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Wogart, Jan Peter

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## From import substitution to export diversification in Colombia

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Working Paper No. 31

FROM IMPORT SUBSTITUTION TO  
EXPORT DIVERSIFICATION IN COLOMBIA

by

Jan Peter Wogart

A 92 815 75 Weltwirtschaft  
Kiel

Institut für Weltwirtschaft an der Universität Kiel

Kiel Institute of World Economics  
Department IV  
2300 Kiel, Düsternbrooker Weg 120

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FROM IMPORT SUBSTITUTION TO EXPORT DIVERSIFICATION IN COLOMBIA<sup>x</sup>

## INTRODUCTION

The recent surge of industrial exports from some Latin American countries has prompted a number of studies which have examined the new outward-looking strategies of a few nations such as Brazil, Mexico and Argentina.<sup>1</sup> There are, however, at least two characteristics which do not apply to most other countries of the Southern Hemisphere of the Americas. First, export diversification in the large nation states began only after import substitution had run its course and seemed to be exhausted. Secondly, in spite of their importance for the balance of payments, exports contribute a relatively small part to the formation of the gross national products in these countries. Hence industrialization will depend on the expansion of domestic markets.

This situation is already quite different in the Andean countries, where import substitution industrialization was not only hampered by small and fragmented markets but also by lower per capita income and more widespread poverty. To overcome this handicap Chile, Bolivia, Peru, Ecuador, Colombia and later Venezuela have joined in the Andean Common Market. Simultaneously they have promoted industrial exports the results of which have been modest except in the case of Colombia. Unless one includes Peru's fishmeal into industrial exports, only Chile and Colombia have been able to raise the share of manufactured goods in total exports beyond 10 %. But whereas industrial exports' share has been falling considerably in Chile in the last few years, Colombia was able to raise that share from less than 2 % in 1960 to over 15 % in 1973.<sup>2</sup>

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There is more than just the successful beginning of export diversification, which makes a study of Colombia's industrialization process worthwhile. Colombia represents a good sample of a typical Latin American country: with a rapidly growing population of about 25 million in 1975, and a per capita income of nearly US \$ 400, which is near the average per capita income of total Latin America, it suffers from high rates of un- and underemployment as well as substantial income inequalities. Furthermore, Colombia has been heavily dependent on one major export crop, - coffee - the price fluctuations of which are still causing substantial disturbances in the whole economy, although coffee's share in total exports has fallen from over 80 % in 1953/54 to less than 50 % in 1973/74.

It is then the purpose of this study to examine Colombia's industrialization process and its relationship to the development of the external sector. More specifically, it will be attempted to find some answers to the following questions:

- Which were the major causes and consequences of Colombia's industrialization drive in the 1930s and 40s?
- What kind of industrial pattern emerged during the import substitution process of the post-war era?
- How was the export diversification program conceived and implemented and what were its effects on the balance-of-payments and the price level as well as on industrial growth and employment?

Consequently the essay will be divided into three parts. First, we will look into the major expansion of traditional industries, which followed the collapse of coffee prices during the early years of the Great Depression, and the beginning of import substitution in the early

post-war years. Between 1945 and 1953 coffee prices boomed, facilitating modernization and expansion of industry. Import substitution industrialization became both more urgent and necessary again, once the foreign exchange reserves got scarce in the late Fifties and Sixties. Progress and problems of this period will be examined in the second part. The third section will discuss a different response of policy makers to the foreign exchange constraint; it will analyze the major tools they have used to promote non-traditional exports in general and manufactured exports in particular. This will be followed by an analysis of the effects the export expansion had on the major variables of the Colombian economy. A brief outlook towards the future prospects of the industrial export strategy will conclude the essay.

## I. External Shocks and the Beginning of Colombian Industrialization

It has long been the contention of the "structuralist" school of thought that Latin America's specialization in international trade as a supplier of raw materials, foodstuffs, metals, and fuels has been disadvantageous to its own economic development.<sup>3</sup> Not only did the terms of trade allegedly move against raw material producers, any attempt of industrialization was made difficult, if not impossible, by the laissez-faire attitude of policy-makers around the world, who favored specialization according to comparative advantage.

19th century Colombia fits neatly into this pattern. The first industrialization attempt between 1821 and 1845, which had been encouraged by moderately protective tariffs and the granting of limited monopoly privileges, was soon to be abandoned when coffee proved to be a profitable export cash crop after 1865.<sup>4</sup> The revolution in maritime and land transportation, together with rapid industrialization in Europe and North America, created a rising demand for tropical products. In return, industrial goods from the advanced nations now substituted whatever domestic manufactures had been produced in Colombia before.

The dominance of coffee with its dependence on relatively few foreign markets were to remain in the 20th century as reflected in Table 1, but industrialization got under way when the first shocks of the Great Depression and later World War II interrupted the previously expanding flows of international trade.

Table 1

## Value, Composition and Distribution of Colombian Exports

Years	Total Value Mill. US \$	Coffee Exports %	Petroleum Exports %	Bananas Exports %	Others <sup>a</sup> Exports %	Exports to US %	Exports to Europe %	Exports to Latin America %	Exports to Other Countries %
1925-1929	108.0	70.9	14.2	6.1	8.8	80.2	12.9	4.7	2.1
1930-1934	74.2	67.8	20.5	7.0	4.7	} 65.5	} 20.7	} 1.0	} 12.8
1935-1939	78.0	64.4	23.3	6.1	6.2				
1940-1944	99.5	71.8	19.2	1.4	7.6	} 79.1	} 4.3	} 3.2	} 13.4
1945-1949	239.9	76.2	15.2	1.7	6.9				
1950-1954	532.2	78.5	13.6	} 7.9		80.8 <sup>b</sup>	9.7 <sup>b</sup>	1.4 <sup>b</sup>	8.0 <sup>b</sup>
1955-1959	585.6	72.8	13.5	} 13.7		63.7 <sup>c</sup>	28.1 <sup>c</sup>	1.6 <sup>c</sup>	6.6 <sup>c</sup>
1960-1964	513.6	65.4	13.9	} 20.7					
1965-1969	586.4	63.8	10.7	} 25.5		41.8	42.7	6.8	8.7
1970-1972	751.5	59.7	2.6	} 37.7		35.1 <sup>d</sup>	34.5	20.9	9.5

<sup>a</sup> includes: nonmonetary gold (between \$ 10-15 mill. per year) and since 1955 estimate for unrecorded border trade, which averaged \$ 50 mill. per year in the '50s and was estimated to be around \$ 25 mill. per year in the '60s. -

<sup>b</sup> 1950-1953. - <sup>c</sup> 1958-1962 - <sup>d</sup> 1973-74.

Source: 1925-1949 from United Nations, ECLA, Analyses and Projections of Economic Development, III. The Economic Development of Colombia, New York 1955. For 1950-1968 International Bank for Reconstruction and Development, Economic Growth of Colombia, Baltimore 1972. Data for distribution of exports from DANE, Boletín Mensual de Estadística.



In 1915 it was estimated that there existed only 121 industrial firms with a total capital of US \$ 12.4 m.<sup>5</sup> Although these figures probably do not include a great number of small enterprises in the food-processing industry, the first more reliable information in the mid-twenties represents a similar picture. In 1925 the manufacturing sectors' contribution to total gross domestic product was 7.1 % out of which over 50 % came from food-processing industries, such as threshing of coffee and cereals as well as sugar mills and refineries. After industrial production had expanded by an annual average of 4.4 % between 1925 and 1929, it started to accelerate to 8 % in the Thirties and after a brief dip during World War II the growth rate climbed to nearly 10 % between 1945 and 1953. The share of manufacturing in total gross domestic product fell slightly during the first two years of the Depression, but doubled from 6.1 % in 1931 to 12.6 % at the end of World War II.<sup>6</sup>

There seems to be then some evidence that adverse shocks may induce particularly favorable circumstances for rapid industrialization in relatively backward countries. This has indeed been a major thesis of several Latin American economists (such as Furtado and Kafka), who have maintained that the sudden decrease in foreign demand during the Depression, which left the raw material producers to either cut their prices, their quantities, or both, had a positive effect on economic development and on industrialization in Latin America because it lessened its dependence on foreign trade by redistributing income from the traditional agricultural to the modern industrial sector and - due to the drastic cutback of consumer good imports - shifted consumer and business preferences from consumption to saving and investment.<sup>7</sup>

A more detailed analysis will, however, reveal that 1) the foreign sector continued to dominate the Colombian economy during the Thirties and Forties; 2) industrial investment fell off sharply during the same period; 3) though industry grew, it expanded mainly in a horizontal fashion, adding little to the development of the industrial structure; and 4) consumption's relative share in total output increased rather than decreased as predicted.

1. Deteriorating Terms of Trade and Their Impact on Income and Investment

in the face of drastic price declines

To maintain coffee exports, policy-makers devalued the peso by 75 % in the Thirties, which simultaneously increased import prices and also had a mildly protective effect on domestic industry.<sup>8</sup> As Table 2 shows, however, the increasing export quantities were dwarfed by the deteriorating terms of trade, leading to a decrease in the capacity to import (CI) between 1930 and 1933.<sup>9</sup> The impact of this variable on the fluctuations and growth of Colombia's GDP seems to have been quite significant, if one looks at the following equation:

$$\ln \text{GDP} = 2.629 + .656 \ln \text{C.I} \quad R^2 = .911 \\ (.398)^{xx} \quad (.045)^{xx} \quad \text{DW} = .729$$

<sup>xx</sup>significant at the 1 % level

According to the data from 1932 to 1945 a 10 % change in the capacity to import led to a 6.6 % change in output. The correlation coefficients are highly significant and the coefficient of determination ( $R^2$ ) is over 90 %. It should however be noted that the DW statistics are very low, indicating autocorrelation.

Table 2

Colombia's Terms of Trade and Capacity to Import  
1925 - 1954 ( 1950 = 100 )

Years	Export Quantum	Terms of Trade	Capacity to import	Years	Export Quantum	Terms of Trade	Capacity to import
1925	41.1	78.4	32.2	1940	96.0	47.3	45.4
1926	51.5	80.2	41.3	1941	72.5	60.4	43.7
1927	56.4	78.2	44.1	1942	80.0	56.0	44.8
1928	65.8	83.5	54.9	1943	99.3	47.2	46.8
1929	68.3	73.6	50.2	1944	102.0	46.9	47.8
1930	74.4	61.5	45.7	1945	104.2	47.8	49.8
1931	65.9	67.6	44.5	1946	112.4	51.8	58.2
1932	67.2	61.2	41.1	1947	106.4	57.7	61.3
1933	67.6	55.7	37.6	1948	107.1	59.9	64.1
1934	69.8	72.8	50.8	1949	109.9	68.5	75.2
1935	78.1	59.2	46.2	1950	100	100	100
1936	84.1	61.7	51.8	1951	109.9	90.3	99.2
1937	86.7	63.2	54.7	1952	109.9	93.4	102.6
1938	90.8	57.5	52.2	1953	138.8	95.9	133.1
1939	84.2	65.9	55.4	1954	122.6	119.9	146.9

Source: Computed from UN, ECLA: Analyses and Projections of Economic Development, III.  
The Economic Development of Colombia. New York: United Nations, 1955.

The alleged changes in preferences from consumption to investment and a shift of capital expenditures from the traditional to the modern sector are not proven by the available data. Consumption's share in total GDP rose from 78 % between 1925 and 1929 to 89 % in the following time period, averaging 84 % in the late Thirties. Whereas the growth rate of per capita income shows a sharp decline from annual increases of 4.6 % to 0.8 % in the Depression years and continuing at 0.8 % until 1945, per capita consumption which had been rising at 2.1 % annually kept increasing at 1.4 % between 1929 and 1938, becoming only negative during the War years, when the problem of foreign exchange scarcity turned into a problem of procuring foreign commodities both in the producer and consumer sector.

Industrial investment fell from 151 m. pesos in 1928 to less than 50 m. pesos during the Depression years (1930-37) and reached the 1928 figure only again in 1945. Investment in agriculture declined less, from 80 m. pesos to an average of 60 m. pesos reaching its 1928 mark already in 1938. The figures in Table 3 confirm the foregoing statistics: industrial investment was badly hurt by the adversities of Depression and War, mainly because it depended critically on imports of foreign capital goods, for which there was insufficient foreign exchange during the Depression and which were in short supply during World War II.

Table 3

Colombia: Gross Investment, by Major Economic Activities

	Total	Agriculture	Industry
<b>1. <u>Average Annual Investment in 1950 mill. pesos</u></b>			
1925 - 1929	523.4	63.6	118.2
1930 - 1944	481.3	89.8	58.5
1945 - 1953	1103.4	181.4	288.7
<b>2. <u>Percentage Distribution</u></b>			
1925 - 1929	100	12.2	22.6
1930 - 1944	100	18.7	12.3
1945 - 1953	100	17.0	26.2
<b>3. <u>Investment as Percent of Total and Sectoral Output</u></b>			
1925 - 1929	19.9	4.7	44.7
1930 - 1944	12.4	4.8	12.5
1945 - 1953	17.8	7.5	24.9

Source: Extracted and computed from UN, ECLA: Analyses and Projections of Economic Development, III. The Economic Development of Colombia. New York: United Nations, 1955.

## 2. The Industrialization Pattern in the 30s and 40s

With respect to the diversification of the Colombian economy between the Thirties and the Fifties the data of Table 4, which combine the structure of national manufacturing with the participation of imports in total industrial output show that industry remained dominated by non-durable consumer goods industries, the share of which was still at 68 % in the early Fifties. Durable consumer goods and capital goods industries which combined to 8.4 % of the total industrial output in 1937-39 managed to raise that share by a little over 1 % at the end of World War II, reaching 12.6 % in the early 1950s. These branches remained dominated by imported goods, the share of which were reduced during the War but still made up 40 % and 58 % respectively in the early post-war years.

Table 4 also contains some rough calculations of the role import substitution has played between 1937/1939 and 1951/1953. Computations according to the Chenery formula show that between a fifth and a fourth of changes in total supply in the durable goods, capital goods, and intermediate goods industries can be traced to import substitution. Although its share in the expansion of the supply of non-durable consumer good was considerably smaller (5.2 %) it should be remembered that output in that sector rose sixfold whereas the other industries only had an increase of 200 %.

There are no value-added data for individual Colombian industries before 1953, but it may be interesting to look at the compound growth rate of overall production as given by quantum indices which have been constructed by ECLA in 1954. Although most of the traditional consumer

Table 4

Structure of National Industry, Participation of Manufactured Imports in Total Supply, and Import Substitution  
1937 - 1953

	1937/39	1944/46	1951/53	Importsubstitution 1937/39-1951/53		1937/39-1951/53 Supply Change in %
				in mill. pesos	in % of total Supply	
<u>Non-durable consumer goods</u>				296.8	5.2	595
as % of domestic industrial output	74.7	71.7	68.0			
Imports as % of    "-    "-	17.5	7.2	4.0			
Distribution of imports <sup>a</sup>	24.8	-	12.2			
<u>Durable consumer goods</u>				31.5	22.5	199
as % of domestic industrial output	2.6	3.1	3.7			
Imports as % of    "-    "-	56.3	33.5	40.9			
Distribution of imports <sup>a</sup>	6.0	-	4.8			
<u>Capital goods</u>				104.9	23.8	189
as % of domestic industrial output	5.8	6.7	8.9			
Imports as % of    "-    "-	73.9	61.2	58.3			
Distribution of imports <sup>a</sup>	36.7	-	44.3			
<u>Intermediate goods</u>				112.1	25.8	157
as % of domestic industrial output	15.0	16.8	17.0			
Imports as % of    "-    "-	45.0	33.0	29.5			
Distribution of imports <sup>a</sup>	26.8	-	32.9			
<u>Fuels</u>				- 5.5	- 6.1	298
as % of domestic industrial output	1.8	1.7	2.4			
Imports as % of    "-    "-	33.3	29.8	37.7			
Distribution of imports <sup>a</sup>	1.3	-	4.0			

<sup>a</sup>Figures in third column are for 1948-52. Sum of shares is less than 100, because of unclassified imports.

goods grew at a slightly lesser rate than the average, the change from the production of these goods to more sophisticated products was slow and hardly visible by the end of World War II. Two sets of figures reflect this process. Whereas the sum of the traditional non-durable consumer goods (the first five industries of Table 5) made up 85.5 % of total industrial output in 1937, the share of the "modern" industries (the last five of the same Table) was hardly 9 %. In 1945 the respective shares were 82 % and 10.7 % and in 1953 75.6 % and 15.5 %, i.e. the structural change in the 8 post-war period years was substantially faster than in the 8 Depression and war years. This is also reflected in the development of the growth rates which picked up considerably for the latter groups in the 1945-53 period.

