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I. PERUVIAN INDUSTRY AND INDUSTRIAL POLICY

1.1 Past Growth Experience of the Peruvian Economy

Between 1970 and 1982, the Peruvian economy grew at an average annual rate of 3 per cent. During this time span economic growth fluctuated considerably, though. From 1970 to 1975, GDP grew at an average annual rate of 4.6 per cent, with significantly higher growth rates during the early 1970s which levelled off in 1974 and 1975. After a recessionary period from 1976 to 1978 (0.5 per cent annual growth), the economy grew at 2.4 per cent annnually until 1982 (see Tables 1 and 2).

It is a widely held view, shared in fact by analysts from very different economic "schools", that economic growth between 1970 and 1974 was accompanied by or even led to growing internal disequilibria in the Peruvian economy, partly attributable to the introduction of policy instruments which were not conducive to the initiation of an autonomous, self-sufficient growth process.[1/]

Government policies could not succeed in stimulating private investment demand in spite of heavy subsidization of private capital formation. Instead, the share of private investment declined by about 50 per cent after 1968, so that subsequent investments hardly covered replacement requirements until 1974. Over the length of the period, this necessarily led to an over-aging of private capital equipment and growing bottlenecks in a number of production sectors. On the other hand, public investment activities were predominantly dedicated to projects in selected sectors which had been given long-term development priority, i.e. oil, fishing industry, mining, and basic industries and the improvement of infrastructure. These projects which had long gestation periods were not able to meet growing final demand directly.

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1/ See for example: World Bank (1981), (1983); UNIDO/World Bank (1981); Angell and Thorp (1980); Cline (1981).

1985

T A B L E 1

GROSS DOMESTIC PRODUCT BY ECONOMIC ACTIVITY: 1970-1982

(Million of soles at constant 1973 prices)

Economic Activity	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Agriculture	59,374	54,285	57,173	56,750	58,126	57,580	57,619	60,215	56,855	62,952	64,290
Mining	24,930	26,924	27,927	25,243	26,762	32,909	36,033	39,324	39,477	38,245	40,750
Manufacturing	87,238	99,524	110,401	114,959	119,566	114,469	110,026	114,697	121,275	121,031	118,010
Food processing	31,394	25,604	31,427	31,231	33,062	29,747	28,536	29,935	29,779	29,922	30,994
Textiles	12,518	14,286	14,687	14,936	15,903	13,586	13,981	14,516	14,312	13,239	12,557
Wood & Wood products	1,721	2,265	2,340	2,542	2,723	2,413	2,276	2,176	2,122	1,973	1,997
Paper & Paper products	3,806	4,881	5,304	5,075	5,242	4,858	4,369	3,947	4,737	4,854	4,228
Chemical products	10,788	15,470	17,021	18,979	20,367	19,425	19,534	20,005	22,184	22,517	22,967
Non-minerals products	2,922	4,080	4,416	4,616	4,867	4,460	4,133	4,269	4,645	4,766	4,518
Basic metals	7,632	8,347	8,424	7,714	8,302	13,210	13,213	15,123	14,836	13,931	13,762
Metal products	7,906	13,802	15,463	17,778	17,656	16,223	13,533	13,909	17,270	17,823	15,257
Other manufacturing	888	1,180	1,204	1,367	1,306	1,133	1,047	982	1,070	999	972
Handicraft industry	7,663	9,609	10,115	10,721	10,138	9,414	9,404	9,785	10,320	10,537	10,758
Utilities	2,234	3,007	3,287	3,54μ	4,025	4,537	4,728	5,071	5,347	5,859	6,187
Construction	10,455	13,854	16,655	17,009	17,021	15,107	13,551	14,170	16,833	18,693	19,123
Commerce	44,630	54,805	60,524	66,256	64,151	61,605	60,152	63,269	67024	70,818	68,485
Transport	17,635	21,748	24,232	26,453	28,064	28,347	28,773	30,152	32,443	34,216	34,123
Services and other activities 1/	106,100	118,439	121,734	130,862	132,272	137,184	136,588	139,041	144,572	15[illegible],849	153,483
GDP	352,596	392,559	421,933	441,073	449,987	449,738	447,470	465,939	483,826	502,663	504,451

1/ Includes financial services, education, health, public administration and defense.

Source: World Bank (1983), Annex - Table I.1.

FIG. 1: GDP BY ECONOMIC SECTOR, 1970-1982
PERU

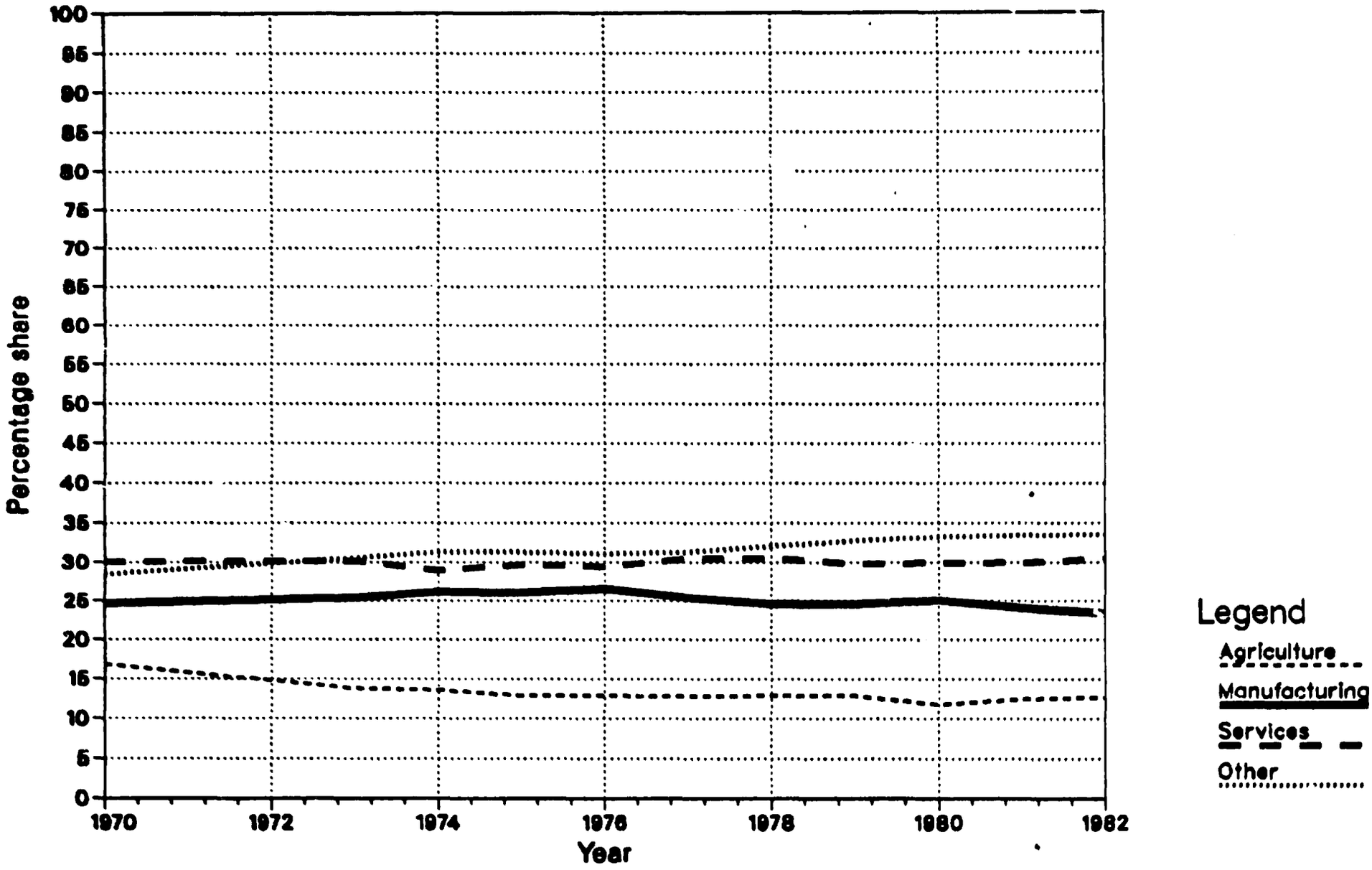

TABLE 2

ANNUAL GROWTH RATES (per cent)

Year	GDP	Manufacturing	Agriculture
1970-73	3.6	4.5	-2.9
1974	7.5	10.9	5.3
1975	4.5	4.1	-0.07
1976	2.0	4.0	2.4
1977	-	-4.3	-0.09
1978	0.5	-3.9	0.006
1979	4.1	4.2	4.5
1980	3.8	5.7	-5.4
1981	3.9	0.02	10.7
1982	0.4	-2.5	2.1
1983	-11.9	-17.2	-8.5

Source: 1970-82: calculated from Table 1 (based on 1973 soles).
1983: Banco Central de la República. Nota Semanal 9/1984, Marzo 1984, Cuadro 52 (based on 1979 soles).

Within this framework of growing imbalances, the actually achieved economic growth was fuelled by increasing external indebtedness and a growing public sector deficit. The share of the government deficit in GDP rose from 2.2 per cent in 1971 to 9.3 per cent in 1975.

Beginning in 1976, the Government gradually shifted economic policy. It started to remove some of the rigidities at the micro-level which were introduced into the policy framework in the early 1970s and began to implement a stabilization programme. Key objectives of the programme were a cutback of the public sector deficit and reductions of real wages. However, until 1977, little was achieved in terms of cuts in public sector expenditure and the positive outcome of the 1978-80 period turned out to be only a transitory phenomenon (Table 1). The objective of wage reduction was achieved, with a decline in real wages of 12 per cent annually between 1975 and 1979 in the manufacturing sector (Table 3). However, since this adjustment was accompanied by a decline in labour productivity of around 9.2 per cent, unit labour costs declined only slightly. The cumulative downswing, with productivity and public earnings declining nearly as fast as labour costs and public expenditure, prevented the creation of favourable conditions for a subsequent recovery. In 1977, the economy entered a two-year recession, which was followed by a three-year recovery (which, however, in the third year could only be maintained due to the recovery of the agricultural sector). In 1982, overall economic growth came to a halt again, and in 1983, the country suffered its most severe recession in recent history. It is estimated that GDP declined about 12 per cent within one year. Although this reflects in part the continuation of the recession beginning in 1982, adverse climatic effects are responsible for a large part of this outcome (some estimates attribute five percentage points to natural disasters).

As will be argued later in this summary report, the economic depression which Peru entered at the beginning of the 1980s, cannot, however, be explained solely in terms of the negative impact of natural disasters or external shocks resulting in deteriorating terms of trade. The programme of economic liberalization implemented in 1979/1980, which appropriately aimed

T A B L E 3

GROWTH OF PRODUCTIVITY, REAL WAGES AND RATES OF RETURN BY SECTOR

(Annual Percentage Rates[1])

ISIC	1971 - 75			1975 - 79			1979 - 81[2]		
	Productivity	Wages	Rate of Return	Productivity	Wages	Rate of Return	Productivity	Wages	Rate of Return
31. Food and beverages	3.6	1.6	7.0	-10.3	-3.7	-18.2	-.3	4.2	1.7
32. Textiles and clothing	1.9	-1.1	9.6	-7.7	-7.8	-12.7	-.6	4.2	2.5
33. Wood products	1.6	-1.5	1.5	-15.9	-13.5	-11.3	-6.1	4.2	2.8
34. Paper and printing	3.4	4.7	18.7	-15.0	-13.9	-22.8	10.5	4.2	3.4
35. Chemicals	3.3	7.1	-3.3	-3.2	-13.2	-12.0	5.3	4.2	1.8
36. Non-metallic minerals	0.9	4.9	-11.4	-4.8	-9.4	-8.6	3.8	4.2	2.3
37. Basic metals	-4.6	1.7	20.8	7.4	-17.1	20.3	-3.5	4.2	0.0
38. Metal products	4.7	3.9	8.5	-10.9	-13.1	-15.1	12.4	4.2	4.9
39. Other	7.0	5.4	9.8	-15.3	-13.1	-18.1	6.9	4.2	9.1
All Manufacturing	2.9	2.6	8.7	-9.2	-12.0	2.2	4.2	4.2	1.5

1/ Annual cumulative rates of growth.

2/ The years 1980 and 1981 are estimated.

3/ Estimated by assuming that nominal wages in each sector increased the same as the Indice de Sueldos y Salarios en la Industria Manufacturera, Direccion General de Empleo.

Source: World Bank (1983: Table III-C.2).

at removing rigidities and distortions which had developed in the economy and in the economic policy framework during the 1970s, made the economy and especially the manufacturing sector particularly vulnerable to the downswing in the world economy. This is, of course, identical to saying that the unforeseeable development of the world economy made the liberalization programme particularly difficult to implement. In addition, as the programme was centered on the removal of distortions in the foreign trade sector without a similar correction of internal rigidities and imbalances, the manufacturing sector was not provided with sufficient flexibility and capability to gradually adjust to the changing set of economic parameters.

1.2. Peru's Development Experience in International Perspective

1.2.1 Structural Change and Growth of the Economy

During the 1970s, economic development in Peru was characterized by a pattern of structural transformation which proceeded relatively slowly, but along the lines which are generally associated with rising GDP. The share of agriculture in GDP fell from 16.8 per cent in 1970 to 11.8 per cent in 1980, whereas the share of manufacturing rose slightly from 24.7 per cent to 25.1 per cent (Table 4).

