond the Schydlofsky limits are required to elicit a positive response, then the avoidance of a fiscal loss would depend, of course, on the ability of the government to impose compensating taxes elsewhere.

Although an open dual exchange rate system would therefore appear to raise fewer complications than a disguised one operated through export taxes and subsidies, the preference in Argentine industrial circles has nevertheless been decidedly on the side of the latter approach.^{37/} Two general reasons seem to account for the preference. The first is that open dual exchange rates evoke fearful memories in the Argentine business establishment of Peronist controls and statism. The establishment has, therefore, a deeply religious preference for using the trappings of orthodox economic liberalism to operate what in practice is a highly discriminatory system of economic controls. Secondly, the preference is reinforced by the belief that these trappings strongly appeal to the Gnomes of Zurich, Wolves of Wall Street, IMF priesthood, and other pace setters of the international finance set, thereby improving Argentina's external credit worthiness and attractiveness to foreign investors. There is, of course, justification for the belief,

^{37/} A growing number of trade associations and industrial study groups have been urging a dual rate system in recent years, but the proposals which I have seen are all variations of the tax-subsidy approach.

although it tends to be overemphasized by Argentine economic "liberals", since a booming economy would undoubtedly be a stronger force than ideological yea saying for attracting foreign capital.

Quite apart from these complications, massive global subsidies via either approach may be an inefficient way of dealing with cyclical unemployment, and even counter-productive as regards long-term resource allocation. This is because the larger share of non-traditional exports in the 1960s has come from relatively capital intensive industries, and there is no strong reason to assume that larger global subsidies would reverse this pattern. Thus the subsidies would probably have relatively low first round employment effects and would provide relief mainly to industries which comparative cost theory predicts to be comparatively high-cost producers and unlikely candidates for sustained long-term export expansion.

Price data tend to support the comparative cost prediction; the main non-traditional exporting industries having above average ratios to international prices.^{38/} The comparative cost case, however, is far from fool-proof. For one thing, the value added per employee index of capital intensity combines physical and human capital, and Lary's assumption that the two intensities are highly correlated in the LDCs appears less applicable to Argentina. Secondly, much of the high value added non-traditional exporting

^{38/} Industry price comparisons at the 2-digit industry level are given in Felix, op. cit., Tables 3-6, 3-7.

Note, however, that the tables indicate considerable variance around the mean for the industries with high average relative prices, indicating there could be individual products or clusters of products in these industries which are close to being price competitive with imports.

emanates from a few subsidiaries of multi-national corporations, either as intra-corporate sales of components or by using the established marketing facilities of the parent firm. Presumably, these firms can safely apply lower accounting prices to their fixed capital, incur lower unit marketing costs and can self-insure against exporting risks more effectively than Argentine owned firms. Scattered evidence, in fact, indicates that some of these subsidiaries may be exporting profitably at international prices while others are not.^{39/}

Exceptions notwithstanding, the comparative cost case against promoting non-traditional exporting by making lavish export subsidies available to a wide spectrum of Argentine industrial products seems fairly strong.

^{39/} An example of the first is the exporting of a refurbished old model business machine by IBM-Argentina. The machine is being sold in growing quantities not only to LAFTA but to other countries as well. IBM was given liberal importing rights on parts and equipment by the Argentine government in an agreement reached in 1963, in return for a commitment to export a major portion of the product. The arrangement conforms to Professor Raymond Vernon's international product cycle dynamics, in which multi-national manufacturing firms tend to concentrate production of their older products for the world market in countries with relatively cheap semi-skilled labor and their newer products in countries where technical and scientific labor and external economies related to new product development are abundant. See Raymond Vernon, "International Investment and International Trade in the Product Cycle," Quarterly Journal of Economics, Vol. LXXX (May 1966), 190-207.

An illustration from the other end of the spectrum is the export of automotive engines, a very high cost item in Argentina because of small product runs and the high cost of forging, quality controls and related factors. In an attempt to reduce its high Latin-American production costs through regional specialization under a LAFTA complementarity agreement, the Ford Motor Company has begun to export engines to Ford-Chile from its Argentine subsidiary. In 1966 about \$2,000,000 of engines were exported to Chile at an FOB price, according to Argentine trade statistics, of \$673 per engine, or well above the price at which Ford-Chile could have imported these 6-cylinder 1962 Model Falcon engines from Sears Roebuck-USA. Ford-Argentina has a very long way to go in reducing costs before it can become a supplier of older model engines to Ford plants in less highly protected markets.