The 1953 value-added figures of Table 5 give a more realistic picture of the composition of industries output, pointing towards the dominant agricultural inputs in food processing. It should, however, be noted that even the value-added of the five traditional industries still made up two-thirds of total industrial value-added in 1953 whereas the "modern" five branches reached not even a quarter of industrial production.

The rather modest role of the so-called modern industries is not surprising if one looks more closely into individual branches such as rubber, paper and pulp, and the mechanical and metallurgical industries. In the first case Colombia possessed only two tyre factories in 1953, which were established after World War II and which still bought 80 % of their inputs from abroad, i.e. the linkage effect to the domestic economy was extremely weak. Similar to rubber, paper and pulp were still at the beginning in 1953. Production of paper and paper board



Table 5  
Structure and Growth of Colombian Industry  
1937 - 1953

Industry	Compound Growth Rates of Gross Output			Shares of Output in Total Industry Gross Output			Shares of Value Added in % of Total Value Added 1953	Value Added 1953 in mill. pesos	Personnel Employment	Value Added per Man	Number of Firms	Number of persons per firm	Fixed Capital Scale	Capital-Output Ratio
	1929-37	1937-45	1945-53	1937	1945	1953								
Food.....	0.7	4.9	5.3	49.3	45.7	41.6	18.5	287.3	44,893	6,400	4,986	9	695	2.44
Beverages.....	12.0	10.3	10.7	7.2	9.9	11.5	19.6	303.8	13,575	22,380	567	24	473	1.56
Tobacco.....	1.6	3.7	7.9	2.9	2.5	2.3	3.6	55.8	9,123	6,119	1,088	8	80	1.43
Textiles.....	19.6	9.2	7.6	13.3	12.6	11.5	15.1	233.6	36,594	6,384	2,220	16	830	3.57
Clothing and Footwear.....	34.5	4.3	5.0	12.8	11.4	8.7	9.4	145.6	57,234	2,544	21,157	3	280	1.92
Wood and Cork....	n.a.	2.8	3.5	2.2	1.8	1.2	1.4	21.0	7,191	3,294	2,314	3	40	1.89
Wooden Furniture	n.a.	7.2	11.0	0.8	0.9	1.1	1.7	26.6	9,851	2,698	3,478	3	55	2.08
Paper and Pulp...	12.5	4.3	23.5	0.3	0.3	0.7	1.1	16.4	2,053	8,000	84	24	55	3.33
Printing and Engraving.....	n.a.	0.2	16.0	1.6	1.0	1.7	2.7	42.4	8,360	5,066	618	13	130	3.01
Leather.....	9.3	17.9	4.9	0.8	2.7	2.0	2.0	31.8	6,122	5,200	1,139	5	100	3.13
Rubber.....	n.a.	28.5	27.5	0.1	0.4	1.5	2.2	34.9	2,731	1,278	144	19	60	1.72
Chemicals.....	5.4	9.8	14.7	2.4	3.2	5.0	7.0	108.5	13,304	8,152	965	14	190	1.75
Petroleum and Coal Derivatives.	4.5	7.5	14.1	1.3	1.4	2.0	1.1	16.8	1,553	10,845	12	129	13	0.78
Cement, Ceramics, Glass.....	8.3	8.8	13.0	3.0	3.7	4.3	7.3	114.0	22,290	5,113	2,544	9	270	2.38
Mechanical and Metallurgical....	n.a.	8.2	15.9	2.1	1.4	4.2	6.1	95.2	22,317	4,481	3,976	6	200	2.08
Miscellaneous....						0.7	1.2	17.6	4,480	3,916	1,451	3	16	0.91
Total (Average)..	(8.6)	7.1	9.4					1551.3	261,671	100	46,743	6		2.27

Source: Computed from UN, ECLA: Analyses and Projections of Economic Development, III. The Economic Development of Colombia. New York: United Nations, 1955.

came from one major factory which was not being fully utilized in 1953. Other plants only produced such final products as paper board boxes and paper bags. There seemed to be potential for increased production if a somewhat higher degree of protection had been granted. In the case of basic metals the first major steel mill at Paz del Rio was still not completed in 1953. Whatever existed at that time were small and medium-sized "craft shops" the average employment of which was 6 persons in the early Fifties.

The situation was quite different in the chemical industry. Except for the small-scale operated soap and candle factories and the traditional match factories, most branches from pharmaceutical products and paint to artificial fibres and fertilizers, caustic soda and sulphuric acid were established in the late Forties and early Fifties and were represented by only a few large scale enterprises, which were either partly foreign or state owned, and which imported a high percentage of their inputs from abroad.

Not surprisingly then that the chemical industry did not only constitute one of the largest and most dynamic industries but also one which offered further possibilities for import substitution both in the production of new final goods and material inputs.

A more complex picture is represented by the cement, ceramics and glass industries. This is both a traditional and rather rapidly expanding branch in Colombia. Although regionalization of urban centres and high transport cost had led to an early establishment of local cement plants and in spite of the handicraft nature of most of the glass and ceramic industries, a rapidly increasing demand of the urbanizing

Colombians and the development of new building material (e.g., asbestos cement products) provided sufficient impetus to new growth, expansion and modernization.

A brief look at the "traditional" industries shows a similarly mixed picture between 1937 and 1953. Besides many small-scale food-processing industries the data of Table 5 show that the beverage industry was dominated by larger enterprises which had the highest value-added per man in Colombian industry. The simultaneous existence of very large and efficient plants with handicraft shops were typical for tobacco as well as textile industries. In 1953 only one firm (with various factories) supplied almost the whole cigarette market of Colombia which made up two-thirds of overall tobacco products. In cotton manufacturing which produced over 50 % of total value-added in the textile industry, it was estimated that three firms supplied over 75 % of the total market. Its relatively large size, high productivity and substantial employment (textiles were the third largest employer behind footwear, clothing and foodstuffs), as well as the backward and forward linkages made textile probably the most important industry between 1925-and 1953. Out of its total production, 34 % went as intermediate products to the clothing industry, and the production of cotton was to increase production from 4,000 tons in the first post-war years to 10,000 tons in 1952 and 17,000 tons in 1953.

The heterogeneous characteristics of Colombian industry in the early post-war period can also be observed in comparison with other industrializing Latin American countries. Table 6 presents relative productivity figures for Colombia, Argentina, Brazil, Chile and Mexico.

Table 6

Relative Productivity of Industries in Colombia  
and Other Semi-Industrialized L.A. Countries in  
the Early Post-War Period  
(Each country's average equals 100)

Branches of Industry	Colombia 1953	Argentina 1948	Brazil 1950	Chile 1951	Mexico 1950
Beverages	413	155	147	216	140
Rubber	287	180	266	127	230
Petroleum and coal derivatives	187	770	n.a.	137	106
Pulp and paper	138	120	119	138	120
Textiles	110	108	78	102	75
Food	104	85	113	103	76
Chemicals	135	203	166	160	152
Tobacco	102	334	154	838	455
Leather	93	87	80	80	65
Cement, etc.	88	75	71	81	72
Printing and engraving	87	98	106	123	77
Metallic products	83	95	124	74	88
Electrical appliances and machinery	79	109	135	76	95
Non-electrical machinery	66	84	106	61	62
Transport equipment	62	62	127	77	112
Wood and cork	50	58	80	79	70
Wooden furniture	46	68	73	47	48
Footwear and clothing	44	98	75	54	51
All industries	100	100	100	100	100

Source: UN, ECLA: Analyses and Projections of Economic Development, III.  
The Economic Development of Colombia. New York: United Nations, 1955.

First it should be noted that the rank of these industries according to productivity correlates closely with the average size of the industrial firms in each industry as measured by number of employees ( $r = 0.904$ ). The beverage, textile and food industries do not only have higher than average productivity within Colombia, they also are above similar activities in the other countries. The same is true for the rubber, paper and pulp, and petroleum and coal derivatives industries. Chemicals and tobacco are also above the average in Colombia but these figures are smaller than the comparative indices in other Latin American countries which may be due to the relatively late development of new chemical plants in Colombia and the existence of a virtual monopoly in its cigarette industry.

The relative backwardness of the engineering industries from printing to electrical machinery, and from steel to transport vehicles both within Colombia and in comparison with the large Latin American countries reconfirms the above made assertion that full industrialization in Colombia was at its beginning after the two shocks of the Depression and World War II had passed. Finally, the predominance of handicraft production in wood and cork, wooden furniture, and footwear and clothing becomes obvious in the low productivity figures. The "dualism" between these branches and the leading industries was even greater in Colombia than in the other semi-industrialized countries of Latin America in 1953.

## II. The Foreign Exchange Constraint, Capital Formation, and Import Substitution Industrialization

In the discussion of the Colombian policy response to the sudden deterioration of world market conditions for coffee it was mentioned that devaluation and the tariff reform of 1931 as well as some quantitative controls between 1933 and 1937 were primarily undertaken to equilibrate the balance of payments. In addition, they indirectly benefited domestic industry which was able to expand its production quite rapidly during that time.

In the early post-war period a different trend dominated the economic scene for a short while. Because of the rapid accumulation of foreign exchange from 1941-1945 exchange controls were lifted in 1946. Similar to the experience in other Latin American countries, the international reserves were exhausted quite rapidly, leading to new exchange controls in 1947. Interestingly enough however the liberalization policies did not lead to such an excess of durable consumer goods imports as in Argentina or Brazil but were mainly used for the purchase of machinery and equipment.

Table 7 shows that the investment ratios for the Colombian economy between 1950 and 1956 were substantially above the same ratios for the following fifteen years. As can be further seen this difference was mainly a function of the substantial drop in the purchase of machinery and other equipment, over 90 % of which was imported during the early Fifties. One explanation is the relatively large amount of infrastructure and the investment in basic <sup>industry</sup> / during that time period, the

TABLE 7

COLOMBIA'S INVESTMENT AND SAVING RATIOS, 1950 - 1970<sup>a</sup>  
(in percent of gross domestic product)

1	2	3	4	5	6	7	8	9
Years	Total Gross Investment	Buildings and Constructions	Machinery and Equipment	Net Change in Inventory	Private Saving	Public Saving	Net Capital Inflow	Gross Capital Formation
1950-1953	21.6	8.6	11.0	2.0	11.7	4.0	-0.1	15.6
1954-1956	25.5	10.6	14.6	0.4	11.8	4.4	+1.2	17.3
1957-1959	19.6	9.8	6.6	3.1	15.2	4.6	-1.0	18.9
1960-1962	20.2	9.4	8.7	2.0	14.5	3.3	+2.1	19.9
1963-1966	18.7	8.4	7.6	2.7	12.4	3.3	+2.8	18.4
1967-1970	18.6	10.0	7.0	1.6	11.8	5.8	+2.8	20.3

<sup>a</sup>The ratios of Columns 2-5 are computed from investment and GDP figures in constant 1958 prices, the ratios in columns 6-9 are derived from data in current pesos. The sum of column 3, 4 and 5 should be equal to the ratio in column 2 and the sum of columns 6, 7 and 8 should equal the results in column 9. Small deviations are due to rounding.

Source: Computed from Banco de la Republica, Sintesis Cuentas Nacionales de Colombia 1950-1967, 1967-1970.

steel plant at Paz del Rio being one example. Another reason is probably the decrease of the terms of trade and the capacity to import which started in 1955 with a renewed fall in coffee prices and the ensuing devaluations of the peso, which bought five times less machinery for the same amount of export goods in the mid Sixties than in the early Fifties.

The importance of the price changes in capital goods is even more obvious, if one looks at the investment-GDP ratios in current prices (column 9). Here the investment ratio shows an increasing trend, i.e. the actual efforts to foster capital formation and with it the capacity of the economy to produce and consume more goods in the long run is clearly visible, but they were frustrated by unfavourable external circumstances.

Does this mean that Colombia's economic development was still determined single-handedly by the fate of coffee prices in the Fifties and Sixties? The saving ratios of Table 7 indicate that the saving effort was raised considerably in the late Fifties as a response to the negative external circumstances. The saving rate of the private domestic sector actually increased from 12 to 15.7 % of GDP. It is, however, interesting to see how the increased inflow of foreign capital, which poured into Colombia as the showcase of the Alliance for Progress, <sup>during the early Sixties</sup> seem to have diminished the domestic saving effort to the level reached between 1950 and 1954.



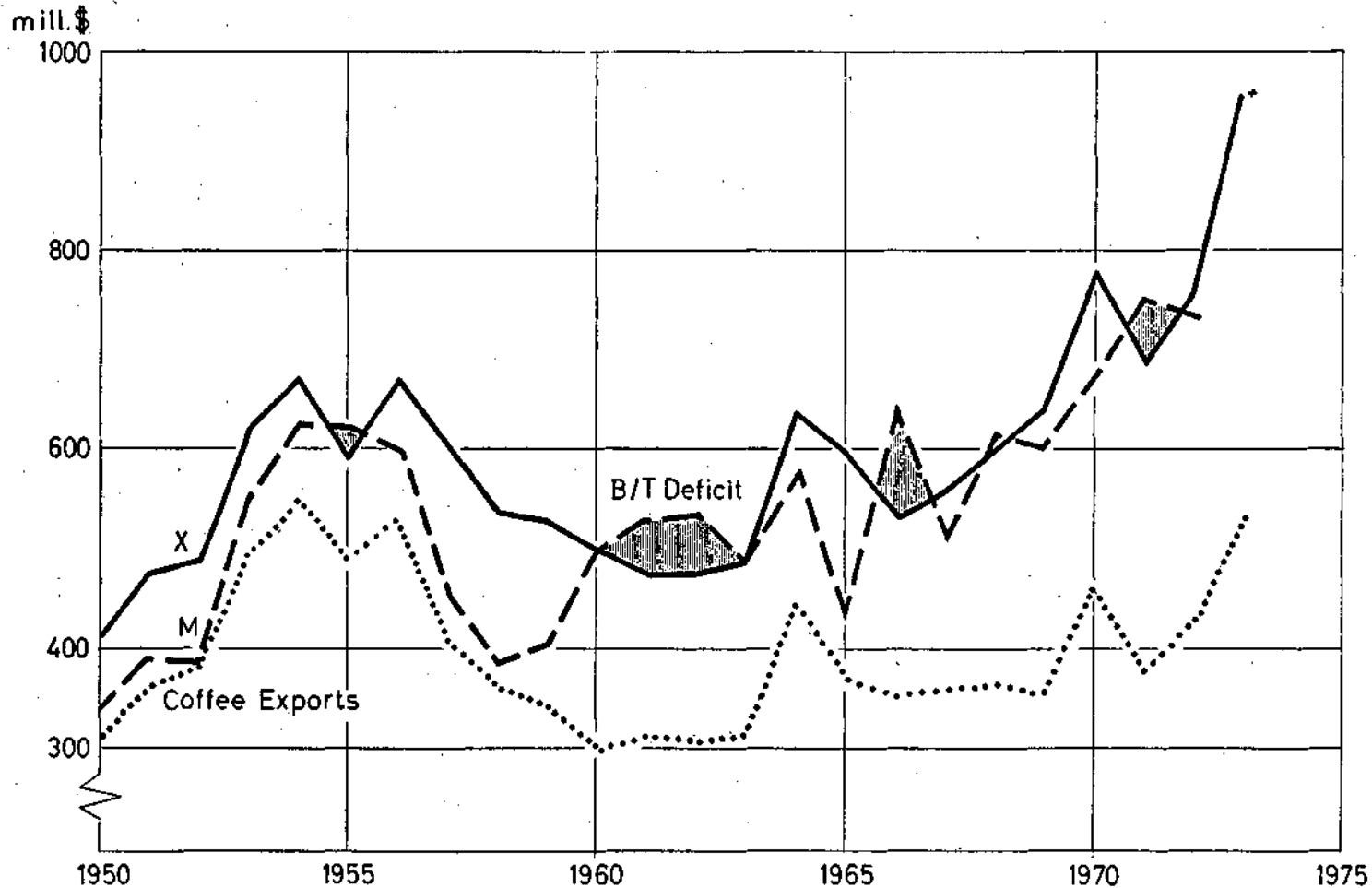
Although the importance of coffee exports on overall foreign trade is clearly reflected in Figure 1, two characteristics indicate that the relationship was not as stringent as it may appear at first sight. First, the gap between coffee exports and total exports was widening during the Sixties and has become substantial during the first years of the Seventies. To what extent the increased importance of non-traditional exports were a policy induced and how they influenced overall development will be discussed in part three. Secondly, the fluctuations in coffee exports and with it overall exports were pronounced and serious, the swing in imports however which were heavily controlled by government policies were even stronger, making private investment decisions more difficult than they already had become through the export constraint.

It becomes therefore necessary to analyse import control and industrialization policies in some detail below.