A closer look at the period reveals, however, that parallel to the levelling off of economic growth at the middle of the decade the "normal" pattern of structural change came to a halt, too. The share of agriculture in GDP became stagnant at somewhat less than 13 per cent after 1975. From a maximum of 26.6 per cent in 1976, the share of manufacturing was reduced to 24.6 per cent in 1978, as it was particularly hard hit by the 1977/1978 recession. In line with the overall development of the economy manufacturing resumed growth in 1979 and became a "leading" sector in 1980, resulting again in an increase of its share in GDP to 25.1 per cent. However, whereas total GDP continued to grow in 1981, due to an exceptionally good performance of the agricultural sector, manufacturing production stagnated. In 1982 and 1983, manufacturing was particularly severely affected by the economic crisis, experiencing negative growth rates of -2.5 per cent and -17.2 per

T A B L E 4

STRUCTURE OF GROSS DOMESTIC PRODUCT BY ECONOMIC ACTIVITY, 1970-1982

(Percentages)

conomic Activity	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
griculture	16.8	13.8	13.6	12.9	12.9	12.8	12.9	12.9	11.8	12.5	12.7
ining	7.1	6.9	6.6	5.7	5.9	7.3	8.1	8.4	8.2	7.6	8.1
anufacturing	24.7	25.4	26.2	26.1	26.6	25.4	24.6	24.6	25.1	24.1	23.4
Food processing	8.9	6.3	7.4	7.1	7.3	6.6	6.4	6.4	6.2	6.0	6.1
Textiles	3 6	3.6	3.5	3.4	3.5	3.0	2.1	3.1	3.0	2.6	2.5
Wood and wood products	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4
Paper and paper products	1.1	1.2	1.3	1.2	1.2	1.1	1.0	0.8	1.0	1.0	0.8
Chemical products	3.1	3.9	4.0	4.3	4.5	4.3	4.4	4.3	4.6	4.5	4.6
Non-mineral products	0.8	1.0	1.0	1.0	1.1	1.0	0.9	0.9	1.0	0.9	0.9
Basic metals	2.2	2.1	2.0	1.7	1.8	2.9	3.0	3.2	3.1	2.8	2.7
Metal products	2.2	3.5	3.7	4.0	3.9	3.6	3.0	3.0	3.6	3.5	3.0
Other manufacturing	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Handicraft industry	2.2	2.4	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1
tilities	0.6	0.8	0.8	0.8	0.9	1.0	1.1	1.1	1.1	1.2	1.2
onstruction	3.0	3.5	3.9	3.9	3.4	3.4	3.0	3.0	3.5	3.7	3.8
ommerce	12.6	14.0	14.3	15.0	14.3	13.7	13.4	13.6	13.9	14.1	13.6
ransport	5.0	5.5	5.7	6.0	6.2	6.3	6.4	6.5	6.7	6.8	6.8
ervices and other activities	30.1	30.2	28.9	29.7	29.4	30.5	30.5	29.8	29.9	30.0	30.4
DP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

ource: World Bank (1983), Annex Table I-2.

cent respectively. As a result, since 1981 the Peruvian economy experienced a "reversed" pattern of structural change, characterized by a rising share of agriculture and a falling share of manufacturing in GDP.

In an international perspective, at the beginning of the 1980s Peru had a relatively high share of industry in GDP, which in fact was even greater in Peru than in the most advanced newly industrializing countries. Restructuring the comparison to manufacturing alone, Peru's share in GDP of 24 per cent in 1980 was above the average of the group of middle income countries (17.6 per cent). It was larger than the share of manufacturing in Mexico's GDP (23.5 per cent) and came close to the respective shares of countries as Argentina (26 per cent) and Brazil (28 per cent). These data seem to put Peru in line with some of the most advanced developing countries. However, in view of the trends of structural transformation outlined above they should not be mistaken to indicate a similarly satisfactory development experience.

This is corrobarated by the figures given in Tables 5 and 6, which indicate that the economic performance of Peru relative to other Latin American countries deteriorated in the second half of the 1970s, and which support the argument that it were the particular characteristics of the growth process until 1975, which led to this deterioration. In fact, Peru's GDP per capita, which had accounted for 91 per cent of the regional average in 1970, had dropped in relative terms to 85 per cent in 1975 and to 71.5 per cent in 1981. Similarly, manufacturing value added per capita expressed as a share of the regional average declined from 90.5 per cent in 1970 to 84 per cent in 1975 and to 70.5 per cent in 1981.

TABLE 5

INTERNATIONAL COMPARISONS OF ECONOMIC PERFORMANCE

(at 1975 prices)

Measure	Year of Period	Peru	Latin America	Developing countries Total
GDP per capita (US $)	1963	792	802	324
	1970	911	1005	409
	1975	1004	1178	478
	1981	959	1341	533
MVA per capita (US $)	1963	170	172	48
	1970	218	241	68
	1975	250	297	85
	1981	234	332	101
Total exports/GDP (percent)	1963	21.34	19.26	23.52
	1970	18.74	18.07	26.59
	1975	10.84	12.99	23.44
	1981	12.19	13.89	23.30
Total imports/GDP (percent)	1963	16.95	13.43	16.61
	1970	18.01	14.59	17.80
	1975	19.49	15.80	22.40
	1981	19.77	16.47	26.68
Gross capital formation per capita (US $)	1963	124	144	53
	1970	115	214	78
	1975	197	292	116
	1981	160	326	137

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

1.2.2 Structural Change of the Manufacturing Sector

During the 1970s, the structure of Peru's manufacturing sector changed significantly (Table 7). The share of non-durable consumer goods, which had accounted for 48.5 per cent of manufacturing value added in 1973, fell to 42.5 per cent in 1982. On the other hand, the share of intermediate goods increased from 35.5 per cent in 1973 to 44.1 per cent in 1982, whereas the share of capital goods fell from 16 per cent to 13.4 per cent.

The signifcant expansion of intermediate goods industries throughout the 1970s largely reflects the expansion of the processing of non-ferrous metals and of the branches producing industrial and other chemicals. Both branches use highly capital-intensive technologies to process the country's natural resources. Their dynamic development in the course of the 1970s was promoted by the industrial policy pursued by the Government, which granted priority status to basic industries.

On the other hand, both "traditional" labour-intensive branches producing for the basic needs of the population (such as textiles and clothing, footwear and furniture) and strategic branches with long-term growth prospects in the development process (engineering industries) showed little dynamism or even lost ground.

Despite of these aggregate patterns of structural change, in terms of individual sectors, food products continued to be the largest single contributor to manufacturing value added in 1982, followed closely by non-ferrous metals, textiles and beverages.

The pattern of structural transformation which was characteristic for the 1970s came to a halt and was even reversed during the decline of economic activity in 1982 and 1983. Individual sectors and branches were affected by the crisis to a different degree (Table 8). Apart from the production of fish meal, which suffered from a lack of inputs, the most seriously affected sector was metal products and machinery. Production in

TABLE 6

COMPARATIVE GROWTH RATES BY ECONOMIC SECTOR

(At 1975 Prices)

Sectors	Period	Peru	Latin America	Developing countries Total
Agriculture	1963-1970	3.74	3.01	2.37
	1970-1981	0.30	3.74	2.74
	1975-1981	0.99	3.71	2.63
Mining & quarrying	1963-1970	3.42	3.53	9.61
	1970-1981	4.66	-0.84	0.88
	1975-1981	7.76	3.18	-1.54
Manufacturing	1963-1970	6.15	7.45	7.37
	1970-1981	2.90	5.81	6.52
	1975-1981	0.99	4.81	5.75
Utilities	1963-1970	7.24	9.72	9.34
	1970-1981	9.09	9.10	9.41
	1975-1981	7.85	9.00	9.25
Construction	1963-1970	0.77	6.51	5.99
	1970-1981	3.46	6.26	7.96
	1975-1981	0.31	5.42	5.68
Services	1963-1970	4.28	6.17	5.93
	1970-1981	3.69	5.95	6.63
	1975-1981	1.80	5.29	5.87
Growth of GDP per capita (%)	1963-1970	1.58	3.03	3.13
	1970-1981	0.33	2.75	2.67
	1970-1975	1.88	3.48	3.34
	1975-1981	-0.92	2.39	1.94
Growth of MVA per capita (%)	1963-1970	3.22	4.58	4.71
	1970-1981	0.16	3.17	3.96
	1970-1975	2.78	4.69	4.81
	1975-1981	-1.72	2.23	3.23

Source: Statistics and Survey Unit, UNIDO.
Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

TABLE 7 COMPOSITION OF MANUFACTURING VALUE ADDED (AT 1975PRICES),1973-1982
(PERCENTAGES)

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Description (ISIC)	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
TOTAL MANUFACTURING(300)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Food products(311)	16.6	16.4	15.7	14.8	15.8	16.7	16.6	18.4	16.2	15.5
Beverages(313)	7.9	8.9	9.3	9.9	9.3	8.5	8.9	8.9	9.2	10.4
Tobacco(314)	2.1	2.2	2.1	2.0	2.1	2.0	2.1	2.1	2.3	2.5
Textiles(321)	12.0	11.2	10.8	11.1	10.0	11.5	11.7	10.0	10.4	10.7
Wearing apparel,except footwear(322)	2.8	2.8	2.7	2.4	2.2	1.8	1.6	1.5	1.1	0.0
Leather products(323)	0.8	0.7	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.0
Footwear,except rubber or plastic(324)	1.7	1.6	1.6	1.9	1.2	1.2	1.1	1.1	1.0	0.9
Wood products,except furniture(331)	1.6	1.5	1.4	2.0	1.9	1.9	1.8	1.5	1.5	0.0
Furniture,except metal(332)	1.1	1.1	1.3	0.8	0.7	0.6	0.5	0.6	0.5	0.0
Paper and products(341)	3.0	3.5	2.7	2.9	3.1	2.8	2.5	2.8	2.7	2.2
Printing and publishing(342)	2.9	2.7	2.4	2.3	1.9	1.8	1.4	1.4	1.8	2.0
Industrial chemicals(351)	3.5	3.7	3.9	4.1	4.7	5.1	5.1	4.9	5.1	6.1
Other chemicals(352)	5.8	5.8	6.4	7.0	6.3	6.4	5.6	6.2	6.6	7.6
Petroleum refineries(353)	3.1	3.1	3.1	3.0	3.1	3.1	3.5	3.3	3.4	3.9
Misc. petroleum and coal products(354)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Rubber products(355)	1.5	1.4	1.5	1.8	1.5	1.4	1.4	1.6	1.6	1.7
Plastic products(356)	2.3	2.4	2.5	2.3	2.2	2.0	2.2	2.2	2.5	2.8
Pottery,china,earthenware(361)	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.5
Glass and products(362)	1.0	0.9	1.0	1.1	1.0	0.8	0.9	0.9	0.9	1.1
Other non-metallic mineral prod.(369)	2.6	2.9	2.8	2.7	2.5	2.5	2.4	2.5	2.6	2.5
Iron and steel(371)	2.4	2.7	2.6	2.1	2.5	2.8	2.8	2.9	2.7	2.4
Non-ferrous metals(372)	7.8	7.2	6.4	7.0	10.9	12.7	14.2	12.1	11.9	13.7
Fabricated metal products(381)	4.2	4.2	4.2	3.8	3.8	3.6	3.3	3.6	3.4	3.5
Machinery,except electrical(382)	2.7	3.0	3.6	3.5	3.6	3.0	3.2	3.4	3.9	3.3
Machinery electric(383)	3.6	4.1	4.7	4.4	4.4	4.0	3.5	3.7	4.4	3.9
Transport equipment(384)	5.2	4.4	5.0	4.8	3.2	1.8	1.9	2.7	2.6	2.7
Professional & scientific equipm.(385)	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.0
Other manufactured products(390)	1.0	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.3	0.0
TOTAL MANUFACTURING IN MILLIONS US $	3124	3373	3563	3724	3612	3503	3665	4042	3904	3532

Source: Statistics and Survey Unit, UNIDO.Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

Note: TOTAL MANUFACTURING is the sum of the available components and does not necessarily correspond to ISIC 300 total.

FIG. 2: MANUFACTURING VALUE ADDED BY END USE, 1973-1982
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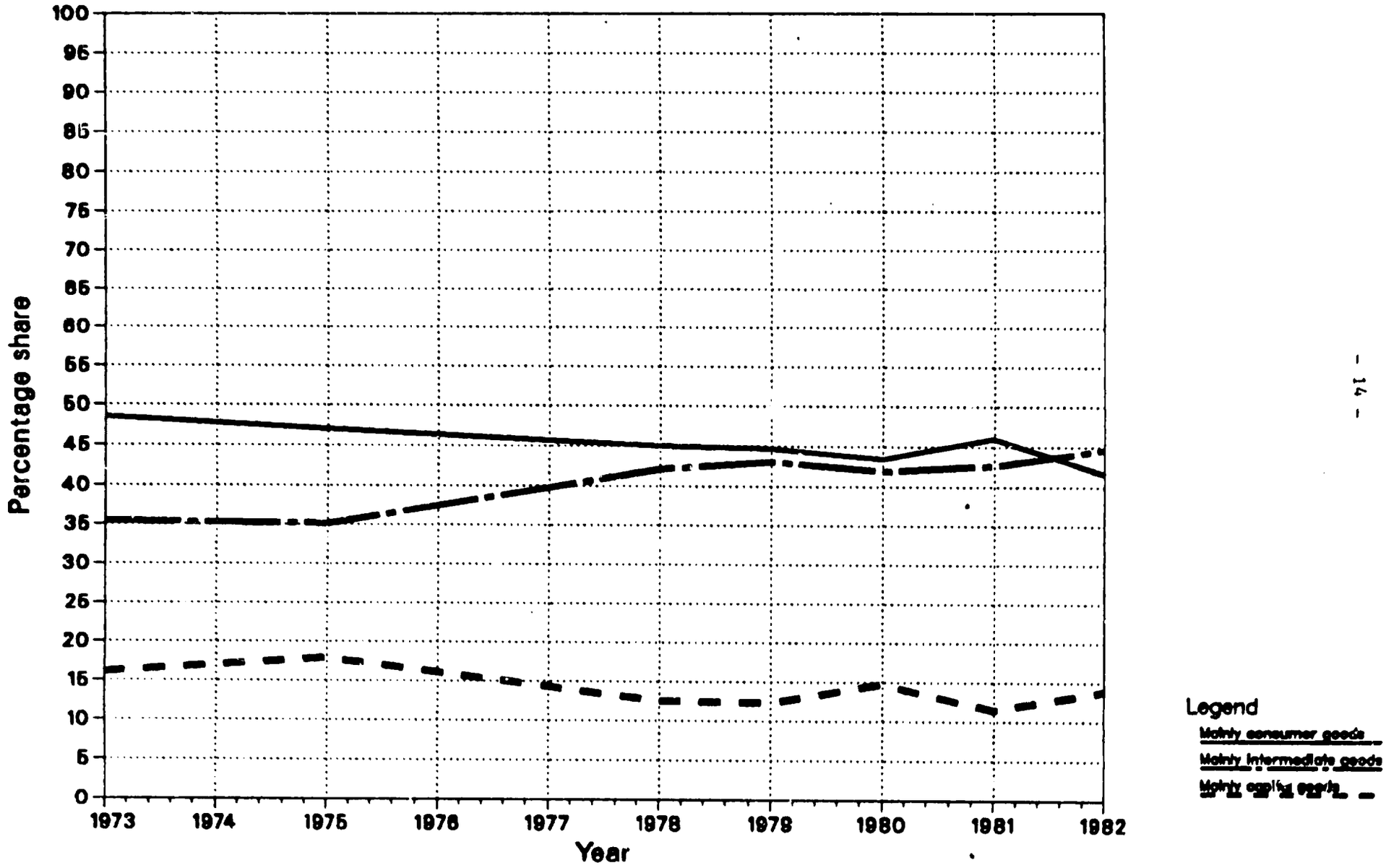