Even if effective, the subsidies might purchase a limited amount of short-run unemployment relief at the cost of hindering rather than encouraging the industrial rationalization needed if industry is to help overcome the recurring foreign exchange constraint via sustained industrial export expansion.

The alternative to subsidies based on acceptance of the existing industrial market structure is to combine subsidies with efforts to change the structure. An obvious approach is to lower import duties concurrently with export subsidies. Freer import competition would make import demand more price elastic and curb the oligopolistic and cartel pricing capacity of Argentine industry. Firms would be forced to become more competitive and export prone or go under.

This comparative static case for freer trade is, of course, an old recipe, but age has not withered its unattractiveness to Argentine industrialists and most government policy makers. Apart from expected resistance from vested interests, the lack of enthusiasm stems from the failure of the case thus far to deal adequately with two crucial issues.

The first is that economically the approach reverses the Argentine dilemma. It stresses long-run improvement of industrial efficiency at the cost, even if the long-run adaptation is successful, of deeper transitional industrial recession and unemployment of unknown dimensions. It also assumes that the capacity of the financially weak industrial sector to overcome marketing and production cost obstacles to exporting is high enough to ensure successful adaptation. Reliable information about either the speed of adjustment or the long-run adaptability of the Argentine industrial sector has not, however, accompanied presentations of the comparative static case.

One way of obtaining information about speed of adjustment to a policy change is to test the reaction to a modest policy probe. The reduction of import duties which accompanied in March, 1967 devaluation of the Argentine peso was such a probe and it suggests rather pessimistic conclusions about the current adjustment capacity of Argentine industry. The announced purposes of the tariff cuts, which lowered maximum duties from 325 to 140 per cent, were to restrain the rise of industrial prices and costs following the forty per cent devaluation and to make Argentine industry more competitive. Initially, however, the tariff cuts mainly squeezed out water in the tariff structure without reducing the effective level of protection. In the first twelve months following devaluation industrial prices rose 21 per cent, while imports fell slightly. With rising prices, however, some import competition began to threaten, setting off pressures from industrialists for protective measures. The pressure was strong enough that within six months after the tariff cuts, the Minister of Economy felt impelled to reassure industry that no further cuts were contemplated, to announce a shift of emphasis toward industrial recovery, and to invite industrial trade associations to assist the Ministry in establishing a comprehensive system of index prices for customs valuation high enough to guard against the grave threat of widespread foreign dumping. This denouement tells us something, of course, about the resistance to change of Argentine industry and its political influence. But since it occurred under a military dictatorship which had seized power and abolished the Congress for the alleged purpose of modernizing the Argentine economy and revolutionizing Argentine society, it can also be read as reflecting belated awareness by the authorities of the limited capacity of Argentine industry to adjust to serious import competition.

The second unresolved issue concerns the direction of the adjustment under general import liberalization. Foreign owned subsidiaries already make up a large share of large-scale Argentine industry, and there is justifiable fear on the part of Argentine nationalists that mortality under import liberalization would be concentrated among the financially weaker Argentine owned firms, thus leading to an even greater share of foreign ownership of Argentine industry.^{40/} Citizens of super-powers, long accustomed to exporting their own nationalistic preferences as universal verities, usually have difficulty accepting the nationalistic aspirations of lesser countries as reasonable. It would, however, be wiser for super-power economists at least to accept economic nationalism as an argument in the social welfare function of the smaller countries rather than dismiss it as an aberration. The desire to have some national control of one's economic institutions is neither wholly irrational nor likely to cease being a force influencing policy choices in the foreseeable future.