#### 1. Tariff and Import Control Policies in the Post-War Period

A combination of tariffs, quantitative controls, and prior deposits attempted to allocate imports under the constraint of scarce and fluctuating foreign exchange reserves.<sup>10</sup> Between 1950 and 1974 there were six substantial changes in tariff rates which ranged between 3 % and 100 % according to the "essential" quality of the good for the development of the Colombian economy. In general there was a tendency to increase rates in the late Fifties and during the Sixties, but a substantial cut in the rates of over two thousand items was decreed as late as March 1974.

Figure 1 - ADJUSTED<sup>a</sup> EXPORTS (X) AND IMPORTS (M) OF COLOMBIA 1950-1972  
 (in mill. \$ US)



<sup>a</sup> Exports and Imports are adjusted for illegal Trade and are on customs basis (\*1973 estimated)

More important than level and variation of tariff rates were the grouping of goods into lists of free imports, prohibitive imports, or imports subject to prior licences. Table 8 gives a fair impression of the importance of these restrictions beyond the nominal tariff rates. It should be clear from the above description that the computation of "effective protection" becomes not only a frustrating experience due to frequent changes in the nominal tariff structure, it also may become meaningless in the case where imports are on the prohibitive list, (as was the case with non-durable consumer goods in 1968) since effective protection becomes infinite.

Nevertheless, a study by Hutcheson, who computed the effective rate of protection in 1969, shows that not only was industry as a whole effectively protected whereas agriculture was not but also a great variance of the protection rates within the industrial sector.<sup>11</sup> Effective protection was particularly high for such industries as electrical machinery and transport equipment but hardly less for the traditional beverage and tobacco industries, which were followed by chemicals, metal manufacturing and basic metallurgy. These industries, which made up nearly one-third of total value added of manufacturing in 1968, would have probably not been able to compete with foreign products if protection had been withdrawn.

Table 8 has shown the characteristics of the import control system for 1968, a year which seems to be rather representative. Earlier imports had constantly been shifted back and forth from the prohibitive list to the ones which needed prior licences and to the free list depending on the foreign exchange situation. Whereas from 1951 to 1954 most restrictions had been removed they were gradually reintroduced in the

TABLE 8  
PROTECTIVE MEASURES OF COLOMBIAN INDUSTRY, 1968

Sector	Average Nominal Tariff (%)	Prior Deposits (%)	Inputs		Licencing Arrangement
			Average Nominal Tariff (%)	Prior Deposits (%)	
<u>Non-durable Consumer Goods</u>					
Textiles	64	130	33	99	All goods on prohibitive list except textile inputs and tanning material
Clothing	225	130	106	130	
Footwear and other Leather Goods	150	130	51	83	
<u>Durable Consumer Goods</u>					
Electrical Appliances	70	66	48	75	All Goods subject to prior licence
Cars	340	130	96	60	
Tires	50	30	28	16	
<u>Intermediate Goods</u>	29	104	17	57	All goods subject to prior licence; refined zinc and tin are on free list
<u>Capital Goods</u>					
Metals and Machines	39	22	29	77	All products subject to prior licence
Transport Equipment	67	23	28	37	

Source: International Bank for Reconstruction and Development, Economic Growth of Colombia: Problems and Prospects (Baltimore and London, The John Hopkins University Press, 1972).

latter part of the Fifties. In spite of attempts to liberalize some of them by the newly installed Superintendency of Imports, the further fall in coffee prices and the reluctance of the Colombian government to devalue the peso had the effect to shift practically all items either to the "prior" or "prohibitive" category in 1962. During that year a drastic fall of the auction rate from 6.7 to 9 pesos per dollar initiated a new trend towards liberalization which however was rapidly reversed when it became clear that continuous foreign exchange problems remained. In late 1964 the free import list was eliminated altogether and several items moved into the prohibitive lists.

There was a swift change in policies in 1965-66 which became known as the years of the "liberalization experiment". However, since imports rose rapidly foreign exchange was exhausted soon and with tumbling coffee prices in 1966 the experiment was halted and it was only in 1967-68 that the free import list regained some importance. Since that time there has been a more stable pattern of relaxation of import controls, increasing the items on the free list, particularly for those goods coming from Chile, Peru, Ecuador and Bolivia - countries which Colombia had signed the Andean Pact with in 1969. In 1973 imports on the free list made up 43 % of total reimbursable imports of 1972 and all items on the prohibitive import list were transferred to the prior licensing list. It has only been in 1974 that the delays in processing of import requests signal a new reversal towards stricter import controls. The frequent changes in relaxing and introducing controls would hardly have as the primary motive to grant domestic industry adequate protection from abroad. The pattern clearly indicates that the major purpose of these policy moves was to adjust the domestic demand for foreign goods to the limited capacity of import, which was determined by the

export performance and the inflow of foreign capital from private and public lenders.

A detailed analysis of the behavioral pattern of the Colombian import control agency INCOMEX by Diaz Alejandro confirms this observation. The same author maintains however that the industrial entrepreneurs in Colombia felt that this agency served also as the major "balwark against foreign competition and at the same time an even more reliable supplier of cheap imported inputs".<sup>12</sup>

In its 1970 report, the World Bank was more critical, maintaining that licensing had created several negative effects on the efficient allocation of resources in the Colombian economy.<sup>13</sup> First it was argued that the controls had contributed to lower quality of domestic consumer goods, many of which did not need any protection since they had been an integral part of the economy for many years. Secondly and more seriously, the control system was creating bottlenecks in the production during periods of exchange scarcity and excess capacity when liberalization experiments were implemented.<sup>14</sup>

To what extent the investment of machinery and equipment fluctuated according to the Colombian imports can be derived from the fact that in the early 1950s over 90 % of these investments were imported and that share was still 68 % between 1970 and 1972. Not surprisingly regressions between these two variables were both high and significant.<sup>15</sup> Although the coefficients are smaller, the close relationship also holds for the industrial investment in Colombia and the capacity to import of their economy as shown in the following equation:

$$\ln I_m = 3.1343 + 0.7205 \ln CI_{t-1} \quad R^2 = .51$$

(1.7727)<sup>x</sup>      (0.1892)<sup>xx</sup>      DW = 1.50

<sup>x</sup> significant at the 5 % level

<sup>xx</sup> significant at the 1 % level

where

$I_m$  = investment in machinery 1950-1965

$CI_{t-1}$  = capacity to import 1949-1964

The discussion of the investment and industrialization pattern during the late Twenties and Thirties have shown that the importance of foreign exchange availability to further capital formation does not necessarily mean an immediate increase in industrial output. Although industrial growth did not follow a completely independent pattern, Figure 2 demonstrates that its relatively minor fluctuation and its continuous positive development indicates that foreign exchange fluctuations - and with it the capacity to import - had a much lesser impact on industrialization than on the capital formation process.

## 2. The Role of Monetary and Fiscal Policy in the Import Substitution Process

Monetary and fiscal policies have been used quite frequently in LDCs to stabilize and stimulate the overall economy and to favour or discriminate through channelling credits at differential interest rates to particular sectors and supplying differential tax treatments and subsidies. If industrialization would have been indeed the major goal of the various Colombian governments one would have expected preferential treatment for this sector in the fiscal and monetary system.

Figure 2 - INDUSTRIAL GROWTH AND FLUCTUATIONS IN GROSS INVESTMENT  
1952 - 1972

growth  
rates in %

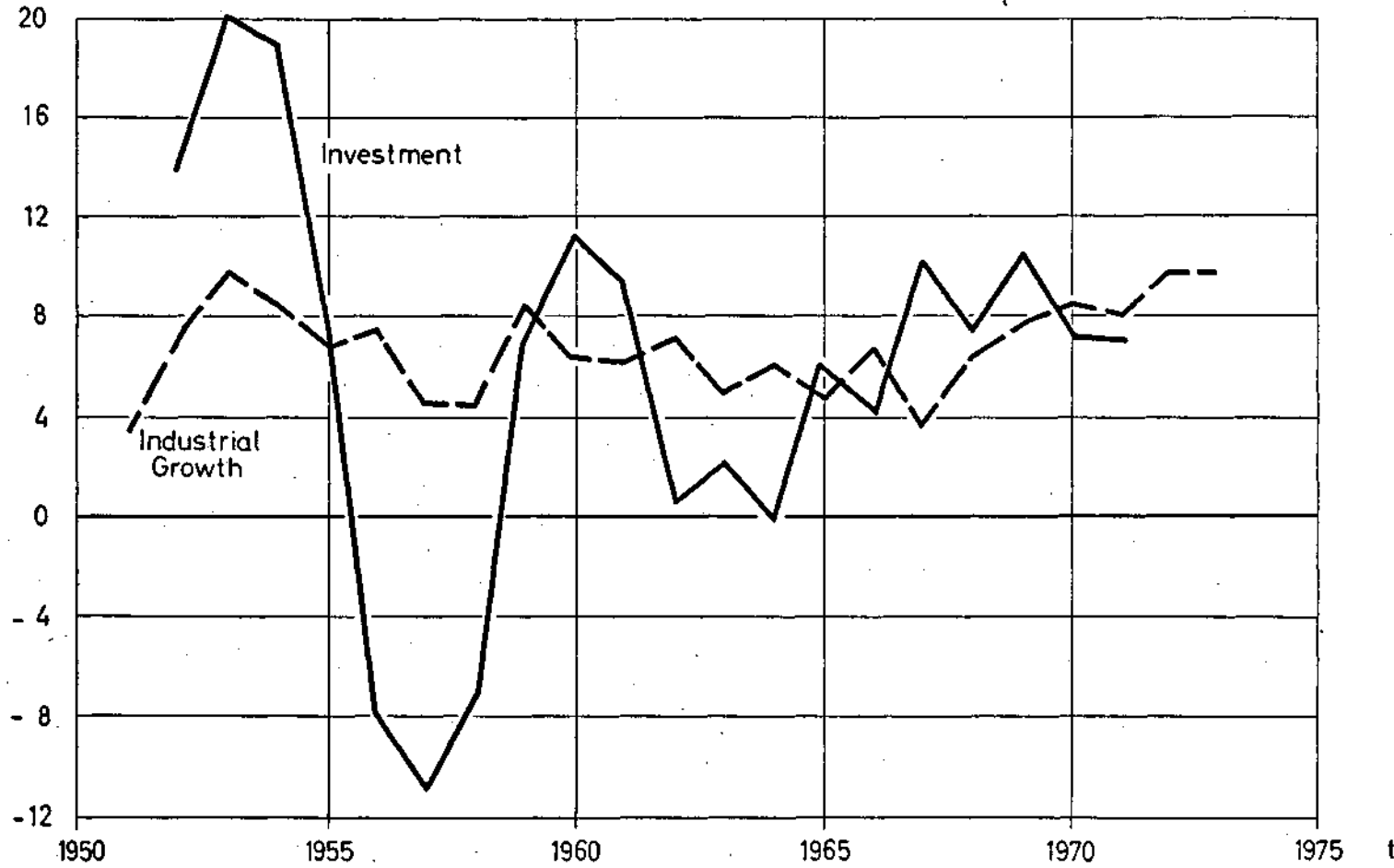




Table 9 has shown that monetary policy tried to influence the pattern of imports by asking importers to deposit between 10 and 130 % of the value of their imports upto six months prior to the arrival of the commodities. Both rates and time periods have been altered many times during the period under consideration, including the granting of certain exemptions for capital goods going to public enterprises and basic industrial imports from LAFTA countries. In general these policies contributed to the constant shortage of working capital Colombian industrial firms were suffering from and which seems to be still one of the major bottlenecks of a smooth functioning business management.<sup>16</sup>

In addition to the prior deposit system for imports, industry had to render certain pension funds (which they formerly had used for internal financing) to the social security institute, which channelled most of these funds into the central mortgage bank. Since 1970/71 that institution attracted further loanable funds by being able to offer a high and inflation indexed interest rate to lenders,

Although the agrarian sector received both preferential interest rates and special earmarked funds (which the commercial banks had to grant to the primary sector), the share of loans going to this sector remained rather constant (about 30 %), whereas industry raised its share from 28 to 39 % between 1960 and 1967. The loser was commerce, the share of which fell from 42 % to 30 % during the same time period.<sup>17</sup>

In order to stimulate medium and long-term finance into domestic industry as well as to channel foreign funds into the secondary sector, the Colombian government created Corporaciones Financeras in 1960.

These financial intermediaries had been proposed by the national industrial association (ANDI) as well as some international organizations (such as the World Bank and the Federal Reserve System). Although there was initial animosity of the private sector because of the semi-public character of these institutions, the Financeras have become a vital tool in the development process of Colombian industry, providing nearly a quarter of total credit which this sector received during the late Sixties. The balance of the corporations reflect the growing importance of these new sources of credit quite significantly; their share in total finance was 11 % in 1960, climbed to 33 % in 1963, and although later data are not available, the statistics on total bank credits (i.e. commercial banks and Financeras) in overall financing increased substantially reaching 50 % in 1968 after having only been 30 % in 1960. Consequently, it has been argued that the loans from the Financeras substituted internally and externally generated funds of Colombian national enterprises which were now able to grant credits to their customers in a more lenient way than previously.<sup>18</sup>

Colombian fiscal policies affected industry in many ways. Here only a short discussion of the tax incentive system will suffice. It particularly favoured basic and complementary industries as well as granted special tax cuts for import substituting and exporting firms of non-traditional products.<sup>19</sup> Although the so-called basic industries included iron and steel, non-ferrous metals, machinery and machine tools, paper and products, artificial fibres, a number of chemical products, sulphur, coal and asbestos and some others, it has been estimated that less than 30 firms used these incentives in 1963 decreasing the tax revenue for that year by approximately 17 m. pesos.<sup>20</sup>

An even smaller number of firms received up to 100 % income tax exemptions between 1961 and 1969, because they bought 50 % and more of their inputs from the national steel mill, Acerias Paz del Rio, S.A. The stimulation of new branches to complete import substitution is also reflected in tax exemptions for automobiles and their parts, electrical appliances, ships, machinery, and printing and publishing industries. Finally, 15 % of the net taxable income was allowed to be exempted in order to build reserves for the recuperation of fixed assets, upto the amount of those assets bought before 1957. Although estimates of all the incentives have been made for individual years, such as for 1963 when the tax loss was said to amount to 7 % of the income tax assessment, it is impossible to evaluate their benefits as long as one does not know to what extent Colombian industrial investors reacted to them. Even the various tax missions to Colombia have not been able to come up with any cost-benefit ratios.<sup>21</sup>

There is, however, quite a stock of experience with tax incentive schemes all over the world which would raise the following objections to these schemes: first, empirical studies have shown that from all the factors influencing investment decisions of private business, exemptions from income taxes play a minor role, largely because they are not very helpful during the first years of operation, when profits are often low or negative. Secondly, the granting and administering of tax exemptions is difficult and there is a tendency that other groups will also press for similar privileges, lowering badly needed fiscal revenues and turning specific incentives to key industries into general subsidies for business. It is then also interesting to note the World Bank opinion that the Colombian government is levying an excess profit tax on corporations "in order to recover some of its implicit subsidies to the business sector".<sup>22</sup>

A more specific fiscal and monetary effort of the Colombian government to support domestic industry can be seen in the formation of an industrial development organization, the Instituto de Fomento Industrial (IFI) in 1940. Realizing the inability of the private sector to plan and implement major industrial ventures, such as steel or heavy chemicals, the Institute invested in these fields to make Colombia more independent from foreign supplies of intermediate products and capital goods.

Since 1940 public investment has grown rapidly, its relative importance has nearly doubled from 15 % of total investment to 28 % of total investment in 1968.<sup>23</sup> These figures include both, the major investments of IFI in basic industry and public investment by other government agencies, which are mainly concentrated in the fields of transport, communication, power generation and distribution. As such these autonomous agencies serve industry only indirectly, though the possible subsidies are substantial.<sup>24</sup>

The major direct participation besides basic metals, and heavy chemicals, has taken place in petroleum drilling and refining. In spite of the increasing involvement in industrial activities, however, the share of public output in total industry is still very modest and far below the public sector participation of Brazil, Mexico or Chile.

### 3. Growth and Structure of Colombian Industry 1953-1967

Since the foreign sector's impact continued its unstable development and domestic policy response was not able to counterbalance these influences effectively, it is no surprise that the development of the Colombian economy in general and the industrial sector specifically did

not advance as rapidly as planned during the Fifties and Sixties. Table 9 shows that the compounded growth rate for the gross domestic product amounted to 4.7 % between 1950 and 1965. This means a per capita growth rate of 1.4% which was rather slow due to the rapid increase in population. Industry was the most dynamic sector but even here the expansion during the major import substitution process was moderate and tended to decelerate until 1967. Substantially higher increases have only been realized between 1970 and 1973, which benefited both from rapidly expanding foreign demand and stimulation of construction activities.<sup>25</sup>

A more detailed picture of the manufacturing output development between 1953 and 1967 is given in Table 10. The overall growth rates differ slightly from the previous figures, not only because they are average rather than compounded rates, but mainly because of slightly different time periods involved. 1967 marks a better breaking point than 1965, since it was in 1967 that Colombia decided to use an overall export strategy, which included a change in incentives, the sliding peg, and a more continuous effort to liberalize imports.