TABLE 8 VOLUME INDICES OF MANUFACTURING PRODUCTION: 1981, 1982 AND 1983 (BASE: 1973 = 100.0)

Industrial sectors and branches	Volume Index of production accumulated (January - October)			Relative variation (%)		INDICES accumulated annual figures (January - December)			Relative variation (%)	
	1981	1982 1/	1983 2/	1982/81	1983/82	1981	1982 2/	1983 3/	1982/81	1983/82
Manufacturing total	122.0	120.7	99.8	-1.1	-17.3	124.0	120.3	99.6	-3.0	-17.2
Manufacturing MITI	114.4	111.9	93.7	-2.2	-16.3	116.3	111.5	93.0	-4.1	-16.6
311 Fish meal	113.5	158.3	50.7	39.5	-68.0	113.2	152.5	62.4	34.7	-59.1
31 Food, beverages and tobacco	115.3	112.8	102.0	-2.2	-9.6	119.6	114.4	106.1	-4.3	-7.3
311-12 Food products	97.7	94.1	78.5	-3.7	-16.6	101.1	96.5	82.5	-4.5	-14.5
313 Beverages	138.2	134.5	134.0	-2.7	-0.4	143.5	135.1	138.5	-5.9	2.5
314 Tobacco	131.5	138.8	118.8	5.6	-14.4	137.5	139.7	122.7	1.6	-12.2
32 Textiles, clothing and shoes	96.3	92.2	79.8	-4.3	-13.4	96.2	93.1	81.4	-3.2	-12.6
321 Textiles	108.7	104.6	91.1	-3.8	-12.9	107.8	105.6	92.9	-2.0	-12.0
324 Footwear, except rubber or plastic	70.8	56.7	41.9	-19.9	-26.1	73.6	58.5	47.1	-20.5	-19.5
34 Paper, printing and publishing	90.2	79.7	70.5	-11.8	-11.5	90.6	77.2	66.6	-14.8	-13.7
341 Paper and products	110.2	83.2	71.9	-24.5	-13.6	112.4	83.4	70.5	-25.8	-15.5
342 Printing and publishing	77.0	77.5	69.6	0.6	-10.2	76.6	73.2	64.1	-4.4	-12.4
35 Chemicals	146.7	150.2	127.1	2.4	-15.4	147.1	148.7	123.2	1.1	-17.1
351 Industrial chemicals	180.7	199.2	177.0	10.2	-11.1	184.5	197.6	173.3	7.1	-12.3
352 Other chemicals	140.2	140.0	109.0	-0.1	-22.1	138.7	139.5	107.8	0.6	-22.7
353 Petroleum refineries	138.6	138.6	134.4	0.0	-3.0	138.8	137.9	129.1	-0.6	-6.4
355 Rubber products	128.6	120.8	101.2	-6.1	-16.2	129.8	116.8	91.3	-10.0	-21.8
356 Plastic products	136.3	140.3	104.9	2.9	-25.2	136.5	136.2	99.4	-0.2	-27.0
36 Non-metallic minerals	127.5	123.4	103.9	-3.2	-15.8	127.9	123.3	95.4	-3.6	-22.6
361 Pottery, china, earthenware	138.1	120.2	116.9	-13.0	-2.7	137.4	133.1	129.2	-3.1	-2.9
362 Glass and products	113.6	136.5	108.0	20.2	-20.9	117.8	135.0	106.0	14.6	-21.5
369 Other non-metallic mineral products	130.3	119.6	100.3	-8.2	-16.1	129.7	117.7	94.7	-9.3	-19.5
37 Basic metals	173.1	176.5	159.1	2.0	-9.9	177.2	175.1	158.7	-1.2	-9.4
371 Iron and steel	143.6	127.8	110.9	-11.0	-13.2	141.0	116.6	100.5	-17.3	-13.8
372 Non-ferrous metals	181.[illegible]	193.9	176.3	5.5	-9.1	190.1	195.9	179.4	3.1	-8.4
38 Metal products and machinery	116.0	103.6	67.8	-10.7	-34.6	118.4	102.4	63.6	-13.5	-37.0
381 Fabricated metal products	101.1	101.0	71.4	-0.1	-29.3	100.5	98.8	69.6	-1.7	-30.6
382 Machinery, except electrical	172.0	128.8	113.4	-25.1	-12.0	175.7	129.6	103.9	-26.2	-19.8
383 Machinery electric	148.7	125.0	74.7	-15.9	-40.2	153.1	122.7	70.6	-19.9	-12.5
384 Transport equipment	60.7	68.2	29.4	12.4	56.9	63.4	67.8	27.2	6.9	-69.6

1/ Preliminary figures
2/ Estimates of the manufacturing index on the basis of a sub-sample of selected industries
3/ Estimates based on production indices until October
Source: Ministry of Industry, Tourism and Integration.

this branch was 46.3 per cent lower in 1983 compared to 1981 and within the sector, transport equipment (-57.1 per cent) and electrical machinery (-53.9 per cent) were especially hard hit. On the other extreme, agro-based (beverages and tobacco), traditional labour-intensive (textiles) and natural resource-based (industrial chemicals, petroleum refineries, non-ferrous metals) activities registered smaller reductions than the average for total manufacturing.

Another important indicator of the structural changes in industry is the increase in non-traditional exports (NTX). Starting from a relatively low base, NTX increased rapidly between 1972 and 1974 (see Table 9) and accounted for around 10 per cent of total exports in 1974. However, NTX played an increasingly important role after the mid-1970's, and by 1980 their share in total exports had increased to 21 per cent. Fishmeal, textiles, metal-mechanics, chemicals and steel and iron constituted the major non-traditional export commodities.

The increase in exports for most of these goods after 1975 could partly compensate for a decline in sales on the internal market. As a result the share of exports in gross output of those sectors increased during the second half of the 70's with particularly high values for textiles. Since 1980, NTX have taken a turn downward notwithstanding a temporary increase in 1982. Thus, the decline in industrial output during the last three years has been due to a decrease in sales on the national as well as the international market.

In an international comparative perspective, the development and structural composition of Peru's manufacturing sector can be evaluated using coefficients of the Relative Degree of Industrialization by industrial branch (Table 10). The coefficients compare the value added of a branch in Peru to the hypothetical value added of this branch in a typical developing country, which would have the same GDP per capita, population size and degree of industrialization as Peru. For the 1975-1980 period, the results indicate that compared to developing countries with a similar per capita income and market size, Peru has a notably well developed manufacturing sectors. In terms of structural composition, the production of beverages and particularly

TABLE 9

NON-TRADITIONAL EXPORTS (Millions of US $)

YEAR	NTX	ANNUAL % CHANGE	FOOD-STUFF	FISH-MEAL	TEX-TILES	METAL MECHANICS	CHEMICALS	IRON & STEEL PRODUCTS	REST*
1970	34.2	—	7.8	7.0	1.3	1.2	6.3	3.1	7.4
1971	30.6	-10.5	7.5	8.4	1.1	0.9	4.2	2.3	6.3
1972	51.6	68.6	10.1	10.1	5.6	1.3	8.1	7.8	7.0
1973	113.0	119.0	25.2	19.4	16.4	4.1	13.0	22.7	13.2
1974	154.3	36.5	20.9	22.0	27.4	10.7	15.4	43.4	14.3
1975	107.5	-30.3	13.1	19.2	13.2	16.6	11.1	26.5	7.5
1976	136.7	27.2	16.6	27.2	30.9	18.4	15.5	14.2	13.8
1977	237.9	74.0	26.1	42.3	62.5	41.8	24.7	18.7	21.9
1978	343.5	44.4	39.3	62.3	102.6	35.7	45.1	34.0	24.3
1979	724.7	110.0	76.1	119.6	178.8	65.5	107.8	75.0	102.1
1980	831.6	14.8	70.4	119.2	230.5	55.2	140.5	80.0	135.9
1981	693.0	-17.7	60.0	106.0	231.0	58.0	80.0	48.0	110.0
1982	762.0	70.0	70.0	98.0	281.0	50.0	65.0	71.0	127.0
1983	555.0	-27.2	56.0	80.0	186.0	43.0	45.0	55.0	90.0

* includes wood and paper, leather products, artesanry, jewelry, gold, silver, non-metalic minerals.

Sources: 1970-80: Schydlowsky (1983:8).
1981: Peru Exporta, No. 95 (Dic. 82-En. 83) p.6.

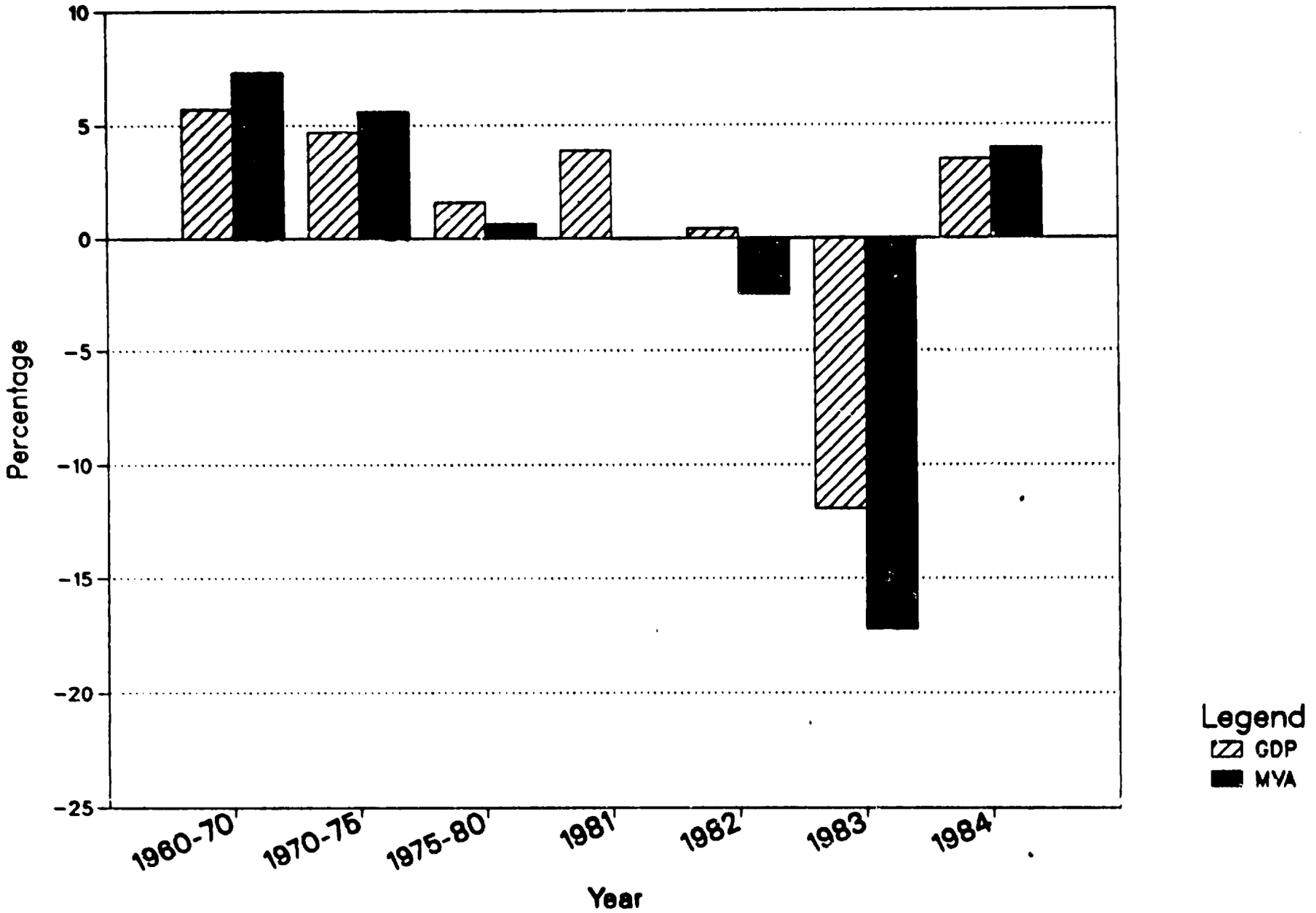
TABLE 10 RELATIVE DEGREE OF INDUSTRIALIZATION BY INDUSTRIAL BRANCH (1975 - 1980)