Yet comparative costs live! The pressing problem remains of finding export promotion measures which relieve cyclical instability and the long-run foreign exchange constraint. A third alternative, consistent with comparative cost criteria and the limited capacity of the Argentine government to subsidize effectively is therefore, to give up efforts to distribute export subsidies to the gamut of Argentine industry and to concentrate the subsidies and related industry rationalization and foreign market search on labor intensive and agriculturally based industries in order to create more

^{40/} In the past two years an upsurge of foreign takeovers of financially shaky Argentine firms has generated concern even by Argentine financial weeklies of normally liberal economic persuasion.

favorable conditions for subsequent import liberalization. This alternative, to be sure, also has its political-institutional obstacles. It is at odds with both the brand of economic liberalism currently in vogue in Argentine business circles and with the heavy industry syndrome of Argentine nationalists. Moreover, the deterioration of the quality of the government bureaucracy since the fall of Perón raises legitimate doubts as to the ability of the bureaucracy to administer a discriminatory policy effectively.

The Argentine dilemma thus has many horns. Buridan's ass starved to death through indecision and nations stagnate for similar reasons. It remains to be seen whether Argentina can escape this fate through a workable compromise between the harsh demands of economics and the political-institutional factors constraining economic policy choices.

Appendix A

Construction of "Real" Exchange Rates and Capacity Utilization Indices

I. The "Real" Exchange Rates

The annual implicit export exchange rate was obtained by dividing the annual peso value of non-traditional exports by their dollar value, as recorded in the Anuario de Comercio Exterior of the National Statistical Office (DNEC) for 1955-66. The rate was adjusted upward for the years 1961-1966 for export subsidies as follows:

1. For 1961 the implicit rate for Food and Beverages (1), Textiles (2), Clothing (3), Furniture and Wood Products (4), Printing and Publishing (5), Leather Products (6), Stone, Glass and Ceramics (10), was multiplied by 1.06 to account for drawbacks which went into effect in 1961. For Paper and Paperboard (7), Chemicals (8), Rubber Products (9), Metals and Metal Products (11), Non-Electric Machinery and Vehicles (12) and Electrical Machinery and Apparatus (13), the multiplier was 1.10.

2. In 1962 the drawback subsidy was conventionalized at 12 per cent, and the multiplier was therefore raised to 1.12.

3. For 1963 the reintegro was introduced but not yet typified. The rate for industries 1, 4, 6, 10 was multiplied by 1.20 to account for both drawback and reintegro. For industry 8 the exchange rate was multiplied by 1.22, and for the rest by 1.24.

4. For 1964-66, reintegro subsidies were made more generous and in 1965 were typified into 3 conventional rates, 6, 12, and 18 per cent, as indicated in the text. Accordingly, the exchange rate for industries 1, 4, 5, 6, 10 was multiplied by 1.24, that for 8 (chemicals) by 1.27 and the rest by 1.30.

Appendix A

page 2

The adjusted rate was then divided by the individual industry price indices to get the "real" rate for each of the 13 industries, using price series devised by CONADE for 1955-63 and by the DNEC for 1964-66. The deflator used to get the "real" rate for Type I exports was the weighted average price index for industries 1, 4, 5, 6, and 10, the weights being the proportionate value added of the component industries for 1960 as estimated by CONADE. Similarly, for Type II products, a weighted price index was used composed of the industry prices of the remaining 8 industries weighted by their relative value added in 1960 as estimated by CONADE.

II. The Capacity Utilization Index

For 1961-66 CONADE estimates based on industry surveys were used for all thirteen industries. For 1955-60, for which no direct estimates could be found, the procedure followed was to get annual deviations from output trend for each industry for the period, 1954-61. The highest utilization rate of the period, 1961-66 was then multiplied by $1 \pm$ the percentage derivation for each of the years, 1955-60 to set the rate of capacity use for those years. The highest rate was used because of "business annals" type evidence that chronic and severe excess capacity was much less prevalent in Argentine industry prior to 1962 than in 1962-66.

Appendix B

Table 1

Argentine Exports, 1938-1966

<u>Years</u>	<u>Total Exports in current dollars (\$1000)</u>	<u>Percentage Distribution</u>					<u>Hunting and fishing Products</u>	<u>Diverse Manufacturing Products</u>
		<u>Livestock Products</u>	<u>Agricultural Products</u>	<u>Forestry Products</u>	<u>Mineral Products</u>			
1938-40	436,836.6	46.1	46.1	2.8	1.3	0.4	3.3	
1941-45	577,333.8	56.6	25.0	2.4	1.6	0.8	13.6	
1946-50	1,324,260.3	43.1	49.4	2.5	0.2	0.3	4.5	
1951-55	987,526.6	50.5	40.6	5.2	0.4	0.1	3.2	
1956-60	1,000,119.9	50.6	44.0	1.7	0.6	0.3	2.7	
1961-66	1,340,364.8	45.1	46.7	1.1	1.2	0.4	5.5	