The slowing down of overall industrial growth in the Sixties reflected in the missing dynamics of the intermediate and capital goods industries which had provided a powerful impetus in the Fifties. Immediate increases in output after the installation of new capacities in petroleum and basic metals were not sustained in the Sixties. A similar decline took place in electrical machinery, which had started from scratch in the mid Fifties. The capital goods sector experienced the fastest growth, but its share of total industrial output had been a mere 1.4 % in 1953 which it was able to raise to 4.7 % in 1967. The situation was similar in the durable consumer goods industry which grew by nearly 10 % but whose contribution to total industrial growth

Table 9

ANNUAL CUMULATIVE GROWTH RATES OF THE COLOMBIAN ECONOMY, 1950 - 1973<sup>a</sup>

	1950-1960	1960-1965	1965-1973
Gross Domestic Products.....	4.7	4.7	6.1
Agriculture.....	3.1	2.8	4.4
Mining.....	5.6	4.0	0.6 <sup>b</sup>
Manufacturing.....	6.6	5.6	7.3
Other sectors.....	5.1	5.8	6.5 <sup>b</sup>
Population.....	3.2	3.2	3.2
Per Capita GDP.....	1.4	1.4	2.9
Labor Force.....	2.1	2.3	n.a.

<sup>a</sup>Except for population and labor force the growth rates are in real terms of 1958 prices. - <sup>b</sup>1965-1970.

Source: Computed from: Banco de la Republica, Sintese Cuentas Nacionales de Colombia, 1950-1970. Estimates for 1971-1973 from the same institute. Population data from United Nations, ECLA, Boletin Estadistico de America Latina, various issues.

Table 10

GROWTH OF MANUFACTURING OUTPUT, 1953 - 1967

Industries	1953-1960	1960-1967	1953-1967	Growth of Output per Worker	Contribution to Growth
<u>Non-durable Consumer Goods</u> .....	4.3	4.6	4.4	2.9	46.2
Food.....	1.7	5.2	3.5		
Textiles.....	8.4	3.5	5.9		
Pharmaceuticals.....	13.5	10.5	12.0		
<u>Durable Consumer Goods</u> .....	10.5	9.4	9.9	3.9	7.7
Rubber products.....	11.2	9.1	10.2		
Electrical Appliances.....	18.8	12.5	15.1		
Motor vehicles.....	6.9	12.6	9.7		
<u>Intermediate Goods</u> .....	12.8	6.9	9.8	5.3	40.4
Paper and products.....	18.1	14.3	16.2		
Chemicals, others.....	17.6	21.0	19.2		
Petroleum.....	17.5	2.8	10.1		
Non-metallic mineral products.....	6.9	6.8	6.9		
Basic metal.....	41.8	3.2	22.5		
Metal products.....	13.3	8.1	10.7		
<u>Capital Goods</u> .....	15.6	10.4	13.0	1.6	4.7
Mechanical machinery.....	10.8	7.8	9.3		
Electrical machinery.....	34.7	13.8	24.2		
TOTAL.....	7.0	5.8	6.4	3.1	100

Source: International Bank for Reconstruction and Development, Economic Growth of Colombia: Problems and Prospects, Baltimore and London: The John Hopkins University Press, 1972.

amounted to only 7.7 %.

On the other hand, the two leading sub-groups of manufacturing, non-durable consumer goods and intermediate products contributed nearly equally to growth. Here the dynamics of import substitution can be seen more clearly. Output and productivity grew nearly twice as fast for the intermediate goods than for the non-durable consumer goods which was constrained not only by the alleged income inelasticity of demand but also by the slow growth in per capita income itself.

The different growth rates led to changes in the structure of industrial output between 1953 and 1968 which were quite significant. The comparative data of column 1 and 2 of Table 11 reflect these changes. The share of non-durable consumer goods fell from 66 to 51 % whereas metallurgy, machines and transport equipment rose from 6 % to 13 %, especially noteworthy is the increasing contribution of chemicals, petroleum and coal products.

Table 11 also compares the actual industrial structure of Colombia in 1953, 1963 and 1968 with the "normal" structure which is derived from a cross-sectional comparison of the relationship between countries' per capita income, market size, and the degree of industrialization. A comparison between the actual and normal shares in the three selected years shows that Colombia approached a more typical pattern of industrialization in the Sixties. The ratios of the actual over the normal percentages were approaching unity in 1968. Whereas the <sup>standard deviation</sup> / of this ratio was still .8 in 1953, it fell to .56 in 1963 and to .42 in 1968.



Table 11

## ACTUAL AND NORMAL STRUCTURE OF COLOMBIA'S MANUFACTURING SECTOR 1953, 1963, 1968

(% of total value added at current factor costs)

Sector	ISIC Nr.	1953		1963		1968		Ratios of actual over normal shares				
		Actual Share	Normal Share	Actual Share	Normal Share	Actual Share	Normal Share	1953	1963	1968		
Food Products	20	18.5	14.2	15.7	14.1	14.7	14.0	1.30	1.11	1.05		
Beverages	21	19.6	7.9	13.4	6.6	13.7	6.1	2.48	2.03	2.25		
Tobacco	22	3.6	6.8	4.0	5.2	4.4	4.9	0.53	0.77	0.90		
Textiles	23	15.1	10.9	13.0	12.8	13.9	13.5	1.39	1.02	1.03		
Clothing and Footwear	24	9.4	2.9	4.2	3.3	4.3	3.3	3.24	1.27	1.30		
Wood and Cork Products	25	1.4	4.7	1.0	3.7	0.9	3.3	0.30	0.27	0.27		
Furniture	26	1.7	1.9	0.6	1.8	0.8	1.8	0.89	0.33	0.44		
Paper and Paper Products	27	1.1	2.7	1.9	2.6	2.9	2.5	0.41	0.73	1.16		
Printing and Publications	28	2.7	3.7	3.1	3.6	2.8	3.5	0.73	0.86	0.80		
Leather and Leather Products	29	2.1	1.2	1.1	1.1	0.9	1.1	1.75	1.00	0.82		
Rubber Products	30	2.2	2.6	2.5	2.4	2.5	2.4	0.85	1.04	1.04		
Chemicals	31	7.0	10.6	13.3	11.1	12.8	11.5	0.66	1.20	1.11		
Petroleum and Coal Products	32	1.1	4.2	3.7	3.8	4.1	3.8	0.26	0.97	1.08		
Other Non-metallic Mineral Products	33	}	4.8	5.5	5.1	5.4	5.2	}	1.08	1.04		
Basic Metals	34		7.3	2.8	2.1	3.5	2.0		3.8	1.52	0.60	0.53
Fabricated Metal Products	35		5.0	4.5	5.0	4.8	5.0		0.90	0.96		
Non-electrical Machinery	36	}	2.0	1.2	2.3	1.1	1.9	}	0.52	0.58		
Electrical Machinery	37		6.1	2.7	3.2	3.1	2.9		3.4	0.34	1.03	0.85
Transport Equipment	38		5.5	2.6	6.0	2.1	6.0		0.42	0.35		
Miscellaneous	39		2.7	2.7	3.0	3.1	3.1	0.41	0.90	1.00		
								$\bar{e}=0.8034$	$\bar{e}=0.5598$	$\bar{e}=0.4169$		

Source: Computed from Departamento y Administración Nacional de Estadística (DANE) on the basis of regression estimates by G. Fels, V.W. Schatz, F. Wolter, "Der Zusammenhang zwischen Produktionsstruktur und Entwicklungsniveau." *Weltwirtschaftliches Archiv*, 106.1 (1971), pp. 240-272.

In general, the comparative data reflect the rapid growth and possibly over-expansion of chemicals, petroleum and coal derivatives, as well as paper and rubber industries, and the lesser importance of the previously dominating food, textile, clothing and footwear manufacturing. The only industry which continued to contribute far above its normal share was the beverage producers, whereas under-representation seemed to be largest in traditional branches of wood and furniture production and two newer industries: basic metals and transport equipment. In the latter case, import substitution was still in its infancy facing a relatively small market and an underdeveloped road system, but the decline in the furniture industry seems to be characteristic for a branch which is mainly made up of small and medium-size firms.

The role of import substitution is reflected in Table 12 which compares the shares of imports in total supplies of nine industries for 1953 and 1967. The amount of imports which would have prevailed if the 1953 share had remained constant, is shown for each industry in column 4. If we take these dollar amounts as percent of changes in total industry output we get an estimate for the importance of import substitution in each industrial branch and for the nine industries as a whole.

The methodological problems of this type of procedure which has been introduced by Chenery have been discussed elsewhere and do not need to be repeated here.<sup>26</sup> In addition, the presented data are both, incomplete and the 1953 import share of several industries conflict with the data earlier provided by the ECLA study. Nevertheless, it can be maintained that import substitution played an important role in the Colombian industrialization process, probably more important than in the large Latin American countries. It seems to have been crucial in the intermediate and capital goods sector.

Table 12

IMPORT SUBSTITUTION IN VARIOUS SECTORS OF COLOMBIAN INDUSTRY, 1953 - 1967

(in %)

Sector	$\left(\frac{M_i}{Z_i}\right)_{53}$	$\left(\frac{M_i}{Z_i}\right)_{67}$	Import Substitution (IS) in mill. US \$	$\frac{IS_i}{\Delta Z_i}$
Basic metals	88.5	31.6	78.010	88.1
Petroleum and coal products	57.2	8.5	40.908	76.8
Metal products	58.5	10.5	49.296	71.9
Chemicals	76.8	36.5	79.230	69.6
Paper products	64.4	25.9	33.033	60.3
Textiles	30.0	4.4	36.122	50.1
Leather	4.0	0.0	976	33.7
Wood products	12.5	1.1	2.063	23.9
Non-metallic mineral	11.6	3.6	7.504	14.1

$M_i$  = Imports of good i

$Z_i$  = Total supplies of good i

$\Delta Z$  = Increase of total supplies in various industries.

Source: Computed from: International Bank for Reconstruction and Development, Economic Growth of Colombia: Problems and Prospects, Baltimore and London: The John Hopkins University Press, 1972.

If one looks at the aggregate data between 1953 and 1973 there is also some explanation for the decline of the industrial growth rate during most of the Sixties. Whereas import substitution played a dominant role between 1953 and 1963, its share in total industrial demand fell from 38 % to 4 % in the following years and recovered only slightly after 1968. At that time the export diversification drive had started to play a more important part, contributing with 11.6 % to the expansion of industrial production (see Table 13). Even more dramatic than the difference in growth rates are the changes in industry's labour absorption during the three periods under consideration. To what extent the export diversification drive contributed to fuller employment will be discussed in Chapter III. Here it is important to relate the growth and decline of import substitution not only to the industrial sector's growth of output and employment but also to its effects on microeconomic efficiency and the saving of foreign exchange.

#### 4. Import Substitution, Economic Efficiency and the "Learning Effect" in Colombian Industry

One major problem which became acute during the Colombian industrialization process in the Sixties was the underutilization of human and physical capital. With respect to the excess capacity issue, Munk wrote in an evaluation of the automobile industry that "it is not clear why developing countries fail to achieve significant cost reductions as output expands, but one characteristic of production in these countries is inefficient use of existing production capacity."<sup>27</sup> This had also been the contention of other observers of the Colombian economy in the early Sixties and a sample survey which had been undertaken in 1960/61 seemed to provide the empirical evidence for it.<sup>28</sup> Out of the 342 responding firms, 55 % were working only 8 hours, i.e. one shift; most of these firms belonged to the "traditional industries" such as clothing and shoes, furniture, leather goods, tobacco, and some food processing industries.

Table 13

IMPORT SUBSTITUTION, EXPORT DIVERSIFICATION AND INDUSTRIAL  
DEVELOPMENT, 1963-73  
(in percent)

	1953	1963	1968
<b>INDICATORS OF IMPORT SUBSTITUTION AND EXPORT DIVERSIFICATION</b>			
1. Imports (cif)	544	506	643
2. Industrial Production <sup>a</sup>	994	1 938	2 585
3. Total Supply of Industry (1+2)	1 538	2 444	3 228
4. Industrial Exports	5	19	54
	<u>1953-63</u>	<u>1963-68</u>	<u>1968-73</u>
<b>INDUSTRIAL GROWTH AND ITS FACTORS</b>			
1. Annual Average Growth Rates of Industrial Output	7.4	5.3	9.3
2. Annual Average Growth Rates of Industrial Employment	3.5	1.6	8.3
3. Sources of Industrial Growth (in % of Industrial Output)			
a) Domestic Demand	61.0	91.7	77.8
b) Import Substitution	38.0	4.0	7.7
c) Export Diversification	1.0	4.3	15.0
<sup>a</sup> Value Added of Industrial Production in 1968 pesos.			

Source: Computed according to the Chenery method from unpublished data of Banco de la Republica and INCOMEX.

Multiple shift work was common in the "continuous process" industries such as petroleum refining and chemical industries, breweries and sugar refining, paper and pulp, and plastics. In general 43%<sup>of the firms</sup> worked on a two shift basis at least with part of their equipment, and 27.5 % did work with part of their capital around the clock. While even within the group working on a multiple shift basis it was admitted that some machines remained idle, and that a sudden increase in demand could be satisfied by using larger shift crews, the excess capacity thesis could not be convincingly proven, because all firms planned to increase investment in the near future, i.e. they seemed to consider their unused machines as a necessary means to increase supplies originating from sudden changes for unused capacity; in addition it seemed that not insufficient demand but insufficient financing and unreliable energy supplies were the major causes of unused capacity.

On the other hand there was no doubt about the underutilization of Colombian manpower. Although rising un- and underemployment in Colombian cities, which have been estimated to reach 25 % in 1967<sup>29</sup>, were a function of both, rapidly increasing population growth and urban migration on the supply side as well as the inability of all economic sectors to absorb more manpower on the demand side, the drop of industrial employment expansion from 3.5 to 1.6 % after 1963 shows that the modern manufacturing sector was particularly responsible for the increasingly serious situation in the labor market.

The inability of the manufacturing sector to increase employment rapidly in LDCs has been explained with distortions of factor prices and the inelasticity to substitute labor for capital. The evidence for the first allegation is rather clear. Long term credit, especially for the heavy intermediate industries, in which the state participated, were granted at real negative interest rates.<sup>30</sup> Labor costs, on the other hand, have been inflated by 50 % through fringe benefits and other fees employers had to pay in addition to the basic wages.<sup>31</sup>

With respect to factor substitution, a study undertaken by the National Planning Department came to the conclusion that elasticities of substitution of 17 out of the 20 two-digit ISIC industries were close to 1, i.e. the technical structure of Colombian industry should not have prevented the adoption of a more rational factor allocation.<sup>32</sup> On the other hand, the use of a more generalized production function, which relaxed the unrealistic assumption of perfect competition and constant returns to scale, showed that all elasticities were substantially below 1 (average 0.42). Moreover in only 7 out of 20 cases was the t-ratio high enough to reject the null hypothesis.<sup>33</sup>

The changing pattern of Colombian industrialization towards more capital-intensive production processes which make factor substitution difficult is reflected in the investment figures of Table 14. A dramatic shift occurred from rather balanced shares of traditional consumer goods industries (ISIC 20-24) and the newly installed intermediate products (ISIC 30-35) for 1958/62 to large differences for 1962/67, when the relative share of the latter group was nearly twice the size of the former. It was the time when over 2.2 billion pesos were sunk into the petroleum refining industry followed by 1.4 billion pesos of investment in chemical industries. These industries are characterized by high capital-labor ratios, and direct as well as indirect employment effects are very modest. Morawetz has estimated that "for each \$ 100 million invested in petrochemicals in Colombia, some 2,500 pesos are employed, while investment of the same \$ 100 million in labor-intensive industries could create 50,000 jobs."<sup>34</sup> Similar results can be obtained from the employment multipliers of the inverted input-output table of 1968.<sup>35</sup> Whereas an increase in aggregate demand of 100 million pesos for clothing and textiles, shoes and the leather goods as well as wood products is able to raise employment directly and indirectly by over 2,700 jobs, the same rise in demand for chemical and oil refining products as well as basic metals would create not more than 1,200 employment openings.