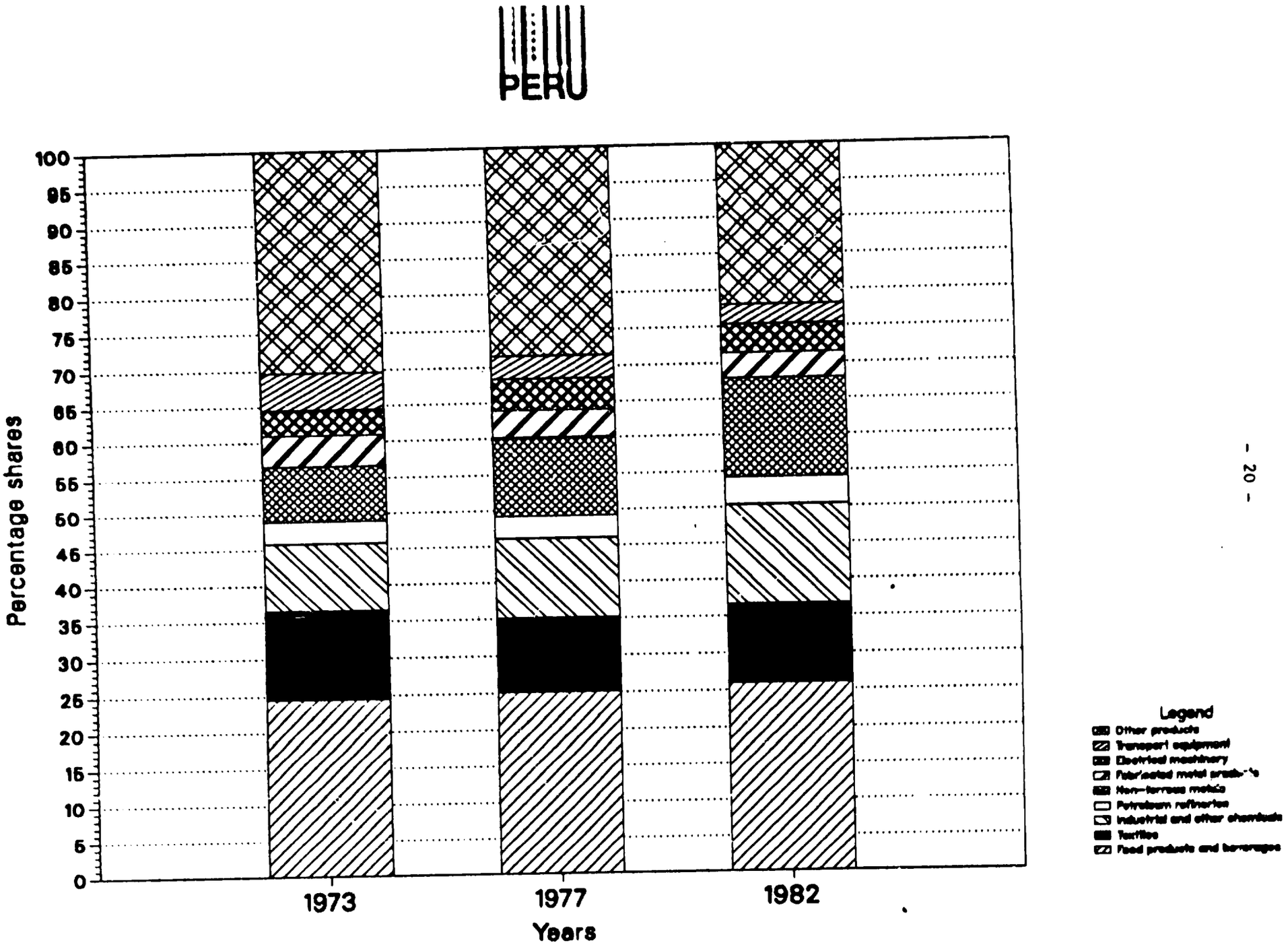
Branch (ISIC)	All countries	Developing countries	Comparable country group a/
Food products (311/2)	1.19	1.05	0.78
Beverages (313)	2.86*	2.77*	2.23*
Tobacco (314)	1.19	1.05	1.31
Textiles (321)	1.46	1.66	1.61
Wearing apparel (322)	0.84	0.86	1.38
Leather and fur products (323)	1.08	1.24	1.70
Footwear (324)	1.58	2.16	2.28
Wood and cork products (331)	0.94	1.10	1.80
Furniture,fixtures excl.metal (332)	0.71	0.98	1.04
Paper (341)	1.50	1.26	0.09
Printing and publishing (342)	0.96	0.82	0.08
Industrial chemicals (351)	1.54	1.55	1.54
Other chemicals (352)	1.76	1.09	0.96
Petroleum refineries (353)	1.40	0.74	1.71
Misc.products of petroleum and coal (354)	0.19*	0.16*	2.07
Rubber products (355)	1.13	0.88	0.46
Plastic products (356)	2.15*	1.43	0.98
Pottery, china, earthenware (361)	1.34	1.58	b/
Glass (362)	1.73	1.58	1.62
Other non-metall.mineral prods. (360)	0.81	0.68	0.50
Iron and steel (371)	0.94	0.90	0.96
Non ferrous metals (372)	13.07**	18.52*	12.53*
Metal products (381)	0.93	0.90	0.59
Non-electrical machinery (382)	1.24	1.33	1.10
Electrical machinery (383)	1.11	0.97	0.41*
Transport equipment (384)	0.83	0.67	0.63
Prof.,scientific equipment (385)	0.73	0.93	1.20
Other manufactures (390)	0.48	0.62	0.61
Total manufacturing (300)	1.27	1.38	1.42*

a/ Small countries with modest resources.

b/ Corresponding group average pattern could not be identified.

FIG.3: ANNUAL RATES OF GROWTH OF GDP AND MVA, 1960-1984
PERU




PERU
Percentage shares
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
1973
1977
1982
Years
Legend
Other products
Transport equipment
Electrical machinery
Fabricated metal products
Non-ferrous metals
Petroleum refineries
Industrial and other chemicals
Textiles
Food products and beverages

non-ferrous metals is significantly more developed in Peru than incomparable countries, whereas the size of the electrical machinery sector is lagging behind significantly.

Apart from these three branches all other branches in Peru correspond largely to the average development pattern of comparable countries. Thus, it does not follow from this international comparison, that industrial policy had an exceptionally distorting effect on the composition of the manufacturing sector. However, the difficulties involved in applying international cross-section data to one individual case should be kept in mind. Therefore, although it holds true that a new industrial policy would not primarily have to address fundamental changes in the allocation of resources between broad industrial branches, some important sectoral adjustments still remain to be undertaken (e.g. in the footwear industry, which will be discussed below as in the automobile industry discussed at length in the World Bank report (1981), which cannot be identified by this approach). In principal, however, future industrial policy should focus on an improvement in the utilization of resources within the individual branches through appropriate restructuring efforts at the branch level and improvements in the set of parameters faced by all branches alike. Particular attention, however, might need to be given to the electrical machinery subsector, whose development notably lagged behind in the second half of the 1970's. This result supports the special attention given to this subsector in subsequent parts of this report.

1.3 Summary and Conclusions

Despite an average annual growth rate of GDP of 3 per cent between 1970 and 1982, the performance of the Peruvian economy during this period cannot be considered satisfactory for various reasons.

Firstly, increasing growth rates in the first half of the 1970's were accompanied by growing macro- and micro-economic imbalances as well as a change of policy parameters which seems to have adversely affected economic growth. These constraints to economic growth were not attacked vigorously during the 1976/1978 recession, but favourable international conditions

accompanied by an increase of export incentives supported the resumption of economic growth in the two following years.

Secondly, throughout the 1970s the performance of the Peruvian economy lagged increasingly behind that of other countries in the region, indicating that the less dynamic performance of Peru's economy cannot be attributed to adverse external conditions alone.

The economic recovery which Peru experienced at the end of the decade came to a halt since the beginning of the 1980s, when attempts to correct some of the imbalances accumulated in the past were frustrated by deteriorating external conditions as well as by inconsistencies and insufficiencies in the reform attempt itself.

On the other hand, comparing the structural development of Peru's manufacturing sector to the experience of developing countries at a similar stage of development reveals that the development of the sector in the 1970s did not result in an exceptionally distorted structure at the branch level. Therefore, the medium-term chances for success appear to be quite promising for a new industrial policy aiming at a restructuring within the existing industrial branches and a removal of growth-reducing factors from the policy framework. A cautiously optimistic outlook seems also justified in view of Peru's rich endowment with natural resources and its relatively skilled labour force.

An integral part of a conceptionally consistent and politically manageable reformulation of the industrial policy framework should be an industrial policy package which allows a restructured industry to grow steadily along a lasting and predictable set of politically guaranteed rules. In the following chapter some industrial policy options based on these principles will be outlined.

II. INDUSTRIAL POLICIES

2.1 The Case for a New Industrial Policy

2.1.1 Essential Prerequisites of Industrial Policy

The task of industrial policy is to provide a consistent framework of rules and incentives that is conducive to lasting industrial growth. Such a general set of policies which is aimed at the establishment of favourable conditions for growth for the industrial sector as a whole needs to be supplemented by sector-specific policies promoting growth and structural change in selected industrial branches. The conceptualization of such an industrial policy set requires the identification of prevailing constraints to industrial growth and solutions to overcome them as well as the identification of key industrial sub-sectors with particular growth prospects.

Industrial policy cannot be understood and designed, however, in isolation from the socio-economic features characterizing the country's economic and political reality. It is thus indispensable to begin a discussion of industrial policy with an identification of some key structural linkages and limiting factors that have to be taken into account and addressed with appropriate policy measures. Such key issues can be briefly listed as follows:

Firstly, the key structural link in the economic development process is between agriculture and industry. Dynamic industrialization can only be maintained together with a growth of the agricultural sector (except for very special cases, e.g. Singapore), because sooner or later insufficient agricultural growth will generate negative impacts on industrial growth.

Secondly, in a market-oriented economy individual economic agents decide on the direction and quantity of investment and production on the basis of available data on present relative prices, profitability and demand, and on assessment of their expected future development. Although future events obviously cannot be fully predicted, the government's role is to contribute to

a reduction of that uncertainty by providing a consistent and lasting set of policies with clear objectives. Consistency and continuity of parameters is obviously vital for economic agents in all sectors of the economy. If in reaction to arising economic problems always new ad-hoc measures and thus constantly changing parameter sets are introduced, industrialists are likely to shy away from any investment project with a long gestation period and prefer investments (in whatever economic sector) which render a quick rate of return. Within the general outline of the development strategy chosen, changes in the national and international economic environment do nevertheless require a flexible response by the Government.

Thirdly, industrial policy in this sense is primarily supply-side policy, i.e. aiming at improving the competitiveness of the industrial sector. The provision of general (and sector-specific) conditions conducive to a resumption of industrial growth will not, however, evoke the desired response of entrepreneurs, if demand remains at a low level. In the present situation of economic recession and large excess capacities in Peru, a reactivation of demand is a necessary condition for further growth. In the absence of rising demand even the best industrial policies will not induce producers to increase investment and productivity.

Fourthly, the demand for investment goods is derived from the demand for consumer goods. Once consumer demand increases and investment follows (with a time lag) government policies have then to ensure that there is sufficient space for rising investment. 'Sufficient space' means sufficient availability of financial and real resources on the one hand and of foreign exchange on the other hand for acquiring plants and equipment from domestic and foreign sources.

Fifthly, in the case of a uniform exchange rate, exchange rate policy as an instrument to alter relative prices vis-a-vis the world market is virtually equivalent to the introduction of a uniform rate of subsidization (discrimination) of the same relative size imposed on the whole economy. It might, therefore, counteract any sector-specific industrial policy if it is not managed with due respect to its impact on the latter, or unless multiple exchange rates harmonized with sector-specific industrial policies are

applied.[1/] To provide stable parameters to Peruvian export-oriented and import competing activities in the long run, the exchange rate should be adjusted according to the differential rates of inflation between Peru and a basket of its most important trading partners.

2.1.2 An Approach to Industrial Policy

The conception of an industrial policy for Peru should be based on the recognition that neither a strategy of pure import substitution nor an indiscriminate opening up to the international market can provide a stable framework for economic recovery and development for a country like Peru. Rather, a potentially successful strategy has to follow a two-fold goal, in that it takes advantage of the international market without completely exposing industry to international competititon. Such a strategy combines the positive aspects of the liberal and the traditioal inward looking strategies, but it should also give importance to technology transfer and active national growth policy in light of international developments.

Two facts may be stressed here in terms of the close link between national industrial policy and the process of change and growth of the world economy. Firstly, for many production processes, Peru as a small economy does not have a sufficiently large domestic market to fully take advantage of economies of scale and improved possibilities for specialization. Secondly, during the last 10-15 years the international environment has been characterized by growing international economic interdependencies and division of labour (see section 2.3.). Therefore, the importance of international developments for the effectiveness and viability of national economic policy has sharply increased.[2/] This means inter alia that,

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1/ The merits and disadvantages of the latter approach, however, are outside the focus of this study.

2/ Referring to the Quito Declaration of Jan. 84, it can be concluded that this fact has been widely recognized by the Peruvian and other Latin American governments: "La expansión de las exportaciones de América Latina y el Caribe hacia los mercados de los Países industrializados es un factor indispensable, no sólo para fortalecer la capacidad de pago de nuestros países, sino también para asegurar un desarrollo sostenido y estable de la region." Declaración de Quito, Enero 12-13, 1984.

growing significance should be attached to the driving forces determining trade patterns and competitiveness. The role of technology is particularly important in this regard. An industrial strategy for Peru would thus need to emphasize growth through active participation in international trade, with gradual improvement of allocative efficiency and with systematic incorporation of techn logical changes. Considering the different levels of competitiveness that the different Peruvian manufacturing branches have reached at this level of industrial development, and given that these do not always reflect their true position within a successfully restructured economy, such a strategy necessarily has to involve a selective approach. Although such selectivity is not an easy strategy to follow due to the inherent difficulty and complexity involved, it appears to be the only viable one in the long run.