Source: Dirección Nacional de Estadística y Censos, Anuario de Comercio Exterior, various issues

Table 2

Relative Shares of Major Categories of Agricultural Exports: Argentine, 1938-1962

<u>Years</u>	<u>Cereal and Linseed</u>	<u>Wheat flour and by-products</u>	<u>Vegetable oils and by-products</u> (percentages)	<u>Fresh Fruits</u>	<u>Other Agricultural products</u>
1938-40	89.2	3.7	2.6	1.3	3.2
1941-45	65.2	3.0	21.2	2.2	8.4
1946-50	64.7	3.1	25.8	2.4	4.0
1951-55	57.3	2.9	19.9	12.3	7.6
1956-60	61.8	3.3	25.3	5.8	3.8
1961-66	61.9	4.4	23.4	5.2	5.1

Source: Same as Table 1.

Table 3

Relative Shares of Major Categories of Livestock Exports: Argentine, 1938-66

<u>Years</u>	<u>Live Animals</u>	<u>Meat</u>	<u>Hides</u>	<u>Wool</u> (percentages)	<u>Dairy Products</u>	Miscellaneous <u>By-products</u>
1938-40	2.3	47.3	16.2	25.1	3.1	6.0
1941-45	3.6	47.5	15.2	18.2	5.6	9.9
1946-50	4.0	33.7	22.3	21.8	7.2	11.9
1951-55	2.1	39.8	14.4	28.4	7.3	8.0
1956-60	2.4	47.2	13.3	24.5	7.3	5.3
1961-66	4.5	51.2	12.5	23.0	4.9	3.9

Source: Same as Table 1.

Table 6

Deflated Exchange Rates and Capacity Utilization Ratios: (a)
Argentine 1955-66

#	Industry	YEARS											
		1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
<u>(01) Food and Beverages</u>													
	Exchange Rate	64	109	107	110	94	83	81	94	92	71	67	67
	Capacity Rate	54	61	58	61	52	50	49	51	53	49	52	53
<u>(02) Textiles</u>													
	Exchange Rate	45	96	103	99	93	83	78	91	98	79	69	69
	Capacity Rate	35	84	87	87	79	83	83	64	59	69	77	74
<u>(03) Clothing</u>													
	Exchange Rate	61	73	67	73	98	83	78	82	88	79	72	72
	Capacity Rate	91	92	95	94	86	89	88	74	64	73	78	76
<u>(04) Wood Products</u>													
	Exchange Rate				110	83	83	77	85	100	91	76	76
	Capacity Rate				73	72	72	73	61	49	55	70	71
<u>(05) Printing and Publishing</u>													
	Exchange Rate	49	83	103	93	91	83	71	78	89	79	70	70
	Capacity Rate	72	76	77	76	66	69	73	64	58	62	71	71
<u>(06) Leather Products</u>													
	Exchange Rate	53	118	131	114	86	83	77	88	97	86	77	77
	Capacity Rate	96	96	100	100	100	88	84	76	69	78	80	77
<u>(07) Paper and Cardboard</u>													
	Exchange Rate	49	83	103	93	91	83	74	78	89	79	70	70
	Capacity Rate	65	67	66	69	65	50	55	52	48	53	62	60
<u>(08) Chemicals</u>													
	Exchange Rate	45	96	118	114	94	83	83	87	93	86	83	83
	Capacity Rate	83	83	85	87	83	78	73	66	60	68	74	70