Table 14

## NET INVESTMENT IN INDUSTRIES 1958-1969

S E C T O R	1958/63		1962/67		1968-69	
	mill. Pesos	%	mill. Pesos	%	mill. Pesos	%
Food Products	447.0	12.5	1,277.6	14.1	905.8	21.1
Beverages	232.0	6.5	274.3	3.0	381.3	8.9
Tobacco	33.9	0.9	41.3	0.5	17.6	0.4
Textiles	589.2	16.4	799.6	8.9	583.7	13.6
Clothing and Footwear	76.5	2.1	189.0	2.1	89.9	2.1
Wood and Cork Products	50.6	1.4	85.2	0.9	44.8	1.0
Furniture	14.7	0.4	26.2	0.3	17.7	0.4
Paper and Paper Products	201.1	5.6	439.3	4.9	143.3	3.3
Printing and Publications	91.4	2.6	155.0	1.7	175.9	4.1
Leather and Leather Products	40.6	1.1	55.9	0.6	33.5	0.8
Rubber Products	90.1	2.5	148.3	1.6	159.4	3.7
Chemicals	296.6	8.3	1,412.0	15.6	397.7	9.3
Petroleum and Coal Products	376.8	10.5	2,224.6	24.6	99.2	2.3
Other Non-metallic Mineral Products	306.9	8.6	657.9	7.3	368.5	8.6
Basic Metals	117.4	3.3	240.8	2.7	178.9	4.2
Fabricated Metal Products	234.4	6.5	405.3	4.5	212.0	4.9
Non-electrical Machinery	49.9	1.4	112.6	1.3	70.0	1.6
Electrical Machinery	151.0	4.2	231.0	2.6	77.9	1.8
Transport Equipment	99.0	2.8	144.8	1.6	167.6	3.9
Miscellaneous	91.1	2.5	182.7	2.0	167.4	3.9
T O T A L	3,590.2	100.0	9,033.6	100.0	4,291.4	100.0

Source: Computed from Boletín Mensual de Estadística, vol. 250-51 (May/June 1972).



The major reason for many LDCs to plunge into an import substitution program is the hope of saving foreign exchange and the import constraint on economic development. Similarly to the experience of other Latin American countries, however, the industrialization process in Colombia only changed the structure of imports not the amount. Imports' share in total supply fluctuated between 20 and 23 % from 1951 to 1965. Whereas consumer goods saw their share in total imports curtailed from 12.8 % to 6.2 %, capital goods raised their contribution from 33.4 % to 41.2 %. The import of intermediate goods remained around 53 %, in spite of the heavy import substitution in these industries. It seemed to be particularly difficult to lower the import coefficients of the chemical, rubber, and metal industries, which needed alone for their raw material inputs 45 % from abroad.

The picture is somehow more positive if one looks into the foreign exchange earnings of the newly developing intermediate products. Increasing amounts of chemicals, paper and pulp and, for a few years, also rubber and petrochemicals were sold to foreign countries. The average annual exports of these products (ISIC 28 & 30-34) amounted to \$ 15 million between 1963 and 1967, reaching approximately 50 % in industrial exports, but less than 5 % of total Colombian exports. These exports - most of which went to the other Andean countries - were, however, more a function of low marginal than low average costs of the Colombian industry. Once the large investments for plant and equipment had been undertaken, it was useful to run at close to full capacity and sell the excess output to neighboring countries at "dumping prices".<sup>36</sup> In any case these exports were not able to reduce the deficit of the current account balance which averaged \$ 570 million in 1960/63 and nearly doubled in 1964/68.<sup>37</sup> At the same time the foreign debt services, which had been 5 % of total exports in the early Fifties, increased from 15 % to 22 % of exports from 1960 to 1968.

In order to evaluate the efficiency of Colombian industry in earning and saving foreign exchange, adequate data on domestic resource

costs would clearly be required. There are presently only a number of rough estimates for several industries which indicate that the foreign exchange earnings and savings were at a substantial higher price than the exchange rate at the time of measurement. In the case of automobiles the excess costs were between 30 % and 80 % for commercial vehicles and over 100 % for passenger cars.<sup>38</sup> In petrochemicals the estimates were 50 % to 75 % above the equilibrium exchange rate and for chemicals between 30 % and 50 %.<sup>39</sup> On the other hand the domestic resource costs for clothing and shoes was below the actual exchange rate and the one for textiles was slightly above it; in that industry artificial fibres, which were produced with domestic inputs of the petrochemical industry, seemed to be responsible for the inefficiencies. The domestic resource costs for cotton textiles were below the exchange rate.

Unemployment can be regarded as "the macroeconomic counterpart of the microeconomic inefficiency which results from a system in which the economy does not have comparative advantage."<sup>40</sup> With respect to some indications of that microeconomic inefficiency it has been stated that the evidence on excess capacity is not sufficient to support the thesis that the Colombian industrialization process led to an inefficient use of capital at the firm level.

A stronger case for the possible misallocation of resources is given by a recent study on the concentration of Colombian industry.<sup>41</sup> Out of 89 three-digit ISIC industrial groups 47 % were characterized by an "oligopolistic" structure, i.e. the largest four firms shared more than 50 % of the respective markets. The dominating 150 industrial enterprises produced 53.2 % of value added in 1968. Were the concentrated industries exemplifying the "high costs, high price - high profit" profile, which seems to be typical for several other Latin American countries? There are no comparative cost data and the evidence from the pricing behavior is mixed, but in spite of the substantial differences in the estimates of the average rates of return, there is a high correlation between higher profit rates and concentration of industries.<sup>42</sup>

It is now interesting to note that the authors of the concentration study justify these profit differentials, at least in the intermediate product industries, because of the necessity to amortize the large outlays for capital goods and the requirements for substantial future investments. The barriers to entry are consequently not only a function of technology and possible collusion, but they are also directly and indirectly furthered by government policy. As a matter of fact, even the largest existing refinery in Colombia is small in comparison to the normal size of these installations in the industrialized countries and is consequently producing at substantially higher per unit costs as its competitors abroad.<sup>43</sup> The critical question is then, if that and other industries, such as steel and automobiles, will reach efficient levels of production in the foreseeable future. For two of these three industries the forecasts are pessimistic, but there is clearly some need for more empirical work at the industry level. The studies should trace the structural change from an infant industry to a relatively efficient unit of production, which will be able to compete in world markets.

In this context it is interesting that only one study has tackled one of the most important arguments in favor of protecting infant industry in less developed countries: the process of learning both by management and workers.<sup>44</sup> In analyzing the importance of learning both with respect to output and time, Dudley found that it had contributed significantly to the expansion of the metal working and machine making industries. Would any increase in labor productivity mean that these branches will be able to reduce the costs and prices to such an extent that they will be able to compete in world markets in the long run? Again more evidence is required, especially about the productivity of the factor capital. Nevertheless, it is interesting to remember that 40 years ago the Colombian textile industry was considered as much of being a "white elephant" as has been the case with the above mentioned automobile and oil refining industries in the last 10 to 20 years.<sup>45</sup> Today textiles are not only one of the most efficiently operated industries in Colombia, they also have proven to be able to compete in world markets. To what extent government policies and rapidly expanding world markets contributed to the export expansion of Colombian industry will be discussed in the following chapter.

### III. Export Promotion Policies and their Effects on Manufactured Exports 1960-1972

In the Fifties and Sixties Colombian government attempted to conserve foreign exchange and to encourage import substitution industrialization through import restrictions and protective tariffs, public financing and tax incentives, and the provision of low-cost raw material and intermediate and capital goods from abroad. Simultaneously it began to further "non-traditional" or "minor" exports, i.e. all exportable products besides coffee, petroleum, and raw hides.<sup>46</sup> Since the export promotion policies have been discussed by other authors in some detail, a summary survey will be sufficient to give the necessary background.<sup>47</sup>

#### 1. Quantitative and Qualitative Incentives of "New" Exports

Similarly to the measures to aid import substituting industry, the export promotion policy of Colombia consisted of tariff regulations, tax incentives, and credit subsidies. All policies except one applied also to agricultural and mineral exports. In addition, exchange rate policies and a systematic planning and promotion system of non-traditional exports has played a decisive part in the overall export strategy of Colombia since 1960.

Special exchange rates for minor exports were already introduced in 1948 and have existed side by side with mostly fixed rates (for imports, government transactions, and freights), free market rates (for most private capital and tourism), and special rates (for coffee and petroleum). The mixed pattern of exchange rate policies shows attempts to experiment with various systems. During three periods (1951-52, 1958, and 1965-67) the minor export rate was fixed. Most of the time that rate was flexible, however, either following the free market rate, or a special rate which was decreed by the government. Except for the export vouchers between 1952 and 1955, which gave the exporter the right to import commodities at the equivalent<sup>amount</sup> of foreign exchange earned by

his exports, the exchange rate system did not grant any other incentives but rather sudden and irregular depreciations of the peso, which were to become continuous only after 1967. In Column 9 of Table 15 the exchange rates are adjusted with an index of purchasing-power-parity between Colombia and the U.S., The deflated exchange rate shows little change until 1955, - the year the coffee prices fell first and required new export promotion. Between 1956 and 1967, the "real" exchange rate fluctuated back and forth between 8.88 and 11.86. This changed only after 1967 when the policies of the "sliding peg" raised the real rate of exchange step by step until 1974.

The fiscal incentives took the form of income tax exemptions from 1960-67, which were then replaced by tax credit certificates (Certificados de Abono Tributario - CAT). Whereas the 40 % tax cut mainly helped the already profitable enterprises to effectively reduce their tax payment, and even induced large commercial banks to go into export business, the certificates gave exporters a 15 % rebate on total sales abroad. The CATs could either be used for tax payment within a previously determined period of time or they could be sold at a discount on the stock exchange markets in Bogota and Medellin. The value of the tax subsidies are shown in column 4 of Table 15. They amounted to 14.4 % of exports from 1961 to 1967 and fluctuated around 15 % afterwards, depending on the redemption periods and the supply of and demand for the certificates in the financial markets.

In the monetary field, the Bank of the Republic was helping exporting firms by allowing them to borrow foreign funds up to one year prior to the actual transactions. These loans were repaid at the rate which had prevailed on the day of "advance exchange surrender". Since it was not difficult to anticipate the devaluation of the peso, the repayment in local currencies gave the exporters a welcome interest subsidy which was at the order of 4-6 % of the export value. Since 1967, the government established Export Promotion Fund (PROEXPO) is

Table 15  
**REAL EFFECTIVE EXCHANGE RATES FOR COLOMBIAN MANUFACTURED EXPORTS, 1948 - 1974**

1	2	3	4	5	6	7=(2+3+4+5)÷6	8	9=(2+8)×100	10=(7+8)×100
Year	Basic exchange rate	Export taxes	Tax subsidies (CAT)	Credit subsidies	Valejo Plan	Nominal effective exchange rate	Colombian prices deflated by US prices	"Real" basic exchange rate	"Real" effective exchange rate
1948	2.36	-	-	-	-	2.36	33.0	7.15	7.15
1949	3.02	-	-	-	-	3.02	34.9	8.65	8.65
1950	3.11	-	-	-	-	3.11	38.0	8.18	8.18
1951	2.53	-	-	-	-	2.53	36.7	6.89	6.89
1952	2.92	-	-	-	-	2.92	37.1	7.87	7.87
1953	3.47	-	-	-	-	3.47	40.1	8.65	8.65
1954	3.49	-	-	-	-	3.49	42.6	8.19	8.19
1955	4.15	-	-	-	-	4.15	43.3	9.58	9.58
1956	5.09	-	-	-	-	5.09	46.5	10.95	10.95
1957	6.18	-0.25	-	-	-	5.93	54.8	11.28	10.82
1958	6.32	-0.13	-	-	-	6.19	63.3	9.98	9.78
1959	7.64	-0.15	-	-	-	7.49	69.2	11.04	10.82
1960	6.90	-0.14	-	-	-	6.76	72.0	9.58	9.39
1961	8.28	-0.04	-	-	-	8.24	77.1	10.74	13.41
1962	9.11	-	1.19	-	0.91	10.34	79.0	11.53	14.38
1963	10.00	-	1.44	-	0.92	11.36	100.0	10.00	12.36
1964	10.41	-	1.50	0.07	0.93	12.91	117.25	8.88	11.01
1965	14.76	-	2.13	0.39	1.55	18.83	124.4	11.86	15.14
1966	13.50	-	1.94	0.29	1.52	17.25	141.7	9.53	12.17
1967	14.51	-	2.48	0.58	1.55	19.12	150.7	9.63	12.69
1968	16.30	-	2.46	0.55	1.68	20.96	156.2	10.44	13.42
1969	17.35	-	2.48	0.26	1.83	21.92	160.4	10.82	13.67
1970	18.49	-	3.08	0.81	2.00	23.76	166.5	11.11	14.27
1971	20.00	-	3.08	0.81	2.28	26.17	177.2	11.29	14.77
1972	21.90	-	3.29	1.13	2.30	28.62	181.3	12.08	15.79
1973	23.70	-	3.55	1.27	2.61	31.04	195.8	12.10	15.85
1974	26.08	-	3.91	1.23	3.00	34.22	230.4	11.32	14.85

a Colombian wholesale price index divided by US wholesale price index. 1963 = 100.  
 For 1971-74 the Colombian wholesale price index is substituted by the export price index.

Source: Computed from J.D. Teigsiro and R.A. Elson, "The Export Promotion System and the Growth of Minor Exports in Colombia", IMF, Staff Papers 20.2 and calculations based on unpublished data from Banco de la Republica.

attempting to take over the lending to exporters. Until 1972 total export loans channeled through that institution amounted to less than 10 % of outstanding short-term liabilities of commercial banks lending for export prefinancing. Its participation has, however, grown substantially in 1975 to make up for the reduced subsidies.

The financial value of the special credit facilities can be estimated by taking the differential of interest rates in foreign markets (Eurodollar rate) and domestic rates, and adjust them for the commission fee Colombian banks received for their brokerage services. The resulting difference is then multiplied with the share of total exports which these loans prefinanced. The subsidies fluctuated according to the level of change of international interest rates, averaging 2.7 % of the basic exchange rate between 1960 and 1974. (Column 5, Table 15).

Exporters of industrial products received a third major benefit from the Vallejo Plan, which has allowed them to import raw materials, intermediate inputs, and capital equipment without prior licence, advance import deposits, and free of customs duties since 1959. Rather stringent rules ensured that only firms which really used these inputs for producing manufactured exports succeeded in receiving these benefits. Since this feature benefited gross exports receipts rather than the value-added contribution of exported products and led to more intensive importing than desirable, changes were introduced in 1967. With a "drawback" system, which makes the refunding of tariffs for imported inputs dependent on value-added of exports, and the granting of freedom from licensing and prior deposits only on the basis of previous exports, it was hoped to direct the incentive features towards a better allocation of resources.

The import preferences under the Vallejo Plan are difficult to quantify, because they require computations of average imported components of manufactured exports, average effective import duty,

average rate of advanced import deposits, and the number of months these deposits were held by the Central Bank as well as the prevailing interest rate in Colombia. For the 15 years under consideration this special subsidy for manufactured exporters amounted to 10.5 % of the basic exchange rate.

If one now compares the "real effective" exchange rate in Column 10 during the 1960s with their development during the Fifties, the difference becomes quite obvious, the respective averages being 14.4 and 9.0 pesos per dollar; in other words, exporters have received about 60 % more in pesos for each earned dollar of exports since the introduction of the various export promotion measures.<sup>48</sup>

In addition there are a number of non-quantifiable features which have helped to stimulate Colombian exports in the 1960s and which have become even more important now since the direct and indirect subsidies have been reduced. With Decree No. 444 of 1967 on exchange rates and foreign trade, Colombia did not only revise many of the earlier incentives, it also founded an institution for the promotion of exports (PROEXPO), which was originally financed from a 1.5 % tax on imports, the rate of which has been increased to 3.5 % in 1975.

This institution has a number of tasks which range from the granting and insurance of export credits to dissemination of information relevant to exporters, education and training of certain exporting techniques, and actual marketing and advertising. Although the actual performance is difficult to measure, the evidence seems to indicate that PROEXPO is playing an increasing role in fostering non-traditional exports.

In spite of the rather modest role in arranging for credit in the first year of its existence, interviews with industrial enterprises in 1972 showed that the majority of the medium-size firms have made use of these credits and found them helpful in solving the problem of



working capital shortages.<sup>49</sup> The credit insurance of exports which covers 75 % of economic and 80 % of political risk, was fully implemented in 1969 and is similarly regarded as a necessary device in promoting exports.

With respect to the dissemination of information, PROEXPO has been actively engaged in providing Colombian exporters with various types of analysis for export markets, sales methods, as well as freight and insurance problems. Since the transportation system, both within Colombia and with its neighbors, is still a major bottleneck in the expanding exchange of goods and services, PROEXPO has concentrated its efforts on that sector and has succeeded in achieving freight reductions for a number of industrial products within the LAFTA and other countries of the Western Hemisphere.

In an empirical study which concentrated on the information aspect in the exporting of 120 Colombian firms in the four major cities during 1972/73, the researchers found that over 50 % of the firms thought direct travel still the most important and complete channel of information which was followed by the information provided by PROEXPO and other agencies (12.5 % used them as first, 10 % as second and 7.5 % as a third means of information).<sup>50</sup> If one combines those figures with publications, a large part of it which was also provided by PROEXPO, the amount of first channel information increases to 25 %, ranging far above such other possibilities as market studies conducted by exporters themselves, foreign buyers, and business contacts other than exporters.