In the recent past, there have been several attemps in Latin American countries including Peru to reformulate industrial policy. These attempts were focused on changes in relative prices between domestic and foreign goods through changes in foreign trade policies, i.e. the introduction of a more flexible exchange rate coupled with export incentives for industrial products and a reduction of import tariffs. Thus, the aim was to circumvent the limitations of the internal market and induce the industrial sector to generate the foreign exchange needed for industrial imports. Thereby, it was expected that dynamic industrialization would resume. It became clear, however, also from the Peruvian experience, that only a limited number of companies actually used the exposure to international competition (on the exort market) to increase investments and productivity and to become competitive.

The absence of general conditions conducive to growth reduced the ability of enterprises to adjust to the new parameters. For Peru, therefore, the export expansion for a broad range of products was not achieved through a genuine increase of competitiveness which would have been necessary as a basis for continued export expansion. Instead, in the second half of the 70s, the combined effects of a strengthened export promoting system and slackening domestic demand made to a great deal the improved performance of exports the result of vent for surplus and rent-seeking activities. In addition, the liberalization of imports - intended to exert greater

competitive pressures on Peruvian producers - did not have the desired effect as it was introduced in a too rapid and far reaching manner and at a time when competition on the world market became fiercer. Moreover, it proved to be difficult to control the rapidly growing contraband.

In summary, although the policies implemented were certainly a step in the right direction, they were themselves insufficient to generate the desired impetus for industrial growth and restructuring. Only the combined impacts of a whole package of consistent policy measures will provide satisfactory framework for lasting take-off. Hence an effective industrial policy, necessarily should combine three elements: growth policy, allocational policy and trade policy.

Moreover, the necessary changes involved, when these policies are carried out have to be introduced slowly and in a foreseeable manner to prevent policy-made market disruptions.

2.2 The General Framework for Industrial Growth in Peru

In order to establish a consistent general framework for industrial policy it is necessary to identify the key present obstacles to a resumption of industrial growth and to an improvement in competitiveness. On that basis different policy measures to overcome these barriers are outlined.

2.2.1 The Direct Contribution of the Public Sector to Economic Growth

Besides the general prerequisites for growth outlined above the public sector may contribute directly to an improved economic performance in a number of ways, two of which are briefly discussed here.

Firstly, it is well known that the industrialization process requires continuous improvements of the physical infrastructure nation-wide to allow for relatively balanced regional development. However, given the geographic characteristics of Peru it is very difficult and above all costly to realize such a task. Taking into consideration present fiscal budget constraints it appears to be beyond any doubt, that expenditure for infrastructure cannot

have priority in the short and (possibly) the medium run. Improvements of infrastructure that will still be realized under the existing constraints would therefore need to be established according to a systematic consolidation of existing (and, eventually, the creation of new) industrial subcenters. Selective geographical concentration (outside the Lima-Callao area) rather than unconditional decentralization efforts, might induce the growth of viable agglomeration areas even under severe financial restrictions.

Secondly, apart from physical infrastructure, the provision of a coherent and efficient legal and administrative framework is a key prerequisite for the stimulation of growth. The adjustment of the framework of rules may be seen as a very difficult, yet absolutely essential task in a period of rapidly changing conditions in the economy, and it has to be executed with due consideration of the risk of bureaucratization of rules and procedures entailing impediments to industrial restructuring.

One particular problem in this context is that administrative systems of rules and incentives tend to cumulate whereby the final result is often in contradiction with the initial intentions. For Peru it appears to be necessary to analyze more systematically how the red tape which has accumulated in may parts of economic life could be reduced substantially.

Since rules and incentives, by definition, create opportunities for some and discriminate against others, it appears essential to establish only such rules, which can effectively be controlled by the public authorities.

2.2.2 Improving Competitiveness

A number of approaches are known to improve the conditions under which producers of goods and services have to compete on the national and international markets. Besides applying such (well-known) approaches,

special attention should be paid to the application of new technological developments to the production process.

The incorporation of new methods of organization, production and distribution can be fostered by various policy measures aiming at facilitating the availability of information about existing technologies and new developments and the transfer, adaptation and diffusion of the technology to potential users.

The transfer, diffusion, and (at a later stage) creation of technology require an institutional-organizational structure and network, the construction of which needs to be started and promoted now. The already existing institutions in this area like ITINTEC, CECAPES, SENATI, are important elements in such a network, and a number of new institutions have been established recently (TECSUP). However, until today the impact of these institutions as aides to economic and technical improvements seems to have been limited, despite their valuable contributions to many of these problems.

It is proposed, therefore, that efforts are undertaken to improve the coordination between private and public entities and to strengthen the impact of those institutions. Furthermore, a closer cooperation between natural and social scientists and engineers and economists should be aimed at in all decision-making units, and the mutual understanding should also be stimulated by multidisciplinary work at the University level. A measure of particular importance could be the foundation of a data-information bank and accompanying advisory facilities. The functions of such an institution would be to:

- collect information on the nature of technological developments,
- make that information available to all interested parties (e.g. upon request or regularly in the form of small bulletins),
- conduct feasiblity studies upon request as to their appropriateness for production processes in Peru,
- enquire upon requests as to which foreign companies provide a particular technology that a Peruvian producer is interested in, and on what terms.

It should be analyzed in more detail, whether all these functions could be carried out by ITINTEC. In any case it is important that such an effort is undertaken in close coordination between public and private entitites. Also, given the complexity and magnitude of the task, disaggregation on a sectoral level is crucial. Thus, the build-up of subdivisions in close connection with existing private associations, like the 'Comite Textil' or the 'Comite de Bienes de Capital' is vital.

It is equally important that serious consideration is given to the improvement and expansion of training programmes for workers. This issue is especially prone to close cooperation between the private and public sector with the provision of public training centers complementing on-the-job-training. Furthermore, attention should also be paid to the expansion of programmes of business administration such as those presently undertaken by ESAN, since improvements in the soundness of management and organizational structure would greatly contribute to a reduction of X-inefficiencies and an increase in productivity.

The discussion so far has mainly focused on the acquisition of better manufacturing capabilities. However, design capability and effective quality control are two other important factors which may contribute to an improvement of supply conditions. They both are closely linked to the acquisition of advanced managerial and technical qualifications as well.

Complementary to these considerations it is especially important to improve the transparency of the markets for potential exporters and to guide their entrance to the international markets. The institutional-organization infrastructure required to handle this task successfully is quite similar to the one discussed before. Here we are, however, dealing with the gathering, evaluation and diffusion of information about product markets rather than technological developments. Again a fruitful cooperation between public and private entities has to be aimed at. In view of the already existing institutions and associations in this area in Peru it is recommended that the task of constant market search and evaluation be carried out in close coordination between FOPEX and ADEX (whether under the direct auspices of one or the other remains to be studied). To facilitate the establishment of a data bank and on-going industry or product-specific market evaluations,

existing international bodies ad institutes should be tapped for information, wherever possible. Furthermore, participation in important international trade fairs should be promoted effectively, not only for the purpose of gathering information, but also to enhance the visibility of Peruvian products abroad.

Part of the export success of some of the East Asian countries is possibly due to the fact that a large share of their foreign trade is carried out by a small number of big trading companies. The advantages of such trading companies become very obvious, when we consider the economies of scale to be derived from market research and penetration. It appears to be doubtful though, that such a concept could be copied without major modification in Peru. The point to be seriously considered is, however, that for successful operations on the international markets, economically viable entities have to be developed on the national level. To foster this process, the foundation of (semi-) private institutions should be considered, which concentrate and handle the export activities of small national firms and which use its privileged knowledge of international developments efficiently to stimulate the competitive position of national producers.

2.2.3. Correcting Imbalances in the Industrial Sector

Today, Peru's manufacturing sector is characterized by two major imbalances, which - although interrelated to a certain extent - are separated here for analystical purposes: the imbalance in the incentive structure which favours capital intensity of production and discriminates against the employment of labour, and the imbalance between the formal and informal sector.

These imbalances pose a problem for further dynamic growth and need to be corrected. In view of the high rate of un- and underemployment in Peru an incentive structure in favour of capital leads to smaller creation of employment of labour than a more balanced incentive structure would do. The Labour Stability Law (LSL) in its present form reinforces this trend. The implications of the LSL can be analyzed under two aspects: the impact on

entrepreneurs' behaviour on the one hand, and the realization of job security for workers on the other hand. Since producers usually do not employ workers for more than three years any more, the result is not only a higher turn-over in employment, but also the absence of large investments in training programmes. Furthermore, that part of the wage bill corresponding to 'tenured' workers becomes a fixed cost, which is an aggravating factor in times of severe economic recession. From the workers' point of view, under present economic conditions the LSL defeats its original purposse: job security for all employed. It can provide this security only for a relatively small number of privileged workers and at the expense of the rest.

The discrimination against employing labour poses a strong incentive for small labour-intensive operations to be conducted in the informal sector. There, the distortion of relative factor prices is exactly the opposite of what it is in the formal sector: labour is relatively cheaper and capital is relatively more expensive. Also in contrast to the formal sector, protection of workers is non-existent (be it in the form of job security or minimum wages). Finally, the growth of the informal industrial sector not only implies loss of revenue for the government (in the form of unpaid taxes), and thus an increasing tax burden on thos in the formcl sector, but also an incrasing lack of trnsparency in the economy, which makes it even more difficult for private and public economic agents to predict and shape future economic developments.

Since the present system of fiscal incentives and taxes was analyzed at length elsewhere, a detailed discussion will not be repeated here. However, it seems absolutely vital that the investment incentives re redesigned in such a way as tu neutralize the negative impact of labour chargers.

A reformulation of the Labour Stability Law (LSL) would also need to be considered. In view of the complicated and sensitive nature of the matter, a cautious way would need to be followed, which does not impose an additional burden on the work foreseen. One possible strategy would be to maintain the LSL in its present form, and to complement it with an attractive alternative, so that the number of 'tenured' workers will become increasingly smaller over time.

Such an alternative could take different forms, two of which are discussed below:

(1) One possibility would be to allow for time contracts exceeding three years. Since the present LSL de facto works in such a way, that few entrepreneurs will extend employment after three yers, the option of time contracts for more than three years will offer more stability and security to employees (yet no 'tenure' for life) and might induce entrepreneurs to expand their training facilities. For time contracts to be attractive for presently tenured workers too, they would have to be coupled with a higher wage.

(2) Another alternative might be to allow for time contracts at a higher wage than under the LSL option coupled with the provision of some unemployment compensation upon termination and non-renewal of the contract. The creation of an unemployment compensation scheme encompassing all workers obviously has to be a long-term project for Peru in face of limited financial resources and the frequent occurrence of unemployment. Yet it is worthwhile studying in more depth, whether it would be feasible financially to start on a small-scale as envisioned here, where unemployment compensation is only available to those workers choosing this employment alternative. If the problem of financing such an unemployment fund can be resolved satisfactorily, this alternative seems to be very promising and might find a positive response by workers, since it promises a minimum amount of security during a limited part of the unemployment period.

To reduce the imbalances between the formal and the informal sector, the entry costs into the formal sector, i.,e. the costs of registering a new firm, have to be drastically reduced in terms of time and money. It should be considered to extend the experimental new system of registration for small enterprises currently conducted by the Ministry of Industry to comprise all new firms.

Furthermore, to entice firms to leave the informal sector, small-scale industry in the formal sector should be given special attention, which could take the form of small subsidized loans, temporaty profit tax exemption, provision of specific services, etc.

The provision of specific incentives on the one hand has to be complemented though, with an improvement in the control mechanisms on the other hand. Control then has to be exercised after a grace period of a few years (e.g. 2-3 years) over those firms remaining in the informal sector, at least over those of a certain size (e.g. with more than 3 or 5 workers).

2.3 Sector-Specific Policies

2.3.1 Implications of Sectoral Policies

The general idea underlying sector-specific policies is that global growth policy is insufficient to stimulate the dynamic forces of an economy in an optimal way. Growth requires a continuous and rapid movement of factors of production from declining sectors, to new, dynamic sectors with a high growth potential. An active sectoral policy should facilitate this reallocation by making the inherent growth potential of different sectors more visible and calculable. Beyond this it should increase the profitability of activities in the favoured sectors at the expense of sectors of lower priority.

A central issue to be addressed before designing such policies is the selection of sectors which should be promoted. Given the framework for growth (= given the conditions offered to all producers alike), the provision of even better conditions to some can only be reached at the expense of the rest. Reformulating this statement in terms of a growing economy two very important conclusions emerge:

1. With a given rate of growth for the whole economy the discrimination of some industrial branches does not necessarily lead to their absolute decline. Rather, the discrimination can be reflected in a differentiation of sectoral growth rates.

2. The more pronounced the differences are between favoured and discriminated sectors, the more intensive will be the drive to growing sectors. This process will only succeed without major tensions on factor and commodity markets, if the inter-sectoral transfer of factors is not hindered. Skill limitations, fragmented markets, and economic policy itself might be obstacles to flexible adjustment. The adjustment problem, which is one of the most striking growth obstacles in developed countries as well, has to be attacked on both fronts: fostering growth in the selected sectors and easing the process of restructuring in the shrinking branches.

Based on these considerations, three main problem areas can be expected when sectoral policies are implemented.

1. A higher growth rate of income will be achieved after all adjustments have taken place, if and only if the sectors selected as a target for industrial policy can grow over a longer planning period. The selection of sectors should therefore take into account emerging trends in national and international markets, changes in technology and implications of government policies in other countries.

2. If growth can really be accelerated, the factors of production are forced to move more rapidly from one use to the next. Therefore, a rigorous policy to stimulate the mobility of the factors of production is a necessary complement to sectoral growth policy. It is especially this point which shows, that sector specific policies have to be devised with due respect to the global economic policy framework.