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#	Industry	YEARS											
		1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
<u>(09) Rubber</u>													
	Exchange Rate	74	107	132	125	109	83	83	93	89	85	91	91
	Capacity Rate	83	77	74	71	60	67	81	76	54	66	78	70
<u>(010) Stone, Glass and Ceramics</u>													
	Exchange Rate	58	104	123	115	92	83	77	84	91	84	73	73
	Capacity Rate	72	74	79	80	69	66	70	67	59	68	72	74
<u>(011) Metals and Metal Products</u>													
	Exchange Rate	46	100	126	120	87	83	85	91	105	90	82	82
	Capacity Rate	68	64	69	75	59	56	59	48	41	50	67	58
<u>(012) Non-Electric Machinery and Vehicles</u>													
	Exchange Rate	42	90	108	106	100	83	81	85	95	82	73	73
	Capacity Rate	89	84	87	87	75	82	79	62	45	57	66	57
<u>(013) Electric Machinery and Apparatus</u>													
	Exchange Rate	33	73	95	93	83	83	80	90	105	92	77	77
	Capacity Rate	72	71	81	79	68	62	59	48	44	48	61	56
<u>(020) All Industry</u>													
	Exchange Rate	54	106	119	113	93	63	75	80	78	62	57	57
	Capacity Rate	72	73	75	77	68	67	67	60	55	60	66	63

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#	Industry	YEARS											
		1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
(021)	<u>All Type I</u>												
	Exchange Rate	58	115	128	116	91	83	75	81	78	61	56	56
	Capacity Rate	63	68	68	70	62	60	60	58	55	56	61	62
(022)	<u>All Type II</u>												
	Exchange Rate	54	90	107	106	93	83	74	77	78	65	58	58
	Capacity Rate	81	79	82	84	73	74	74	60	51	60	70	63

(a) Exchange rate in 1960 prices
Capacity utilization rate = % of estimated industry capacity

Sources: See Appendix A.

Table 9

Non-Traditional Industrial Exports by Industry and Destination
1955 - 1966

<u>Industry</u>	<u>Border</u>	<u>LAFTA</u>	<u>Rest of World</u>	<u>Total</u>
	(thousands of U.S. dollars at 1960 prices)			
Food and Beverages				
1955	3,165	4,615	7,774	12,389
56	669	2,701	9,213	11,914
57	1,208	2,834	8,558	11,392
58	851	1,070	8,694	9,791
59	408	875	8,623	9,498
60	277	911	7,287	8,198
61	264	633	6,754	7,387
62	296	619	6,634	7,253
63	1,122	2,430	13,747	16,177
64	1,374	2,385	9,068	11,453
65	787	3,924	10,189	14,113
66	1,044	3,510	11,319	14,830
Textiles				
1955	434	435	296	731
56	550	565	910	1,475
57	2,342	2,411	527	2,938
58	716	721	459	1,180
59	477	477	354	831
60	429	429	340	769
61	926	926	498	1,424
62	306	306	406	712
63	391	510	3,982	4,491
64	222	177	3,191	3,368
65	908	909	32	941
66	192	196	316	512

Table 9
Page 2

<u>Industry</u>	<u>Border</u>	<u>LAFTA</u>	<u>Rest of World</u>	<u>Total</u>
	(thousands of U.S. dollars at 1960 prices)			
Clothing				
1955	473	476	18	495
56	213	237	70	307
57	545	589	42	631
58	282	285	53	337
59	242	243	44	287
60	104	109	72	137
61	50	61	125	187
62	32	33	57	89
63	50	52	362	414
64	136	30	304	334
65	235	240	57	296
66	144	149	455	605
Furniture and Other Wood Products				
1958	164	164	5	169
59	101	101	2	103
60	13	13	3	15
61	7	10	98	109
62	2	2	114	116
63	75	29	98	127
64	64	6	67	73
65	93	93	13	106
66	121	121	2	123
Printing and Publishing				
1955	12	279	112	391
56	4	98	19	117
57	20	191	12	207
58	11	200	22	223
59	66	210	25	235

Table 9
Page 3

<u>Industry</u>	<u>Border</u>	<u>LAFTA</u>	<u>Rest of World</u>	<u>Total</u>
	(thousands of U.S. dollars at 1960 prices)			
Printing and Publishing (cont.)				
1960	132	530	76	605
61	119	626	25	651
62	51	301	255	555
63	626	1,765	1,209	2,974
64	1,996	6,007	3,907	9,914
65	2,624	6,243	3,090	9,333
66	2,200	7,112	2,821	9,933
Leather Products				
1955	64	65	432	498
56	40	46	753	366
57	114	152	303	455
58	71	338	295	634
59	98	98	307	405
60	36	37	375	412
61	1	5	270	275
62	3	3	273	276
63	5	41	1,247	1,287
64	119	5	1,083	1,088
65	19	193	529	722
66	120	122	573	694
Paper and Cardboard				
1955	4	4	1	5
56	1	1	0	1
57	94	95	1	95
58	73	73	2	76
59	95	95	5	100
60	115	137	27	164
61	206	215	8	223
62	118	119	12	131
63	170	171	40	211
64	183	202	26	227
65	190	222	236	458
66	299	302	17	319