In the field of technical aid, PROEXPO has provided exports for solving such problems as packaging, quality control, and the organization of the required paperwork (ranging from writing out offers to fulfilling the various formalities with the administrative bureaucracies). Most importantly it has engaged in active marketing. In direct contact with the exporters it has engaged in advertising Colombian products in the most important world markets. This task is

especially done by the 17 trade bureaus in America, Europe and Japan and the international fairs which PROEXPO organizes or in which it supports the participation of Colombian exporters. In addition, PROEXPO has contributed to the formation of trading companies which - fashioned after the Japanese model - have successfully been introduced into Brazil. Although the emergence of a few large trading companies will probably lead to further concentration of Colombian exports of manufactures, this type of institution building will have wide ranging effects in the long run and should help to maintain and raise Colombian exports, even when the direct subsidies will be reduced continuously.

## 2. The Expansion of Minor Agricultural and Manufactured Exports

Did Colombian non-traditional agricultural and manufactured exports react positively to the various stimuli which have been given to them since 1960? The data in Table 16 seem to give a clearly positive answer. Minor exports which had amounted to an annual \$ 50 million between 1954 and 1960, tripled between 1966 and 1969 and reached an average of over \$ 450 million between 1970 and 1974. Their share in total exports jumped from 10 % to nearly 45 % within less than 20 years. Industrial products were the fastest mover, growing at an annual rate of over 20 % in the Sixties and over 60 % in the Seventies. Its share in 1970-74 surpassed non-traditional agricultural products, which themselves were able to double their growth rate twice: from 7.7 % in the 1950s to 14.5 % in the Sixties and 31.3 % in the early Seventies.

The rather sharp increase in Colombian exports between 1970 and 1974 will have to be checked again, when the National Statistical Institute publishes the actual trade data on a customs basis for 1973 and 1974. In the past, registered exports have surpassed "customs" exports by 2 to 10 %. In addition the last two years have witnessed a number of "fictitious" exports which were undertaken to cash in on the tax certificate (CAT) and other incentives. These two inflating trends are somewhat deflated by the unrecorded border trade, which is

Table 16

## VALUE, SHARES AND GROWTH RATES OF COLOMBIAN EXPORTS 1950 - 1974

	Average Annual Value in mill. US \$				Annual Growth Rates (%)			Share of Total Exports (%)			
	1950-57	1958-65	1966-69	1970-74	1950/53 to 1958/61	1958/61 to 1966/69	1970 to 1974	1950-53	1958-61	1966-69	1970-74
<b>I. MAJOR EXPORTS</b>	493,3	414,8	393,0	577,3	- 1.3	- 0.6	13.6	92.8	89.7	72.0	55.8
1. Coffee	422,2	341,2	336,5	551,6	- 1.6	- 0.1	16.7	78.3	74.0	61.7	53.3
2. Petroleum	71,2	73,6	56,6	25,6	0.1	- 3.1	-36.7	14.5	15.7	10.3	2.5
<b>II. MINOR EXPORTS</b>	43,5	64,0	152,8	457,6	3.6	15.8	43.0	7.2	10.3	28.0	44.2
1. Agricultural products	21,0	37,3	81,6	200,3	7.7	14.5	31.3	3.1	6.0	15.0	19.4
2. Minerals	11,9	1,3	5,6	36,9	-36.8	24.5	82.8	2.4	0.2	1.0	3.5
3. Industrial products	5,8	20,1	58,8	220,4	18.0	20.2	61.8	0.7	3.0	10.8	21.3
<b>TOTAL EXPORTS</b>	536,8	478,8	545,8	1034,9	- 0.9	2.2	26.5	100	100	100	100

Sources: Computed from DANE, Anuario de Comercio Exterior, various years; the calculations for 1970/74 are derived from unpublished statistics of INCOMEX and PROEXPO, Departamento de Investigaciones.

particularly strong between Colombia and Venezuela. Keeping these reservations in mind it seems, nevertheless, certain that the growth of the non-traditional products accelerated in 1972 and 1973, before new problems of domestic supply shortages for important agricultural products, chemicals, and building materials made export controls and restrictions necessary, dampening the 1974 growth rates and the prospects of continuous rapid expansion for the coming years.

Besides the rapid increase in total exports, there is ample evidence that Colombia was able to diversify its exports in the Sixties and early Seventies and that this process is to continue during most of the Seventies. An analysis of the concentration ratio between 1962 and 1969/72 showed that the degree of diversification rose by about 8 %.<sup>51</sup> This may not be a large amount, it is however, significant if one realizes that the other members of the Andean Pact were able to raise this degree of diversification by less than 2 %, with Peru and Chile actually suffering from a higher degree of concentration in 1969/70 than in 1962.

Table 17 lists some important export industries and their performance between 1965 and 1973. The dominant role of textiles and more recently clothing is obvious. Their share in total industrial exports rose to 25 % in 1971/73, averaging \$ 50 mill. during those years. The same table also shows the growing importance of other more labor-intensive goods, such as shoes, leather goods, and furniture. Although the absolute amounts of several producer goods were still substantial, the share of such products as paper and cardboard, cement, and some chemicals decreased after 1970. Before we analyze the changing pattern in greater detail, a look at the most important export markets is in order.

### 3. Colombia's Export Markets and the Issue of Comparative Advantage

With respect to Colombia's most important customers, Table 1 has shown that the U.S. participation had substantially declined after the

Table 17

## EXPORTS OF IMPORTANT MANUFACTURED GOODS 1965 - 1973

I n d u s t r i e s	Average Annual Value in mill. US \$			In Percent of Industrial Exports		
	1965/67	1968/70	1971/73	1965/67	1968/70	1971/73
Textiles	7.2	12.4	34.3	17.5	16.7	16.9
Clothing	0.5	0.8	16.1	1.2	1.1	7.9
Shoes	-	1.2	3.8	-	1.6	1.9
Leather goods	5.3	4.8	15.1	12.9	6.5	7.4
Wood	0.2	4.4	6.5	0.5	5.9	3.2
Furniture	-	0.6	4.8	-	0.8	2.4
Paper	5.3	7.6	7.8	12.9	10.2	3.8
Pharmaceuticals	2.6	2.7	5.8	6.3	3.6	2.9
Glass and Glassware	0.3	3.1	3.7	0.7	4.2	1.8
Cement	2.9	4.1	5.7	7.1	5.5	2.8
Agricultural Machinery	0.2	1.4	1.7	0.5	1.9	0.8
Sub-Total	24.5	43.1	105.3			
Total Industrial Exports	41.1	74.2	203.5			
Selected Exports as percent of Total Exports				59.6	58.0	51.8

Source: Computed from H. Calvo and J.F. Escandon, Las Exportaciones Colombianas de Manufacturas 1963-1971 (Bogota, 1973) and unpublished data of INCOMEX.

peak of the coffee boom in 1954. Although the Latin American share had risen from 1.6 % to 6.8 % in the Sixties, it was still very small compared to the volume of exports going to the European and North American countries until recently. The latest figure for 1973/74 indicate, however, that Colombia has - at least for the last two years - dramatically altered its trading pattern in favor of its neighboring countries in Latin America. Table 18 demonstrates that these countries have played a more important role in buying Colombian non-traditional agricultural and particularly manufactured products. The major shift within the minor export group as a whole is from Western Europe to the Andean countries and somewhat less to new customers in Eastern Europe, Asia and Australia. Total LAFTA exports, which were less than half of the U.S. exports in 1960/62, have increased ten-fold since then and surpassed exports to the U.S. by \$ 5 m. in 1970/73. Data for manufactured products are presented for four individual years up to 1972. Although expansion has been rapid, the shares remained rather constant, with a third to a fourth going to the U.S., the Andean Pact countries, and the other non-LAFTA countries of the Western Hemisphere, i.e. mainly Central America and the Caribbean.

More conclusive evidence of manufactured exports, and the degree of differentiation according to region is presented in Table 19, which lists export values, percentage shares going into LAFTA countries, and capital-intensity as measured by the non-wage value-added per worker. A casual glance at the figures reveals substantial differences in LAFTA participation with one product group of which 60 % and more is bought by Latin American countries and a second group of commodities, of which less than 20 % is sold in the same region. With the exception of a few catch-all items (other chemicals, and other miscellaneous manufactured articles on the one hand and other textiles and non-metallic manufactures on the other), the two groups have clearly distinct market shares. Although the data for capital-intensity are only proxies, since they are not always covering exactly the same groups, the first hunch that mainly capital-intensive goods are finding their

Table 18

COLOMBIA: DESTINATION OF MINOR EXPORTS 1960 - 1973  
(in mill. US dollars and percent)

Commodities	Countries						
	USA	Andean Pact	Other LAFTA	Other Americas	Western Europe	Other Countries	Total
<u>Minor Exports</u> (in mill. \$)							
1960/62.....	14.8	6.7	0.3	6.9	28.5	3.4	60.5
1967/69.....	44.6	24.6	5.1	21.3	62.1	10.5	167.9
1970/73 <sup>a</sup> .....	76.5	70.6	10.5	42.2	98.6	55.3	353.7
(in %)							
1960/62.....	24.4	11.1	0.5	11.4	47.0	5.6	100.0
1967/69.....	26.6	14.5	3.0	12.7	37.0	6.2	100.0
1970/73.....	21.6	20.0	3.0	11.9	27.9	15.5	100.0
<u>Manufactured Exports</u> <sup>b</sup> (in mill. \$)							
1960.....	1.88	1.94	0.11	1.82	0.61	0.17	6.52
1965.....	11.63	6.24	3.61	9.52	0.97	1.84	33.81
1969.....	17.86	15.54	3.59	12.92	5.20	3.55	59.70
1972.....	29.42	33.77	7.44	37.85	16.75	1.17	126.22
(in %)							
1960.....	28.8	29.7	1.6	28.0	9.3	2.6	100.0
1965.....	34.4	18.5	10.7	28.2	2.8	5.4	100.0
1969.....	30.0	26.0	6.0	21.7	10.4	5.9	100.0
1972.....	23.3	26.8	5.9	30.0	13.1	0.9	100.0

<sup>a</sup> 1970/73 figures are "registered" exports, whereas the data in the 60s are on a customs clearance basis

<sup>b</sup> SITC groups 5-8.

Table 19

COLOMBIAN MANUFACTURED EXPORTS  
VALUE, LAFTA SHARE, AND CAPITAL INTENSITY

SITC Group		1970 Exportvalue in mill.\$	% going to LAFTA	Non-Wage Value added per Worker 1968
3	Mineral Fuels excl. Crude Petroleum	17.41	90.0	285.77
513	Inorganic Chemicals	2.43	61.4	88.42
541	Medical and Pharmaceutical Products	2.68	75.8	69.50
581	Plastic, Cellulose, Resins	1.02	69.5	
5 (Other)	Other Chemicals	1.96	44.8	51.45
62	Rubber Manufacture	1.29	82.6	40.19
64	Paper and Paper Products	1.37	56.3	56.14
661	Cement and Construction Materials	3.55	40.8	28.45
67	Iron and Steel	0.42	72.0	52.18
69	Manufacture of Metals	2.58	55.5	24.31
7	Machinery and Transport Equipment	5.58	58.9	78.13
892	Printing	2.23	58.5	22.29
8 (Other)	Other Miscellaneous Manufactured Articles	2.20	45.8	n.a.
	SUBTOTAL / AVERAGES (Column 3)/(Columns 4 and 5)	44.72	62.5	72.45
61	Leather and Leather Goods	5.67	2.9	22.53
63	Wood and Cork Manufactures	1.96	0.8	15.99
651	Threads and Spun Fibres	4.18	8.3	26.64
652	Cotton Textiles	7.51	8.6	54.90
65 (Other)	Other Textile Yarn and Fabrics	1.02	24.5	22.77
665	Manufacture of Glass	3.16	13.1	32.86
667	Pearls and Precious Stones	3.55	0.5	n.a.
66 (Other)	Other Non-metallic Mineral Manufactures	1.49	29.6	16.20
68	Non-ferrous Metals	4.42	3.8	n.a.
841	Clothing	1.10	11.2	17.58
851	Shoes	0.74	0.3	19.06
	SUBTOTAL / AVERAGE (Column 3)/(Column 4 and 5)	34.73	9.4	25.39
	TOTAL	79.45		

Sources: Carlos Díaz Alejandro, "El Cambio de una política de substitucion de importaciones a una promoción de exportaciones en Colombia", (Bogotá: FEDESARROLLO, 1973) and computed from DANE, Industria Manufacturera Nacional 1968.



markets in the LAFTA countries seems to be confirmed by the data which show that for these goods the capital-intensity is three times as high as for the commodities which are mainly sold to the U.S. and European countries. The evidence from these averages is strengthened by the results of the following cross-sectional regression:

$$y = \begin{matrix} 26.666 \\ (3.405) \end{matrix} + \begin{matrix} 0.284 \\ (2.806) \end{matrix} x \quad R^2 = 0.304$$

where

y is the percentage share of exports going to LAFTA  
x is the capital-intensity; and the figures in brackets are t-ratios significant at 1 %.

It would seem logical that Colombia sells its more labor-intensive goods, such as clothing, shoes, leather, wood and some of its textiles to the advanced countries whereas it is able to export the modern and more capital-intensive goods to its neighbors, most of which are still much less industrialized than Colombia. In other words, Colombia seemed to use its comparative advantage quite correctly in 1970. It should, however, be noted that the special protection of LAFTA and the Andean Market made it possible to sell at prices not only substantially above world market level, but - due to the export promotion scheme in general and the Vallejo Plan in particular - also above the domestic price level in Colombia itself. A more precise indication of Colombia's use of its comparative advantage is presented in Table 20, where factor-intensities are compared with export shares.<sup>52</sup> The division into relatively capital-intensive and labor-intensive industries shows that the former group has participated very little in total industrial exports between 1965 and 1973. The only clear cut exemption are chemicals, which owed at least part of their rather constant participation to the above mentioned "excess" production of their newly installed capacities.<sup>53</sup>

Table 20

FACTOR- AND EXPORT-INTENSITY OF COLOMBIAN INDUSTRY

Industry	Value-Added per Employee 1973 National Average = 100			Exports as % of Total Exports of Manufactured Goods			Export Share as % of Industrial Output	
	Total	Wages and Salaries	Other	1965	1970	1973	1967	1973
<b>RELATIVELY CAPITAL-INTENSIVE INDUSTRIES</b>								
Petroleum	632	409	744	2.8 <sup>a</sup>	0.5	n.a.	0.6	n.a.
Tobacco	348	113	467	0.1	b	n.a.	0.1	n.a.
Beverages	276	151	340	b	b	b	b	b
Chemicals	124	159	184	8.9	9.5	10.0	1.4	6.3
Basic Metals	102	149	79	0.6	1.5	2.2	0.4	0.9
Rubber	101	142	80	14.0	1.7	0.9	3.8	3.1
Electrical Machinery	100	109	96	0.7	1.5	0.7	0.8	1.5
<b>RELATIVELY LABOR-INTENSIVE INDUSTRIES</b>								
Food	95	82	101	11.8	12.1	2.4	0.7	0.8
Textiles	93	106	86	25.8	21.6	19.8	2.7	8.7
Glass and Glassware	88	103	81	2.2	4.6	1.3	} 5.6	7.4
Cement and Asbestos	82	100	72	8.7	5.0	2.5		
Paper and Cardboard	87	86	87	2.5	8.4	2.7	11.5	4.8
Printing and Publishing	75	105	60	1.4	2.7	2.1	0.1	5.0
Non-electrical Machinery	78	97	69	1.3	2.6	0.4	1.8	16.1
Transport Equipment	73	104	57	b	1.7	0.7	0.1	1.2
Metal Products	67	78	62	4.4	3.2	5.4	2.2	5.1
Leather Goods	67	79	61	6.9	6.1	6.9	12.4	41.8
Other Industrial Products	54	67	49	2.2	6.5	17.9	1.3	51.7
Wood and Cork Products	51	62	45	3.8	6.8	4.3	2.6	33.5
Clothing	37	51	31	} 1.5	1.3	11.1	} 0.4	18.5
Shoes	36	59	24		2.0	1.6		
Furniture	35	56	25	b	0.9	3.4	b	41.5

a = 1964/65 average; b = less than 0.1 %.

Sources: Computed from Boletín Mensual de Estadística 283 (February 1975) and data from INCOMEX.