3. If sectoral policy succeeds in establishing an effective incentive system which discriminates between various sectors, it runs the risk of effectively hindering the development of new complementary industries which are not covered by the initial subsidization scheme. Furthermore, the emergence of new growth sectors might be hindered, too.

Given these three major implications of sectoral policy, its crucial aspects become obvious:

1. Sectoral policy must rely on long-term projections, but it must at the same time be open to flexible adjustment to new economic conditions.

2. The capacity to adjust smoothly to changing economic conditions must be stimulated, if the scope for growth provided by specific policies is to be really used.

3. The success of sectoral policy depends on the selection of the 'right sectors'. The identification of possible future growth sectors, therefore, becomes an essential prerequisite for sectoral industrial policy. It is this last point, which will be at the center of the following analysis.

2.3.2 Guidelines for the Identification of Growth Sectors

In the previous section, the importance of creating a general policy framework for industrial restructuring and expansion was emphasized. Given that in the Peruvian case a resumption of industrial development along new lines has to be achieved in a period of austerity, and that different industrial branches have reached a different degree of competitiveness the need for priority setting in terms of industrial subsectors emerges. Whereas in a situation of equilibrium and overall growth, entrepreneurs would be induced by the general policies to direct resources to the prospective growth industries, the current situation in Peru as in many of the developing countries calls for the establishment of such a scheme by the government and thus for an evaluation of growth prospects in different industries. To this end, the basic criteria for assessing growth prospects in individual industrial branches would need to be reviewed.

The criteria which are being used in this respect in the developing countries cover inter alia the degree of backward and forward linkages, natural resource availability, relative value added content, geographicl proximity and factor endowments. The factor proportions model of international trade can indeed explain to a large extent the industrializataion process of some of the most successful developing countries. Recent studies by different authors conclude that many of the fastest growing developing economies in the 1960's and 1970's were those countries aligned most closely with their comparative advantages in this regard and which in addition managed to adjust flexibly to changing external and internal conditions.

In recent years, however, international price differences between unskilled labour and capital, appear to become less important for the determination of international trade and development patterns, due to the impact of technological change on world wide production.

Thus, for a small economy like Peru it is of utmost importance to carefully evaluate new technological developments in the world market before deciding on sectoral strategies in order to efficiently exploit existing knowledge in advanced countries and to project the impact of the new technologies on the growth prospects of current manufacturing activities.

Based on an analysis of recent changes in the nature of production and trade patterns in the world economy, two major consequences emerge for the identification of possible growth sectors in Peru:

(1) Specialization in industrial branches using labour-intensive production processes is increasingly challenged by capital intensification connected with the extensive use of new technologies (micro-electronics, computers, numerically-controlled machinery etc.), which tends to counteract the advantages of cheap and unskilled labour.

This is not to say, however, that comparative advantages are lost immediately and for the whole sector. Firstly, the introduction of new technologies in the industrialized countries is a time consuming process both in view of social resistances and the persistently high costs of capital. Secondly, technical progress is not equally applicable to all production processes within one branch, so that for many (sub) categories of products, labour-intensive production remains the most efficient solution in econmic terms.

Therefore, specialization in labour-intensive industries remains a promising strategy for a (reduced) number of sub-sectors within what has traditionally been called a 'labour-intensive industry'.

2. New specialization possibilities arise for Peru also in branches which traditionally were referred to as "capital intensive industries". Mainly four reasons can be found for this development:

   (a) New products undergo different stages of production (called the product cycle). They usually start to be produced on a small scale and very technology-intensive. This constitutes a comparative advantage for producers in developed countries. During the course of maturation, the products and the production processes become more and more standardized, and products find a larger market, so that countries endowed with lower-level technology and low priced labour become increasingly capable of producing these standardized commodities.

   (b) Industrial manufacturing becomes more and more complex within the advanced countries, and the production process itself is increasingly open to separation into single operations and subsequent redeployment in nearly all relevant branches.

   (c) New technologies also tend to confer new comparative advantages on countries which have a relatively skilled labour force available at wage rates substantially lower than in the industrialized countries.

   (d) During the development process skills improve in LDCs, so that an increasing range of production processes becomes a possible target for industrial policy.

In conclusion, while there is a progressive erosion of traditional trade structures to be expected in the medium and long run, new export chances for Peru arise within a fairly wide range of manufacturing sectors, which had been exclusively reserved to producers in advanced countries until recently.

2.3.3 A Dynamic Outlet of Sectoral Industrial Policy

Peru had developed some of the principal prerequisites for sustained development already in the 1960's, and by then she had reached a similar stage of development as Brazil (although there is an obvious difference in size), as the Republic of Korea (although the latter could count on considerable U.S foreign aid), and as Malaysia or Colombia. However, whereas these countries doubled national income during the following 10-15 years,

and are today commonly referred to as the NIC's (Newly Industrializing Countries). Peru's economic growth could not keep pace. Today, her GDP per capita is not significantly higher than in the 1965-70 period.

On the other hand, with a number of other countries, Peru has good prospects to form the group of successful developing countries of the second generation, in view of its diversified industrial sector, its relatively skilled labour force and its rich endowment with natural resources. Industrial policy will be a decisive factor to stimulate this process.

As a first step, industrial policy should be focused on the requirements of sectors which presently appear to have the most promising potential for a resumption of industrial growth. A review and evaluation with an international perspective of the recent performance of Peru's industrial exports will be used to identify such sectors. In a second stage and subsequent to this reactivation programme economic policy should be targeted at establishing a new basis for sustained industrial growth and facilitate the allocation of resources to new dynamic (sub-) branches in line with the degree of competitiveness reached by these branches.

2.3.3.1 Sectoral Policy for Economic Reactivation

In the short term, industries which are based on well known technologies and/or which are intensive in the use of relatively unskilled human labour appear to have the greatest potential to raise their efficiency to international standards and to contribute to a revitalization of domestic demand. The question which particular branches and sub-branches should be given special attention in Peru will be attempted to be answered using two different methods:

(1) An index of product groups which have shown especially successful performance in LDCs as developed by Tuong/Yeats (1980) based on Michaely (1977). Using trade and income data, Michaely correlated export structures with the relative income positions of countries and calculated product income export levels for the different SITC categories as well as countries' income export levels. Based on Michaely, Tuong/Yeats identified the range of manufactured products exported by the most successful developing countries in the past (group I products), and with the help of income extrapolations, the range of potentially successful exports by the advanced developing countries in the 1980s (group II products). Group I and II products are shown in Table 11.

(2) A constant market share analysis (CMS) is applied to Peru which sheds some light on the relative export performance of Peruvian manufactures during tdhe 1975-80 period. CMS-analysis is a method by which past growth rates of exports can be split numerically, thus revealing a world trade component, a product composition component, a market composition component, and a component representing changes in the country's international competitive position.1/

Based on the results of these analyses Peru's exports will be classified into two groups:

The first group consists of successful actual exports according to the CMS analysis. Some of these overlap with the first group products according to Tuong/Yeats while others are among the second group products - a fact which deserves close attention as it underlines Peru's promising potential for further export diversification. The other group comprises those products in the Tuong/Yeats classification which are not among the successful export items according to the CMS analysis, but which do not meet especially adverse conditions of production in Peru (potential export growth sectors).

However, both analyses are based on historical data, and therefore they do not necessarily reflect the whole scope for future growth. This problem cannot be solved completely, but some further insight may be gained from the previous discussion about new trends in the world economy. All three elements will be combined to analyze the development prospects of selected industries in Peru. Despite the fact that a positive sector indication appears to be highly tentative in a rapidly changing world, the identification of relatively successful sectors by this procedure will provide additional information as to the development and export potential

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1/ The world market component is the hypothetical increase of Peru's exports under the assumption that Peru's share in total world exports would have remained unchanged. The particularly interesting market and product composition components indicate, whether exports were concentrated more on dynamically growing products in world trade and fast growing import markets (positive signs of coefficients) or on less dynamic products and less dynamic markets (negative signs of coeffients). The competitiveness component is a residual and does not necessarily capture changes of genuine competitiveness at the plant level, since it also reflects exchange rate variations, changes in the export promotion system etc. In addition the CMS-coefficients do not show causal relationships. Therefore, tne value of a CMS-analysis as an analytical tool crucially depends on a careful interpretation of the findings.

of Peru's manufacturing sector.[1]/

According to the Tuong/Yeats classification which is shown in Table 11, eleven product groups have proven to be especially successful exports for advanced developing countries (group I products). While the relative income position of those countries[2]/ ranged from about 18 per cent to 28 per cent in 1973, Peru's relative income position was only 10 per cent, and in 1980, it was even lower. Thus, only on the basis of the cross-section analysis Peru's exports should not be expected to go beyond the group I products. The fact that Peru already proved to be quite successful in exporting many group II products (c.f. 2.3.3.2.) supports the optimistic outlook that the basic conditions to return to sustained industrial growth are given in Peru: a widely developed manufacturing sector, a skilled labour force, talented entrepreneurs and rich natural resources.

Comparing the first group products according to the Tuong/Yeats classification with the findings of the CMS-analysis for Peru reveals three sectors, which have been especially successful in Peru and the majority of the developing countries alike: footwear, and - reflecting Peru's resource endowment -, copper products.

1/ In the case of Peru, this approach to identify industrial sectors which might qualify for future promotion measures has additional advantages. It was argued before that stabilization policies after 1975 had a depressive impact on national markets. Nearly all industrial subsectors suffered severe decline due to declining demand. Under such circumstances entrepreneurs (as well as public planners) faced with growing idle capacity do not find many indications of promising future activities in the national market. An analysis of export performance, especially with respect to the similarly structured markets of the Andean Pact, might therefore provide a valuable indication of the future growth potential of national industrial sectors in a recessionary economy.

2/ The relative income position for each country is defined as its GNP per capita as a percentage of US GNP per capita.

T A B L E 11

SECTORAL POLICY TARGETS

SITC 3-Digit Tuong/Yeats	Peru CMS-Analysis (1) Actual export growth sectors (Peru's 1. Stage)	Peru Potential export growth sectors (2) (Peru's 2. Stage)
1. Group Products		
611 Leather		
631 Plywood and veneers		631
633 Cork manufactures		633
651 Yarn and thread production	651	
652 Woven cotton fabrics	652	
656 Textile products, nes	656	
661 Cement building products		
682 Copper products	682	
687 Tin products		687
831 Travel goods and handbags		831
841 Clothing, except fur	841	
851 Footwear	851	
2. Group Products		
612 Leather manufactures		612
613 Dressed furskins		613
629 Rubber articles, nes		629
632 Wood manufactures, nes		
642 Paper articles		642
653 Woven non-cotton fabrics		653
654 Lace and ribbons		654
655 Special textile products		655
657 Floor coverings	657	
662 Clay building products		662
665 Glassware	665	
666 Pottery	666	
671 Pig iron		
672 Iron and steel ingots		
676 Steel rails		
681 Silver and platinum products	681	
685 Lead products	(685)	
686 Zinc products		686
689 Non-ferrous metal products		689
692 Metal containers		692
693 Non-electric wire products		693
694 Nails and screws		694
696 Cutlery		696
697 Base metal household equipment		697

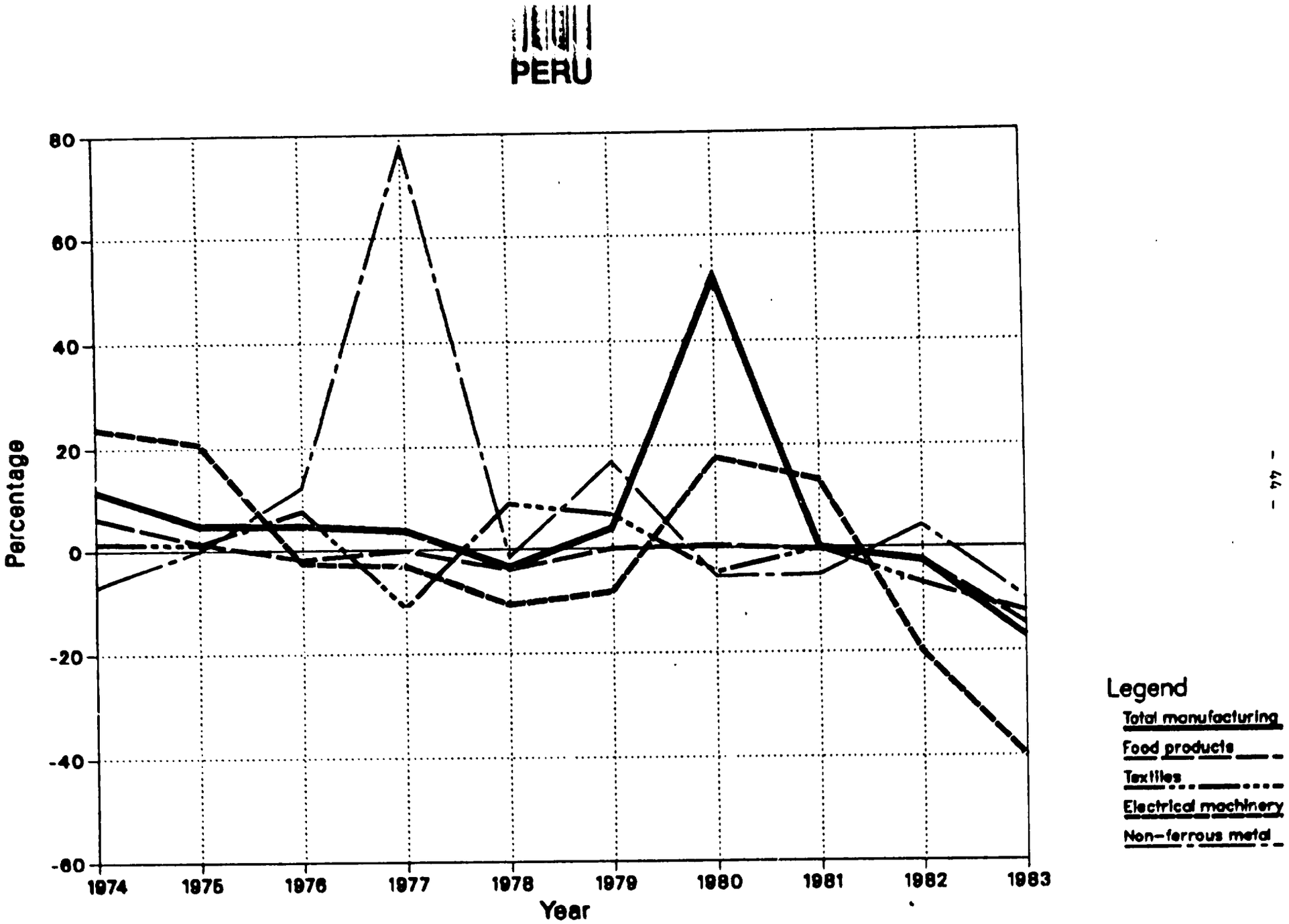
Table 72 (continued)

698 Metal manufactures, nes		698
723 Electric distribution machinery		723
724 Telecommunications equipment		724
733 Road non-motor vehicles		
735 Ships and boats		735
842 Fur clothing		842
863 Developed cinema film		
864 Watches and clocks		864
891 Musical instruments		891
892 Printed matter	892	
894 Sporting goods		894
897 Gold and silver jewelry	897	
899 Other manufactures		899

(1) Products with successful export performance between 1975 and 1980.