Table 9
Page 4

<u>Industry</u>	<u>Border</u>	<u>LAFTA</u>	<u>Rest of World</u>	<u>Total</u>
	(thousands of U.S. dollars at 1960 prices)			
Chemicals				
1955	781	1,176	520	1,697
56	294	764	1,424	2,187
57	1,075	2,987	1,945	4,933
58	674	1,121	1,989	3,110
59	699	1,081	1,864	2,944
60	1,067	1,518	2,341	3,859
61	1,219	1,861	1,777	3,638
62	397	2,218	1,909	4,127
63	1,961	2,939	3,073	6,013
64	3,063	4,223	5,872	10,095
65	4,118	7,293	5,459	12,752
66	4,654	6,573	5,536	12,109
Rubber				
1955	34	34	2	36
56	24	25	7	32
57	37	37	9	46
58	15	15	177	192
59	37	40	206	246
60	17	79	35	114
61	8	10	35	45
62	33	34	34	69
63	63	51	51	103
64	65	97	36	134
65	274	308	32	339
66	176	277	44	321
Stone, Glass and Ceramics				
1955	381	383	1	383
56	67	86	1	87
57	355	356	2	358
58	268	375	5	381
59	365	367	3	369

Table 9
Page 5

<u>Industry</u>	<u>Border</u>	<u>LAFTA</u>	<u>Rest of World</u>	<u>Total</u>
(thousands of U.S. dollars at 1960 prices)				
Stone, Glass and Ceramics (cont)				
1960	198	199	16	214
61	189	190	13	203
62	177	185	13	198
63	111	107	33	141
64	166	154	71	224
65	423	438	123	560
66	407	428	26	453
Metals and Metal Products				
1955	302	312	89	401
56	535	541	12	552
57	509	528	11	539
58	111	1,099	10	1,109
59	439	444	8	452
60	2,260	3,453	34	3,488
61	1,199	1,814	313	2,127
62	987	1,335	197	1,531
63	4,024	7,533	9,637	17,270
64	5,614	7,053	12,433	19,486
65	2,083	3,329	1,533	4,862
66	5,294	7,455	3,810	11,266
Non-electric Machinery and Vehicles				
1955	251	337	5	337
56	220	336	14	350
57	717	826	44	870
58	507	583	61	645
59	565	614	53	667
60	859	986	102	1,087
61	115	1,465	207	1,672
62	1,701	1,915	399	2,375
63	3,545	5,518	2,208	7,735
64	5,411	8,970	3,199	12,169
65	389	7,306	4,509	11,816
66	6,880	10,387	3,365	13,752

Table 9
Page 6

<u>Industry</u>	<u>Border</u>	<u>LAFTA</u>	<u>Rest of World</u>	<u>Total</u>
	(thousands of U.S. dollars at 1960 prices)			
Electric Machinery and Apparatus				
1955	227	232	17	249
56	92	115	15	130
57	382	390	539	929
58	45	501	1,554	2,055
59	1,087	1,101	516	1,617
60	739	835	205	1,040
61	1,595	1,620	77	1,697
62	572	1,025	101	1,126
63	841	1,888	662	2,550
64	588	1,716	355	2,072
65	1,107	2,652	484	3,136
66	1,316	2,540	368	2,908
All industry				
1955	6,119	8,347	9,263	17,610
56	1,445	5,514	12,006	17,520
57	7,397	11,400	11,992	23,392
58	5,168	6,545	13,355	19,900
59	4,677	5,745	12,008	17,753
60	6,243	9,232	10,869	20,100
61	6,944	9,410	10,227	19,638
62	5,771	8,153	10,403	18,556
63	13,021	23,148	36,345	59,493
64	18,997	31,025	39,611	70,636
65	17,922	33,149	26,185	59,334
66	22,727	38,955	28,620	67,575