Shares in the more labor-intensive industries have been increasing substantially. It is now of particular interest to observe that within this group there has been a shift from the intermediate to the most labor-intensive industries. For those industries for which the relative capital-intensities are between 70 and 100 the export share rose from 52.4 % to 58.7 % between 1965 and 1970, but fell in the following years to 31.9 %. On the other hand there was a substantial gain for industries with capital-intensities below 60 from 18.8 % over 26.8 % and finally to 50.6 % during the same time period. A similar trend is visible in the last column of Table 20, which lists the export shares of total production in each industry. Export business seems to be of particular importance for wood and furniture, leather goods and shoes, as well as clothing and even for the machine producing industries. For all other branches exports made up less than 10 % of total business, but all shares have been increasing over the last few years.

The rising importance of Colombia as a low wage country in international business can be illustrated by the following example. Wages in the clothing industry of Hong Kong rose from \$ 1.09 in 1963/64 to \$ 1.85 in 1967/68 and finally to \$ 3.75 in 1971. In contrast to that wages in Colombia fell from \$ 2.20 in 1964 to \$ 1.72 in 1967 and remained at that level until 1971.<sup>54</sup> If one considers that a large part of the Colombian clothing exports comes from the Freeport Zone of Barranquilla, where all imported inputs are duty free and internal transport costs are minimal, the importance of relative wages becomes immediately apparent.<sup>55</sup>

#### 4. Determinants of Colombia's Manufactured Export Performance

At this point it would seem to be appropriate to test the relationship between export promotion and export success a little bit closer. Two types of analysis will help us (1) to establish to what extent the increase of Colombia's industrial exports are a function of their increased level of competitiveness rather than a favourable development

in world markets and (2) to test the relationship of exchange rate and other export promotion policies (as quantified in the concept of the "real effective" exchange rate) with the change and fluctuations of manufactured exports.

Table 21 gives the result of the constant-market share analysis, which has been undertaken to analyze the export performance of Colombian manufactures between 1960 and 1969.<sup>56</sup> Clearly, the growth of world trade benefited Colombian exporters. Under the assumption that it took no special effort to maintain its constant share in world trade, it can be hypothesized that 30 % of the increase of Colombia's manufactured exports of over \$ 50 m. were simply the result of more favorable world trade opportunities. A similar positive effect was due to the composition of commodities which Colombia had to offer. The demand for most of these goods grew more rapidly than the average. On the other hand, the markets into which these products went were characterized by a lack of dynamic expansion.<sup>57</sup> As a matter of fact the negative market distributions effect more than cancelled out the positive market composition effect.

Colombia's increased efforts to compete in world markets are reflected in the figures of the last row. For the nine-year period the "competitiveness" effect accounted for nearly 75 % of expansion of manufactured exports. But Table 21 shows also, how sensitive the constant market share analysis is to the terminal years of the period under consideration. From 1965 to 1969 the same effect only contributed 25 % to the explanation of export growth, because Colombia did not change its export share in total world manufactures between these two years. A further breakdown into various regions showed that Colombia's internal effort to become competitive was relatively more important in the Andean and LAFTA countries (50 %) than in Europe (83 %) or the U.S. (60 %) and other countries of the Western Hemisphere (66 %).<sup>58</sup> With respect to individual industries only two, non-electrical machinery and furniture, showed a negative contribution

Table 21

CONSTANT MARKET SHARE ANALYSIS OF THE  
SOURCES OF CHANGE IN COLOMBIA'S MANUFACTURED EXPORTS 1960 - 1969  
(th. US-\$, percentage change in brackets)

	1960 - 1965	1965 - 1969	1960 - 1969
Actual increase in Colombia's export of manufactures.....	26,246 (100.00)	25,644 (100.00)	51,890 (100.00)
Effect of increase in world trade of manufacture.....	5,954 ( 22.69)	25,675 (100.47)	15,677 (30.21)
Net difference.....	20,292	- 31	36,213
Commodity composition effect.....	5,890 ( 22.44)	-2,989 (-11.66)	15,061 ( 29.02)
Market distribution effect.....	-6.772 (-25.80)	-4.075 (-15.89)	-17.376 (-33.49)
Competitiveness effect.....	21.173 ( 80.68)	6.943 ( 27.08)	38.528 ( 74.25)

Source: Evaldo A Cabarrouy, James J. Spillane, S.J., "La Experiencia de Colombia en materia de Exportaciones de Manufacturas en el periodo de 1960 a 1969", Revista de Planeacion y Desarrollo, 6.1 (January/March 1974), p. 68-73.

of internal factors to export growth. In general, the contribution of the more traditional industries was above the same figure for the newer and dynamic industries.

In addition to the above mentioned importance of lower wages, the alleged rise of Colombia's competitiveness in world manufacture markets could be caused by at least two other factors: (1) the improved efficiency of Colombian industry, which should be reflected in higher value-added / per worker figures and the output of better quality products at lower prices, or (2) the increasing promotional efforts of the public sector, which subsidized industries through fiscal, monetary customs and foreign exchange policies.

The evidence with respect to productivity changes is mixed. The shift from intermediate to traditional consumer goods in the export structure was not accompanied by a similar shift in productivity changes. Although the leading export industry textiles experienced a 43 % increase in productivity between 1967 and 1972 and the machine-making industries raised their output per man-hour by 52 percent during the same time period, annual productivity changes only amounted to 1 % for shoes and furniture and were declining slightly for leather goods.

The question if the exchange rate matters, and by this is meant the "real effective" exchange rate, has been discussed widely in the context of the analysis of non-traditional exports.<sup>59</sup> In spite of fairly high correlation coefficients many of the attempted regressions are marred by serial correlation, since it can be expected that both Colombian supply of and world demand for most manufactured goods experienced outward shifts quite independently from price changes.<sup>60</sup> Due to several short-run fluctuations it becomes mandatory to use quarterly data, but this may be critical for some manufacturing branches which are only exporting a small share of their products to other countries, and which suffer from large random fluctuations.

Finally, in hoping to increase the regression coefficients researchers found that additional explanatory variables were not quite as independent from the other variables as was desirable to avoid multicollinearity.

The following equation which regresses quarterly manufactured exports (ESMAN) between 1966 and 1971 with the real effective exchange rate  $\left(\frac{ER}{P}\right)$  and the benefit of belonging to the Latin American Free Trade Association (LAFTA), seems to suffer from the latter problem.<sup>61</sup>

$$\begin{array}{rcllcl} \text{ESMAN} & = & 0.513 & + & 5.428 & \frac{ER}{P} & + & 0.302 & \text{LAFTA} & R^2 & = & 0.741 \\ & & (0.352) & & (4.771) & & & (1.183) & & DW & = & 2.039 \end{array}$$

Clearly, the real effective exchange rate played a significant role in fostering manufactured exports in Colombia since 1967. This seems to be less evident in the case of LAFTA, in spite of the previous discussion of LAFTA's importance for Colombia's manufactured exports. Besides the multicollinearity problem there may also be the problem of the unavailability of quantum indices for manufactured exports.

##### 5. The External Sector and its Impact on Price Stability

The most important aim of the export promotion policies had been to close the foreign exchange gap which had jeopardized industrial development in the Sixties. Colombia's capacity to import rose by 50 % and the total value of imports increased from \$ 500 mill. in 1967 to over \$ 1 bill. in 1974. Considering the world inflationary situation, the 60 % rise of the "real" value of these imports should have been sufficient to satisfy the rapidly increasing demand for raw materials and especially capital goods needed by Colombian industry.

In spite of the rapid rise in imports, foreign exchange reserves were accumulated, because a large amount of the non-traditional exports were financed by foreign credits taken from the Eurodollar market. Together with other short- and long-run capital inflows total foreign exchange reserves rose to nearly \$ 600 mill. in the first quarter of

1974. Desirable as it seemed for a country which had suffered from an acute shortage of foreign reserves, their sudden inflow proved to be rather inflationary in 1973 and 1974, i.e. their contribution to the expansion of high-powered money amounted to 64.2 % and 55.1 % respectively. Since the rather close links between increases in money supply and increases in the price level have also been demonstrated to hold true for Colombia, it is not difficult to blame at least part of the inflationary upsurge on the financing of the nontraditional exports.<sup>62</sup>

Another cost of the export promotion program effected the aggregate demand through the liberal granting of fiscal incentives. The direct costs of the various programs are computed in Table 22. They have been estimated to reach \$ 2 bill. pesos in 1974, increasing their share of total tax revenue from 3.5 % to 7.5 % within the last seven years. A comparison with public investment shows that 12.8 % of these expenditures could have been financed out of tax revenue instead of using the credits from the central bank, had it not been for the tax incentives and the exemptions from custom duties of the Plan Vallejo.<sup>63</sup>

On the supply side the export diversification contributed in at least two ways to raise prices. First, the policy of the "sliding peg" increased the prices of imports continuously. The influence of a rather constant devaluation is reflected in the last row of Table 23 which shows the rate of inflation for capital goods, most of which were still imported in the early 1970s. Compared to price increases of the other goods, the inflationary rate was not accelerating but followed rather closely the rate of devaluation.

The second problem arose out of the conflict between supplying domestic and foreign markets simultaneously. This was particularly serious for agricultural products, where the differences between internal and world market prices widened considerably.<sup>64</sup> The government attempted to solve the issue by decreeing restrictions on 30 % of agricultural exports and 8 % of industrial exports, which ranged



Table 22

FISCAL COSTS OF EXPORT INCENTIVES 1961-1974

Year	Income tax exemptions	Taxes paid with CAT	Customs duties foregone under Plan Vallejo	Total fiscal costs		
	in mill. pesos			in mill. pesos	As percent of total tax revenue	As percent of public investment
1961	24	-	-	24	1.1	1.6
1962	36	-	-	36	1.7	2.9
1963	63	-	3	69	2.3	5.3
1964	54	-	7	61	1.6	3.9
1965	78	-	19	97	2.3	6.4
1966	148	-	38	186	3.0	9.0
1967	133	-	54	187	2.7	7.0
1968	-	138	56	194	2.3	4.5
1969	-	331	48	379	3.5	6.6
1970	-	424	98	522	4.2	7.4
1971	-	545	125	670	4.2	6.9
1972	-	1,080	160	1,240	7.3	13.0
1973	-	1,438	264	1,702	7.5	12.6
1974 <sup>a</sup>	-	1,930	403	2,333	7.5	12.8

<sup>a</sup> The data for 1974 are preliminary.

Source: Computed from Revista del Banco de la Republica and unpublished data by the same institution.

Table 23

RATES OF INFLATION IN COLOMBIA 1970-74  
(Changes in wholesale and export prices in %)

	1971	1972	1973	1974
All Economic Sectors	11.5	18.3	27.9	35.9
Exports	2.6	22.9	36.2	48.0
Exports without coffee	11.0	20.5	39.1	82.2
Agricultural products	18.4	15.2	33.4	33.5
Industrial products	9.5	15.1	23.2	38.5
Food products	6.3	15.8	29.8	35.2
Beverages	12.0	20.5	12.1	23.5
Clothing and shoes	10.5	11.2	25.0	36.8
Textiles	15.6	14.4	28.0	61.2
Paper and cardboard	10.0	12.5	16.3	46.6
Chemicals	8.0	7.0	22.5	43.2
Metal products	-5.5	15.4	23.8	74.4
Petrol and coal derivates	30.8	24.9	9.8	43.1
Capital goods	17.2	19.3	24.4	27.8

Source: Revista del Banco de la Republica, April and December, 1974.

from construction materials like cement, steel and glass to chemicals like fertilizers and pesticides. That these measures did not stop prices from increasing can be seen from Table 23, where non-traditional exports are shown to have experienced the most rapid inflation rates since 1972.

#### 6. Export Expansion, and its Effects on Growth, Employment and Efficiency

Simultaneously with solving the foreign exchange bottleneck it was hoped that export diversification would stimulate industrial growth and employment. Table 13 has shown that industrial output increased much more rapidly between 1967 and 1973 than in the previous periods and that the contribution of the export sector was at the order of 15 %. Even more spectacular was the increase of labor absorption into the secondary sector which rose from 1.5 % to 8.3 %.

A more detailed calculation of the export multiplier effects are shown in Table 24. The expansionary effects of industrial exports on aggregate demand, imports, and employment are the product of the change in industrial exports converted into constant purchasing-power pesos and the various multipliers which are estimated from an inverted input-output table of 1968.<sup>65</sup> Although not all industries experienced increases of the real value of their exports, the net impact of the export expansion should have been substantial and accelerating as columns 2 and 3 demonstrate. Taken as a percent of total industrial growth the rates were 18.2 % and 24.6 % for the 1967/70 and 1970/73 periods.<sup>66</sup> It is also interesting to note that the real value of imports should have remained rather constant during the two periods, confirming the above made observations that there has been a structural change within the industrial export sector from more capital-intensive and import dependent intermediate goods industries to the more traditional non-durable consumer goods industries, which are both using more domestic inputs and labor.

Table 24

MULTIPLIER EFFECTS OF EXPORTS 1967-73

(in 1968 mill. Pesos)

Industries	Changes in Industrial Exports		Resulting Aggregate Demand		Changes in Employment (in 1000)		Changes in Imports	
	1967-70	1970-73	1967-70	1970-73	1967-70	1970-73	1967-70	1970-73
Food Products	111.5	-97.3	225.3	-196.6	3.79	-3.31	10.7	-9.4
Beverages	0.6	0.7	1.0	1.1	0.01	0.01	0	0.1
Tobacco	0	1.8	0	2.4	0	-0.02	0	0.1
Textiles	210.0	467.4	388.5	864.7	3.96	8.82	20.4	45.4
Clothing and Footwear	48.9	480.9	117.7	1,157.5	1.78	17.53	1.9	19.0
Wood and Cork Products	101.5	68.0	187.6	125.7	3.03	2.03	2.7	1.8
Furniture	14.8	128.1	17.0	147.1	0.35	3.06	0.1	0.8
Paper and Paper Products	-25.4	-24.3	-51.2	-48.9	-0.30	-0.29	-4.7	-4.5
Printing and Publications	43.7	42.0	69.2	66.5	0.79	0.76	9.3	8.9
Leather and Leather Products	35.1	187.8	78.8	421.4	0.71	3.83	4.9	26.1
Rubber Products	-10.6	9.6	-16.3	14.7	-0.14	0.12	-2.5	2.3
Chemicals	87.6	216.9	124.2	307.6	0.85	2.10	21.7	53.7
Petroleum and Coal Products	7.6	-7.8	15.1	-15.5	0.10	-0.10	1.1	-1.1
Other Non-metallic Mineral Products	71.4	29.6	124.0	51.4	2.04	0.85	7.4	3.1
Basic Metals	16.7	156.8	39.0	366.0	0.24	2.22	3.1	28.8
Fabricated Metal Products	18.8	69.0	32.0	119.1	0.35	1.27	3.5	13.0
Non-electrical Machinery	45.7	73.3	76.8	123.2	0.98	1.57	11.7	18.8
Electrical Machinery	217.5	-198.6	346.3	-316.2	3.05	-2.79	63.8	-58.2
Transport Equipment	38.8	-8.8	58.1	13.2	0.84	-0.19	13.5	-3.1
Miscellaneous	156.4	583.0	235.7	878.6	1.85	6.90	19.9	74.1
<b>T O T A L</b>	<b>1,190.6</b>	<b>2,178.1</b>	<b>2,068.8</b>	<b>4,083.0</b>	<b>24.3</b>	<b>44.4</b>	<b>188.5</b>	<b>219.7</b>

Source: Computed from Departamento Nacional der Planeación, Aspectos cuantitativos del plan de desarrollo, Bogotá 1973 and INCOMEX data.

Similar to the experience in other Latin American countries Colombia's import substitution policies have not been able to provide many employment opportunities for the rapidly rising population. The annual labor absorption rate of 3.5% had already been modest during the first phase of post-war industrialization in Colombia; the 1.5 % increase during the Sixties became completely insufficient to contribute in any way to solving the unemployment problem. Consequently a massive redistribution program was proposed to enlarge the domestic market and stimulate the demand for labor-intensive goods.<sup>67</sup> Colombia chose, however, to follow the "leading sector" approach, which hoped to raise employment by concentrating resources in the construction and export sector.<sup>68</sup>

The employment effects of the latter are shown for the industrial sector in Columns 6 and 7 of Table 24. The estimated increase of new jobs created by industrial exports was nearly 70 thousand between 1967 and 1970. This may not be much for a country where a population of 23 mill. is still increasing by over 3 % a year, but if one relates that figure to total employment increases in the manufacturing sector which was 156 thousand during the same period, it becomes evident that the acceleration of the industrial employment rate from less than 2 to over 8 % owes the export expansion drive a good part of its improved performance. Table 24 also shows the significance of the textile as well as the clothing and shoe manufacturing sector, the exports of which contributed 45 % to total employment increases.