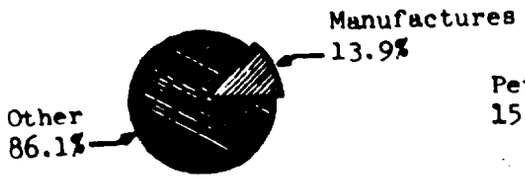
(2) Possible growth sectors are those whose production possibilities are not questioned by present indications to the contrary.

Source: Tuong/Yeats (1980: 538),
CMS-Analysis prepared by UNIDO.

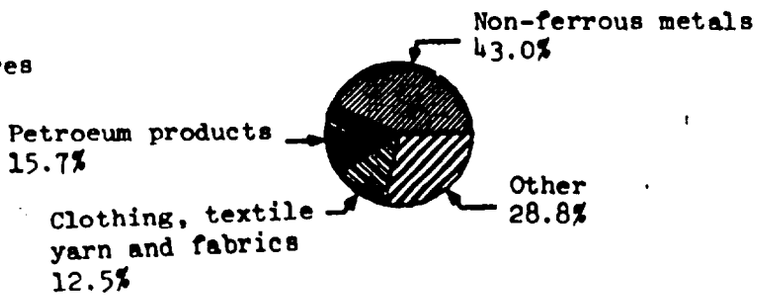

PERU
80
60
40
20
0
-20
-40
-60
Percentage
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
Year
Legend
Total manufacturing
Food products
Textiles
Electrical machinery
Non-ferrous metal

MANUFACTURED EXPORTS AND IMPORTS IN 1982
PERU

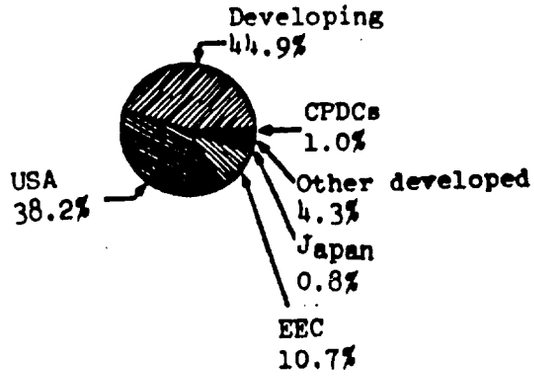
SHARE OF MANUFACTURES IN TOTAL EXPORTS



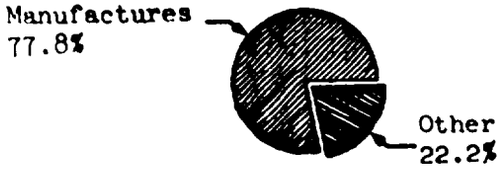
COMPOSITION OF MANUFACTURED EXPORTS



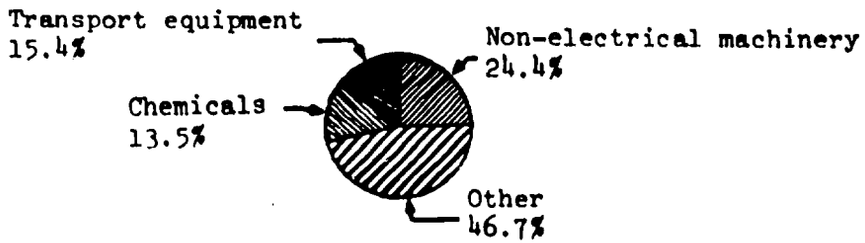
DESTINATION OF MANUFACTURED EXPORTS



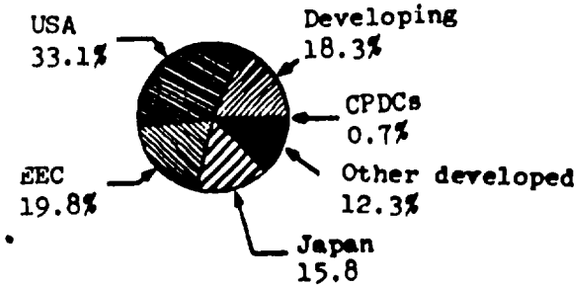
SHARE OF MANUFACTURES IN TOTAL IMPORTS



COMPOSITION OF MANUFACTURED IMPORTS



ORIGIN OF MANUFACTURED IMPORTS



(a) Textile and related products

Peru has been a long-standing producer of high quality cotton, and she surely is one of the leading producers of special wool products (llama, alpaca). Nevertheless, only minor growth rates for these products were achieved on the international market (1975-1980). Negative signs for the product composition and the market composition effects in the CMS analysis (except in the case of wool) seem to indicate that unfavourable world market conditions and developments in the particular export markets are partly responsible for this result.

A look at the processing sector reveals a complex picture. Exports of textile yarn and thread (651) and woven cotton fabrics (652), the quantitatively most important textile subsectors, evolved dynamically. So did sectors 655 (special textile fabrics and related products), 656 (made-up articles, mainly or chiefly of textile materials, n.e.s.) and 657 (floor coverings, tapestries, etc.), which are of minor quantitative importance. SITC 653 (textile fabrics other than cotton) showed less dynamism compared to the other sectors of this group.

Textile yarn and thread production has been the most important sector in this subgroup (adding more than 48 per cent to the sector growth) followed by woven cotton fabrics (adding 27.6 per cent). Both products were exported nearly exclusively to industrialized country markets (91.7 per cent and 94.3 per cent), the major importers in 1980 being Austria (a country that received no Peruvian exports at all in 1975) and the USA respectively. The remaining exports to LDCs nearly all went to Chile, Bolivia and Ecuador, thus showing a strong regional orientation. The yet relatively unimportant SITC-group 657 (floor coverings, tapestries etc.) reveals an almost identical regional distribution (with the USA again as the major importer).

On the other hand, the export markets of textile fabrics other than cotton (653), and - even more pronounced - special textile fabrics and related products (655), and made-up articles (656) are to be found predominantly in Latin America (89.7 per cent and 95.1 per cent). While Argentina has been an important market for exports of textile fabrics

other than cotton (24.7 per cent), the remaining subcategories were exported exclusively to Andean Pact members and Chile. The lacking dynamism of these export markets is reflected in negative (655, 656) or only slightly positive market composition effects of these products. In view of the persistent economic problems of most countries in the region and increasing competition from South-East Asian producers a rapid expansion of such exports does not appear to be probable despite Peru's advantage of geographic proximity to these markets. A re-direction of exports towards more rapidly growing markets in the developed countries would require prior efficiency increases in parts of the synthetic fibre industry. However, even if this objective were achieved, zero or even negative product composition effects in this group of products indicate that they expanded only moderately in world trade.

An important strategic factor for the stimulation of the textile industry is its direct link to clothing production. The clothing industry (841) registered a remarkable up-swing of exports in the period under consideration. 93 per cent of this export growth has to be attributed to increases of competitiveness.[1/] A look at the country distribution of exports reveals the growing importance of regional markets. Only 33.2 per cent of the increment of exports can be attributed to growing industrialized countries' imports, while 66.8 per cent of total export increase was accounted for by growing imports by other Latin American countries.

To sum up, textile and clothing production are of utmost importance in Peru today. Products using natural fibers appear to have especially good chances to keep and increase competitiveness on the world market within a short time period. Also due to their quantitative importance, these products present an exceptionally promising target for sectoral policy.

1/ As emphasized before, this does not necessarily imply a genuine increase in competitiveness at the plant level.

Policy recommendations to overcome present problems and stimulate long run growth in this sector are presented in chapter 3 (main document) and summarized here under point 3.

(b) Copper products

Copper extraction has always been of utmost importance for the Peruvian economy. This is underlined by the fact, that SITC groups 682 (processed copper) and 283 (ores and concentrates of base metals) represented more than 55 per cent of total exports. Their combined growth between 1975 and 1980 accounted for more than 48 per cent of total export increase. It was, however, below the average growth rate of exports, resulting in a decline of the share of copper exports in total exports to about 41 per cent in 1980. CMS-coefficients are divergent in product composition effects (SITC 282 (iron ore) reveals negative values while those for processed copper are slightly positive), but uniformly positive in market composition. This indicates that the lack of dynamism of these products in world trade was partly compensated by exporting to more dynamic export markets. 70.2 per cent of ores and concentrates were exported to industrialized countries, one third of which (26.1 per cent of the total) was accounted for by the USA. The most important LDC-importer was Mexico (21.4 per cent). The export coefficients of processed copper (SITC 682) show a nearly identical geographical distribution: 70.8 per cent going to industrialized countries, about 90 per cent of the remaining exports going to the more advanced developing countries. In the case of processed copper, Japan replaced the USA as the leading importer, while Brazil emerged as the major Latin American importer.

The concentration of copper exports on industrial and relatively advanced developing countries reflects that the use of copper as an input for consumer and investment goods is fairly limited for the majority of the developing countries. As producers generally have to gain experience in the local market before becoming internationally competitive[1/], Peru at

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1/ This point was first raised by Linder and later affirmed by Yamazawa for the case of Japan.

its present stage of development has neither especially promising local nor international preconditions to use processed copper for more sophisticated manufactures on a larger scale. This leads to the question whether stimulation of the first stages of copper processing really is a promising policy target for Peru. On the one hand, it can be argued that copper processing is accompanied by a weight reduction of about 65 per cent, which results in a more than 5 per cent gain on processing costs due to diminishing freight costs.[1/] In addition and more important in the long run, technical progress seems to be working towards a concentration of extraction, refinement and processing activities in one place, since new and highly efficient continuous metalcasting processes require integrated production units. On the other hand, these processes need relatively more capital and do not provide large stimuli to the economy in terms of forward linkages and employment creation.

These arguments suggest that in the long run, Peru can very well be a competitive supplier of copper at different stages of processing. As the copper sector actually is of utmost quantitative significance for Peru's export performance, a very careful evaluation of the future trends in the world copper market and its role within national development plans is necessary. If national producers keep up with the technological development in this sector, Peru should be able to defend its position as one of the world's leading producers. In this case, however, the provision of adequate investment conditions, rather than export subsidization of processed copper should be the leading principle for economic policy.

Another issue to be considered is the scope for further expansion of copper production in view of the uncertain situation on the world copper market. It has been estimated, that on the basis of the investment plans existing in 1979, Peruvian copper production will increase between 5 and 5.5 per cent yearly until 1990. Selling this increase on the world market would result in a considerable increase of Peru's world market share, even if extremely high forecasts of the

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1/ See Radetzky (1976). There is no such effect, however, if blister is transformed into refined copper.

development of world demand for copper would be realized.[1/] It might be very difficult for Peru to raise her world market share considerably, while new copper projects (e.g. Philippines and Papua New Guinea)[2/] add to world excess supply of copper. Chile, one of the world's most efficient copper producers, is also making great efforts for attaining an even stronger position on the world market.[3/] Both, a generally too conservative evaluation of the substitution potential in the energy markets stimulated by rising oil prices (which in turn affected copper-based industries) and the persisting economic down-swing in the industrialized countries, contributed to the creation of actual international excess capacities. Even if the weak growth performance of the industrialized countries can be corrected within due time to be followed by a new and lasting growth period, the (probably diminished) income elasticity for copper would reduce the scope for expansionary policies. Taking additionally into account that new integrated production units need large capital investments without providing very promising stimuli to the economy in terms of forward linkages and employment creation, a reformulation of Peruvian copper policy might be considered. Without doing harm to mineral production and export capacity, this could release considerable financial resources which might be used to reactivate sectors with a higher linkage and employment creation potential.

In summary, the size of this sector and the present situation on the copper market make the formulation of a sectoral policy package a highly important, but equally difficult task. There surely is some scope for the expansion of copper production in the medium and long run. Yet, the dramatic development on the world copper market and the increasing importance of substitutes since 1979 call for a careful evaluation of the future role of the copper sector.

1/ For these figures and other valuable comments on the mineral sector, see Dammert, Alfredo, Economia Minera, Lima 1981.

2/ With considerable transport cost advantages on the South-East Asian growth markets including Japan.

3/ See LA Regional Reports, Southern Cone, Sept. 7, 1984.