Orthodox economists have concentrated their criticism of the import substitution strategy on the issue of efficiency, maintaining that highly protectionist policies have led to serious misallocation of resources in the economies of many LDCs. Is it possible to evaluate the effects of export diversification on micro- and macro-economic efficiency more favorably? The previous analysis of increasing the labor-intensity of Colombia's export industries seems to give a positive answer. Export diversification has led to

using the comparative advantage of Colombia to produce goods based on rich natural resources and relatively cheap labor. Two other indicators for measuring economic efficiency would be the rate of capacity utilization and the change of the effective rate of protection.<sup>69</sup>

Several recent studies agree that capacity utilization has been relatively high in Colombian industry in the last year.<sup>70</sup> The average number of working hours per day increased from 13.7 in 1961 to 16.8 in 1970. It is, however, interesting to note that there has been no increase during the years of the export boom between 1970 and 1974. The major reason seems to be the fact that the export-intensive industries like clothing and shoes, leather goods, as well as furniture and wood are seldomly working more than one shift. Although there are some problems regarding night work due to government regulations, the major reason for the unwillingness of the entrepreneurs of small and medium sized firms to engage in multiple shift production seems to lie in the lack of supervisory personnel and the inability to delegate decision-making to employees.<sup>71</sup>

It is then not surprising to find rising expenditure for plant equipment in Colombian industry. Capital goods imports increased from an annual average of \$ 230 mill. in 1966 and 1967 to \$ 350 mill. per year between 1968 and 1973. At the same time the share of capital formation in gross domestic product rose from 18.3 to 20.2 %.

With respect to the second indicator of economic efficiency, effective protection of Colombian industry has rather increased in the last few years. The overall rate rose from 29.2 % in 1969 to 35.2 % in 1972 and 38.9 % for 1974.<sup>72</sup> The changes in normal and effective rates of protection are similar: small decreases of the rates for intermediate goods are more than compensated for by increasing rates for traditional consumer goods (especially beverages and tobacco), and some capital goods (electrical machinery and household goods).

The possible misallocation of resources which result from a mixture of protection and export incentives can be demonstrated with the following example, which seems to fit the Colombian case.<sup>73</sup> Assumed the world market price for a good equals \$ 100 and the tax subsidy is 18 %. If imported inputs amount to \$ 40, value-added at world market prices will be \$ 60, whereas value-added in Colombian prices will be \$ 78, i.e. effective protection reaches 30 % (18/60). If imported inputs are increased to 50 - a case which has actually occurred due to the provision of the Plan Vallejo - effective protection rises to 36 % (18/50). If, in addition, the manufactured product is exported to a protected market, where the price of the product is 50 % over its world market quotation, effective protection will become 154 % (77/50). It is interesting to note in this context that import intensity and prices of most industrial products going to other Latin American countries (LAFTA and Andean group) are indeed above the values for those goods going to the industrialized world.

In short, the "comparative advantage" improvements which seem to have resulted from Colombia's industrialization strategy of export promotion and diversification has neither been supported by better capacity utilization nor by lower effective protection. There are, however, indications that the government is attempting to remedy this situation. The rationale behind the decrease in the tax certificate from 15 % to 5 % for industrial exports was not primarily to lighten the fiscal burden but to "expose the Colombian industrial entrepreneur to the strong winds of international competition".<sup>74</sup> The growing significance of trading companies in furthering manufactured exports is another sign of a division of labor which should lead to higher efficiency of the whole foreign trade sector, although the high degree of concentration in Colombian exports would seem to have negative implications for income distribution.<sup>75</sup>

7. Problems and Possibilities of Increasing Manufactured Exports in Colombia

The growth and diversification of Colombia's industrial exports within a period of less than ten years prove that a determined strategy can lead to favorable results, especially in times where world markets are expanding rapidly. It has, however, become clear that besides the positive effects on the balance of payments as well as on industrial output and employment, the export expansion drive led to shortages of certain domestic supplies and contributed to inflate the price level through excess demand for money. Moreover, the far reaching incentives have been granted rather liberally without any major concern of improving efficiency or income distribution which had already become more unequal during the period of import substitution industrialization.

It was therefore only logical that the new government which came to power in the fall of 1974 tried <sup>to combine</sup> an anti-inflationary policy with attempts to improve the incentive system and with it further the efficiency of Colombian export industry. Unfortunately, world recession with increasing tendencies to protect endangered industries in advanced countries added another problem to many Colombian exporters to expand their sales abroad. In addition, there are still a number of obstacles, such as lack of credit, insufficient supply of inputs and bad transport conditions which had been pointed out by a great number of exporting firms during a 1973 survey.<sup>76</sup> The first two problems are directly related to the rapid rise of both Colombian and world exports in the past few years, both of which have slowed down considerably since the end of 1974. In addition, more credit has been channelled to exporters since the beginning of 1975, partly to compensate for the loss of the tax subsidies. On the other hand, the transport problem cannot be solved in the short-run, because the infrastructure of Colombia's mountainous territory is still insufficiently developed. In addition, maritime transport is characterized by a lack of organization. This is especially serious in the major ports of Buenaventura,



Barranquilla, Cartagena and Santa Marta where the estimated loss of export and import goods amounts to over \$ 2 mill. annually.<sup>77</sup>

In spite of these difficulties which Colombian exporters are currently facing the prospects for the medium and long run would seem favorable. With regard to the traditional industrial goods Colombia's share in total world exports is still very small, reaching 10 % for leather good imports and hardly 1 % for clothing and shoe imports by the United States.<sup>78</sup> Competition in world markets of these labor-intensive goods is, however, stiff and a sudden rise in labor costs can signify a substantial loss in sales.

The prospects of increasing industrial exports to other countries in the Andean market are more assured and offer the possibility to diversify industrial production of capital goods. This is true for agricultural machinery, which Colombia has been already exporting for a number of years in increasing amounts as well as new industries, such as the production of cutlery and medical equipment, in which import substitution and export diversification will have to take place simultaneously. The estimated demand for these selected groups of products for 1980 amount to \$ 286.8 mill., part of which (\$170 mill.) will be provided by similar industries in Chile, Peru and Colombia. Even then, the productive capacities which are planned to be in operation in Colombia by that time amount to only \$ 75 mill. worth of production. This would mean that the major flow of industrial exports should be in the direction of Latin American markets. If one considers the higher income elasticity of demand for engineering products and the rapidly rising income of Colombia's oil-rich neighbors Venezuela and Ecuador, it should become obvious that the structure of the industrial exports will continue to move away from traditional goods and markets.

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2. These percentages are computed according to the SITC classification of industrial goods (groups 5 - 8, except 68). The ISIC classification leads to a 25 % participation of industrial goods in total exports during 1973 and nearly 30 % in 1974.

3. This theme was first discussed by Raúl Prebisch, The Economic Development of Latin America and its Principal Problems (New York: United Nations, 1950).

4. For a discussion of 19th century economic policies and their effect on the Colombian economy see William Paul McGreevy, An Economic History of Colombia (Cambridge University Press, 1971). See also, Frank Safford, "Foreign and National Enterprise in Nineteenth Century Colombia", Business History Review, Vol. 39, No. 4 (Winter 1965), pp. 503-527.

5. These data are recorded and commented by P.C. Bell, Colombia, A Commercial and Industrial Handbook, US Department of Commerce, Bureau of Foreign and Domestic Commerce, Special Agent Series No. 206, Washington, D.C.: Government Printing Office, 1921, p. 180.

6. United Nations, Economic Commission for Latin America, Analyses and Projections of Economic Development, III, The Economic Development of Colombia, New York: United Nations, 1955.

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9. Recovery was only possible through the rapid increase of the volume of exports.
10. Exchange rate policies were to play a crucial role in Colombia's attempt to stabilize the balance-of-payments problems it faced after coffee prices fell from over 70 cents per pound in 1954 to less than 38 cents per pound in 1963. Since the aim of exchange rate manipulations were mainly to compensate for the fluctuations in foreign trade and not provide protection for domestic industry, this policy tool will be discussed in the context of export promotion policies.
11. T.L. Hutcheson, "Incentives for Industrialization in Colombia", dissertation, Department of Economics, University of Michigan, Ann Arbor, 1973.
12. C. Diaz-Alejandro, "Foreign Trade Regimes and Economic Development. Volume IX: Colombia", mimeographed, National Bureau for Economic Research, 1975, p. 229.
- International Bank for Reconstruction and Development
13. / (IBRD), Economic Growth of Colombia: Problems and Prospects, Report of a mission sent to Colombia in 1970 headed by D. Avramovic, (Baltimore and London: The Johns Hopkins Press, 1972), ch. 7.
14. These bottlenecks, particularly in spare parts for machinery and equipment, were partly met by smuggling, which plays a rather important role in Colombian foreign trade.
15. Diaz-Alejandro, op.cit., ch. III.
16. Manuel M. Róba, Obstaculos al desarrollo de exportaciones manufacturadas (Bogota, FEDESARROLLO, 1974).

17. M. Nitsch, Entwicklungsfinanzierung in Lateinamerika - dargestellt am Beispiel Kolumbiens (Stuttgart: Ernst Klett Verlag, 1970), p. 32.
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19. The tax subsidies for non-traditional exporters will be discussed in chapter III.
20. R. Bird, Taxation and Development, Lessons from Colombian Experience (Cambridge/Mass: Harvard University Press, 1970), p. 135.
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26. See for example, S.A. Morley and G.W. Smith, "On the Measurement of Import Substitution", American Economic Review, 60 (1970), pp. 728-735.

27. Bernard E. Munk, "The Colombian Automotive Industry", Economic and Business Bulletin Vol. 23, No. 1 (Fall 1973), p. 6.

28. Lauchlin Currie, Accelerating Economic Development, the Necessity and the Means (New York: McGraw Hill, 1966); the results of the 1961 survey are discussed by Francisco Thoumi, "Industrial Capacity Utilization in Colombia", mimeographed, Washington, 1974.

29. International Labor Office, Towards Full Employment, A Programme for Colombia, prepared by an inter-agency team organized by the International Labor Office. Geneva: International Labour Office, 1970, p. 18.

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31. International Labour Office, op.cit., p. 205. On the other hand, real wages increased very little between 1964 and 1969.

32. Departamento Nacional de Planeacion, "Breve Esquema sobre el Problema del Desempleo en Colombia", U.P.G. - 02 (June 1970).

33. Centro de Investigaciones Economicas (C.I.E.), Universidad de Antioquia, Contribucion al Estudio del Desempleo en Colombia (Bogota: Departamento Administrativo Nacional de Estadistica, 1971), pp. 140-152.

34. David Morawetz, "Import Substitution, Employment and Foreign Exchange in Colombia: No Cheers for Petrochemicals", Research Report No. 47, The Hebrew University of Jerusalem, 1973, p. 6.

35. Departamento Nacional de Planeacion, Aspectos cuantitativos del plan de desarrollo (Bogota, Canal Ramirez, 1973).

36. International Bank for Reconstruction and Development, op.cit., p. 185.

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38. Munk, op.cit., p. 6.

39. Morawetz, op.cit., p. 9; and Carlos F. Diaz-Alejandro, "Nota sobre una Metodologie para evaluar Proyectos Relacionados con e Sector Externo", (mimeo.), Bogota: FEDESARROLLO, 1972.

40. Hutcheson, op.cit., p. 19.

41. Departamento Administrativo Nacional de Estadistica (DANE), "Concentracion en la industria Colombiana", Boletin Mensual de Estadistica, 266 (September 1973), pp. 99-152.

42. Ibid., pp. 124-26.

43. Morawetz, op.cit., pp. 4-5.

44. Leonard Dudley, "Learning and Productivity Change in Metal Products", American Economic Review, Vol. 62, No. 4 (September 1972), pp. 662-669.

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46. Before 1962 bananas and precious stones were occasionally included in traditional exports.

47. S. Heldt, "Exportförderung in den Ländern der Andengruppe mit besonderer Berücksichtigung Kolumbiens", Die Weltwirtschaft, Tübingen, 1973, 1; J.D. Teigeiro and R.A. Elson, "The Export Promotion System and the Growth of Minor Exports in Colombia", International Monetary Fund, Staff Papers, Vol. 20, No. 2 (July 1973), pp. 419-470.

48. This assumes that relative prices for export products remained the same and that the rise in Colombian over U.S. prices reflected both the increase of production costs in Colombia and the actual increase in production costs of Colombia's trading partners. For an attempt to compute production costs in Colombia see Richard T. Nelson, et al., Structural Change in a Developing Economy, Colombia's Problems and Prospects (Princeton, N.J.: Princeton University Press, 1971), pp. 208-9.

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51. Heldt, op.cit., pp. 35-36.

52. The factor-intensities have been computed following the Lary method. See Hal B. Lary, Imports of Manufactures from Less Developed Countries (New York: National Bureau of Economic Research 1968).

53. It should also be remembered that the chemical industry comprises a large number of products including pharmaceuticals and plastic products, both of which showed above average export performance and below average capital intensities.

54. Data are taken from Gabriel Turbay, "Una Politica Industrial para estimular las exportaciones y fomentar el empleo", mimeo. (Bogota: FEDESARROLLO, 1972).

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56. Evaldo A. Cabarrouy and James J. Spillane, "La Experiencia de Colombia en materia de Exportaciones de Manufacturas en el periodo de 1960 a 1969", Revista de Planeacion y Desarrollo, Vol. 6, No. 1 (January/March, 1974), pp. 51-86.

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59. For the evidence in Colombia see for example: J. Sheahan and S. Clark, "The Response of Colombian Exports to Variations in Effective Exchange Rates", Center for Economic Development, Research Memorandum No. 11, Williams College, Williamstown, Mass., June 1967; Nelson, op.cit., ch. VI, Diaz-Alejandro, op.cit., ch. II, and A. Urdinola and R. Mallon, "Policies to Promote Colombian Exports of Manufactures", Center for International Affairs, Economic Development Report No. 75 (Harvard University, September 1967).

60. If one assumes world demand for Colombia's non-traditional products to be infinitely elastic, then only the problem of the shifting supply curve remains.
61. Teigeiro and Elson, op.cit., p. 450.
62. Alberto R. Musalem, Dinero, Inflación y Balanza de Pagos: la Experiencia de Colombia en la Post-Guerne (Bogota: Banco de la Republica, 1971); Asociación Nacional de Instituciones Financieras (ANIF), Inflación 1974 (Bogota: Ediciones Tercer Mundo 1974), pp. 219-228.
63. Besides the direct costs it is also possible to compute indirect costs due to the exchange rate differential between manufactured exports and the imports these exporters use as inputs. Teigeiro and Elson have estimated these subsidies to amount to 1.4 bill. pesos in 1972, which was slightly above the direct costs of 1.24 bill. pesos for the same year. In the late Sixties the indirect costs' relation share was substantially higher.
64. A good example was the sugar price, which had reached 47 ¢ per pound in world markets whereas the official domestic price in Colombia remained at 7 ¢.
65. Departamento Nacional de Planeacion, Aspectos Cuantitativos del Plan de Desarrollo (Bogota: Canal Ramirez-Antares, 1972).
66. It should be remembered that these multiplier effects are estimating potential changes in total aggregate demand, which include - although to a much smaller degree - changes in agriculture and services.
67. International Labour Office, op.cit., ch. 10.
68. Corporacion para el Fomento de Investigaciones Economicas, Controversia Sobre el Plan de Desarrollo (Bogota: Editorial la Oveja Negra, 1972) and Departamento Nacional de Planeación, El Plan de Desarrollo Colombiano en Marcha (Bogota: Ediciones Tercer Mundo, 1974).



69. In addition "domestic resource costs" would be a suitable measure of allocative efficiency. As mentioned, above, however, we have only a few rough estimates, which indicate that the more labor-intensive products have substantially smaller DRCs than the newer more capital-intensive industries.

70. Thoumi, op.cit., p. 25 and FEDESARROLLO, Conyuntura Economica (April 1973).

71. Thoumi found the difference between corporate and non-corporate organization of business to be the most important explanatory variable for differences in utilization.

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73. This example is taken in a slightly modified form from C. Diaz-Alejandro, op.cit., ch. II, p. 35.

74. Opening remarks by Finance Minister Rodrigo Botero at the NBER conference on "Foreign Trade Regimes and Economic Development" in Bogotá, April 26 to 28, 1975.

75. For 1970 it has been estimated that only 24 firms handled 62 % of total industrial exports. See C. Diaz-Alejandro, "Some Characteristics of Recent Export Expansion in Latin America", in H. Giersch, ed., The International Division of Labor, Problems and Perspectives (Tübingen: J.C.B. Mohr, 1974). Our estimates for 1974 found that concentration had further increased. 14 firms had exports over \$ 5 mill., which amounted to 58 % of total industrial exports for 1974. A more detailed discussion of the concentration of Colombian industry in general and of manufactured exports particularly will be part of a future working paper.

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77. The problems of Colombian ports were discussed in a series of articles of the major daily paper of Bogotá, El Tiempo in April 1975.

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