(c) Footwear

This is one of the traditional labour-intensive sectors. The outstanding growth performance of this sector (exports grew from almost zero in 1975 to US $7,897,000 in 1980), and a (slightly) positive product composition effect seem to indicate a promising potential for Peru. However, footwear exports were directed nearly exclusively to Latin American developing countries (84.1 per cent), of which Bolivia alone received about one third. Another significant importer in Latin America is Argentina, which has herself been a strong competitor in this sector. While the futured Peruvian exports to Argentina is uncertain, the very strong performance in regional and Andean Pact markets might be a sign that the sector will increasingly prove its viability on the world market. In fact, the production of footwear still contains a relatively high share of labour even in industrialized countries. Therefore, the prospects to successfully promote this branch within a programme for economic reactivation appear to be quite promising, if the industry is provided with inputs at reasonable prices.

2.3.3.2 Sectoral Policy during the Second Stage

The second generation of export sectors will have to be spread over an increasingly wide range of manufacturing branches, whereby the labour-intensive products are not any more identical with whole sectors, but rather with subsectors or even subprocesses. Again we can draw on the Tuong/Yeats classification to support this fact and to get a first idea of the probable direction, which the ongoing development process will take. The number of second group products exceeds that of the first group products by more than three times.

Although Peru has started industrial production for the international market only recently, she has already successfully exported a number of products belonging to the second generation: 657 (floor coverings), 665 (glassware), 666 (pottery), 681 (silver and platinum products), 892 (printed

matter) and 897 (gold and silver jewellery).[1/] Each of these products has been discussed in more detail in the main report.

The Peruvian experience indicates that substantial entrepreneural talent and skilled labour do exist in Peru, which allow entry into the international market with already more sophisticated products, when accompanied by export supporting policies. In addition to the six second group products which already proved to be successful export items, nearly all of the other second group products will become feasible for Peruvian firms in the medium term. A closer look at these branches reveals, that their production processes are relatively heterogeneous and that they do not exclusively rely any more on cheap and unskilled labour. Out of these, five branches seem to be specially promising, since they have gained some export experience already, although the absolute value of their exports has been relatively small: woven non-cotton fabrics (653), tin products (687), base metal household equipment (697), travel goods and handbags (831), and sporting goods (894).

It may be suggested, therefore, that the learning period necessary to switch successfully from the first to the second stage of sectoral policy can be kept relatively short in Peru, once the growth process is under way. Actual policy planning could indeed be conceptualized in such a way that the problems involved in both strategies are attacked at a time (though due attention has to be paid to the sequential character of both). The support of traditional sectors (such as textile and footwear) and new growth sectors should be accompanied by a simultaneous reformulation of the policies regarding foreign direct investment and other possibilities to transfer technology on a general basis.

1/ Actual export growth sectors in Peru as identified through CMS-analysis, which at the same time belong to the 2nd Group Products of Tuong/Yeets. SITC group 685 (lead products) is not included here because of poor growth chances (see CMS-analysis, main report), c.f. Table 11.

2.3.4 Industrial Policy and the Role of National Markets and the Andean Market Integration

It has been emphasized that a viable modern industry crucially depends on large markets, not only to achieve economies of scale, but also because a complex net of complementary industries is necessary to provide inputs and specialized services for each other. The market for end products has to have a minimum size, but the far more specialized markets for diverse inputs as well. This prerequisite for industrial growth would be met immediately, if Peru could open up to the world market without problems. Since this is not a viable option in the short and medium run, and big markets are still urgently needed today, the integration of Andean markets can be an important way to resolve this dilemma.

The experience of the 1975-80 period revealed that the provision of improved access to these markets indeed had a strong impact on export growth, and it went hand in hand with the development of a relatively diversified set of industries. Exports to the other Latin American countries show quite similar tendencies (especially in the case of Chile, but not so for Brazil!).

There appears to be little doubt therefore, that the regionalization of markets has a positive impact on exports and the national scale of production. Thus, liberalization efforts within the region should be continued to further stimulate the integration process.

However, even a wholly-integrated Andean Market cannot substitute for the world market. Rather, it will be a very helpful element on the way to economic maturation, which in addition requires the observation and exploitation of what the world market offers for developing countries. In practice, this means that there is scope for local industries to find additional markets within the Andean countries. It must be avoided though,

that integration policy is deprived of its advantages and is only perceived as a policy sustaining import substitution on a larger scale. Policies aimed at Andean market integration should strive on the one hand for a common system of trade barriers and export incentives vis-a-vis third countries (which could be oriented along the lines of national policies suggested here), and on the other hand for a relaxation of the interregional industrial planning schemes combined with a more open policy towards foreign technology.

2.3.5 A Policy Framework for Sectoral Policy

In the previous sections the importance of international markets for the development of a viable domestic industry has been stressed. Emphasis was put on the necessity to raise the productivity of local industries as quickly as possible to gain access to the world market. It is at the core of Peru's development problem, that she has to rely on the world market (imports, technology) now to stimulate national growth, while competitiveness will only be gained in later periods. This 'lag' problem has implications for the design of industrial policy.

Exports

The main Peruvian instrument for export promotion has been the so-called CERTEX system (Certificado de Reitegro Tributario), which is a tax refund system based on the price of the final product. CERTEX rates had been reduced considerably after 1980 but rose again in 1984 to a maximum of 35 per cent of F.O.B. value (Decreto 291). The export promotion scheme was successful in stimulating non-traditional exports during the 1975-80 period. Its main weakness lies in its application to the product price rather than net value added. Thus, in some cases products with a minor national value added content receive a very high effective subsidy (i.e. as a share of value added). As a consequence, further processing (i.e. adding to national value added) is relatively discriminated against. Another problem might be seen in the unconditional provision of additional CERTEX for producers outside the Greater Lima Area (Decentralizzation CERTEX), which is partly subsidizing those productions which for various reasons have to be located outside the Metropolitan area anyway.

However, the restructuring of the whole system to a value added basis may not be advisable now. A new scheme based on value added data is more complicated as it would not only need to consider the value added generated by the producer of the final export goods, but also the domestic value added generated by other producers in the backward-processing chains. In addition, in the short term it would have adverse effects on those industries which built upon the present scheme during the last decade. To avoid further turbulences in the given incentive scheme CERTEX should not be changed except for a conditioning of decentralization CERTEX and the introduction of a minimum value added content (e.g. 20 per cent). These measures would not have any negative side-effects, but they would effectively hinder the exploitation of subsidies by those industries with a very low degree of processing and diminish the bias against further processing implicit in the system. In the medium and long term, however, it is advisable to shift the system of export incentives from direct export subsidization towards more indirect incentives, which would increase the efficiency and thus the international competitiveness of exporters. Measures of this kind are widely applied by the industrial countries and are generally considered to confirm with GATT standards (these issues will be dealt with in more detail in chapter 3.3.2).

Imports

Restructuring imports to provide the scope for national industrial growth is a far more complicated task than subsidizing exports. One of the initial issues of import substitution policies is that the protection of national markets effectively discriminates against those producers, who use protected inputs in export production. One possiblity to solve this problem is the implementation of draw-back schemes, which enable exporters to purchase inputs for the production of export goods at world market prices. As opposed to the direct subsidization of exports, a greater reliance on draw-back schemes would reduce the risk of countervailing actions being taken by importing countries.

The actual system of export promotion in Peru gives to exporting companies the option to either benefit from the full CERTEX incentive on the sales price of the export good, but having to pay the full import tariff on intermediate inputs, or to benefit from the draw-back scheme for imported inputs, but receiving the CERTEX incentive on the domestic value added component of the export good only. Peruvian exporters largely give preference to the first alternative, and indicated in interviews conducted during the field mission, that complicated and time consuming administrative procedures made the draw-back-schemes in terms of a reduced risk of foreign countervailing actions it is recommended to look into possibilities to reduce these problems and thus to make the draw-back option more attractive to exporters.

Technology Transfer

Technology policy (as discussed in detail before) should aim at exploiting superior foreign technology to Peru's own advantage. This task cannot be mastered without intensive contacts and co-operations with Trans-National Enterprises (TNE's) and industrialized and newly industrializing countries, which will try to bargain for a maximum share of incremental income for themselves. It is, however, exactly the intensified link of foreign technology and favourable local conditions for production, which will create additional sources of income in almost any case, so that each party should end up in a better position than before. Once a set of rules is established that allows a minimum participation in the growth

process for all parties involved, the most serious obstacle to further co-operation is eliminated. The design of policies aiming at the provision of reliable and co-operative conditions for foreign enterprises, licence holders and investors should be among the first steps formulating sectoral (and general) economic policy. As a general rule it may be suggested, that necessary obligations imposed on foreign economic agents can be the more in favour of Peru, the more reliable they are. This does not exclude that the rules for new foreign enterprises can be hardened, once a sustained growth path is obtained and the local market gains importance for foreigners, as for example in the case of Brazil.

IV. The Textile Industry

3.1 Structure, Performance, and Characteristics of the Textile Industry

The textile complex includes the production of yarns on the basis of man-made and natural fibres, of knitted and woven fabrics, of made-up textile products (all of these are incorporated in ISIC-321) as well as of apparel (ISIC-322).

Spinning and weaving are the most important subsectors accounting for 52 per cent of employment and 63 per cent of gross output of the textile complex (see Table 12). It is noteworthy that the average size of a mill (measured as number of employees/enterprise) is rather small - 78 employees in 1979, notwithstanding the fact that some companies are substantially larger. The garment industry is mainly a small-scale industry with an average size of 18 employees per factory in 1979.

The production of textiles (ISIC-321) exhibited a varying performance during most of the seventies (see Table 13). After the peak production in 1979, however, it has been declining in absolute terms. Spinning and weaving (ISIC-3211) registered strong growth in the second half of the 1970's, whereas knitting (ISIC-3213) as well as apparel production (ISIC-322) drastically declined between 1975 and 1979. However, the decline in output of officially registered companies went hand in hand with an increase of garment production in the informal sector. Apparent consumption of all textile articles (yarn, fabrics, and garments) declined from 4.4 kg per capita in 1975 to 3.2 kg per capita in 1981 (see Table 14).

T A B L E 12

PERU - TEXTILE

Industry Structure (1979)

Subsector	Code (ISIC)	Number of Enterprises	Employment	Output (Billion soles)	Value Added (Billion soles)
Yarns	3211	320	25,136/(52.0%)	129.3 (62.5%)	56.7 (66.6%)
Made ups	3212	55	1,488 (3.1%)	4.5 (2.2%)	2.1 (2.5%)
Knitted Fabrics	3213	343	6,233 (12.9%)	37.3 (18.0%)	13.4 (15.8%)
Rugs, etc.	3214	12	332 (0.7%)	1.9 (0.9%)	0.4 (0.5%)
Cords	3215	15	310 (0.6%)	2.6 (12.%)	0.9 (1.0%)
Others	3219	18	306 (0.6%)	1.2 (0.6%)	0.5 (0.5%)
Garments	3220	802	14,504 (30.0%)	30.2 (14.6%)	11.2 (13.1%)
TOTAL			48,309 (100%)	207.0 (100%)	85.2 (100%)

Source: World Bank (1982: Table 2).

T A B L E 13

INDEX OF REAL OUTPUT IN THE TEXTILE INDUSTRY

(1973 = 100)

Year/ISIC	321	322	3211	3213
1970	88.7	78.4	84.5	101.7
1971	101.5	90.1	98.7	105.2
1972	98.5	101.1	95.9	107.7
1973	100.0	100.0	100.0	100.0
1974	101.4	111.7	102.3	98.3
1975	103.5	110.8	101.8	105.4
1976	110.3	102.5	113.3	96.5
1977	97.8	92.2	103.2	75.8
1978	106.4	73.4	117.5	59.6
1979	113.4	68.2	125.4	61.2
1980	108.0	N.A.	N.A.	N.A.
1981	107.9	N.A.	N.A.	N.A.
1982	100.2	N.A.	N.A.	N.A.
1983	87.7	N.A.	N.A.	N.A.

N.A. not Available

Source: Abugattas and Zamalloa (1982)

TABLE 14

Apparent Consumption of Textile Fibers
(Thousand Metric Tons)[1/]

	1973	1974	1975	1976	1977	1978	1979	1981
Cotton								
Yarn Production	31.1	32.0	35.1	37.0	42.4	46.4	51.7	47.8
Export[2]	(1.3)	(3.2)	(0.9)	(2.4)	(10.0)	(15.5)	(18.1)	(33.0)
Import[2]	—	—	0.3	0.3	—	—	—	—
Apparent Consumption	29.8	28.8	34.5	34.8	32.4	30.1	33.6	24.6
Synthetic & Artificial Fibers								
Production	15.4	19.2	21.1	27.1	24.8	26.1	29.1	32.0
Export[3]	(2.3)	(2.3)	(1.2)	(5.2)	(8.4)	(10.7)	(10.4)	(10.3)
Import[3]	7.7	3.6	3.5	2.4	2.4	2.4	—	3.7
Apparent Mill Consumption	20.8	20.5	23.4	24.3	19.2	17.7	18.7	25
Wool & Alpaca								
Production	4.8	5.2	5.2	6.6	6.5	6.7	6.7	6.8
Export[4]	(2.6)	(1.6)	(1.5)	(2.1)	(2.3)	(2.4)	(2.5)	(2.6)
Import[4]	—	—	0.8	—	—	—	—	—
Apparent Consumption	2.2	3.6	4.5	4.5	4.2	4.3	4.2	4.2
Garments								
Export	—	—	—	—	—	(0.2)	(0.4)	(1.5)
Import	0.1	0.1	0.1	0.1	0.1	—	—	2.0
Other Exports	(2.0)	(2.5)	(1.6)	(2.0)	(2.2)	(2.4)	(2.6)	(3.1)
Other Imports	1.3	2.2	8.0	3.8	0.7	0.6	3.8	4.5
Total Apparent Consumption	51.2	52.7	68.9	64.5	54.4	50.3	57.5	57.
Population[5]	14.9	15.3	15.7	16.1	16.5	16.9	17.3	18.0
Apparent Consumption 6/7/	3.4	3.4	4.4	4.0	3.3	3.0	3.3	3.2

1/ Excluding jute and hard fibers
2/ Yarn and fabrics
3/ Staple and continuous filament
4/ Tops, yarn and fabrics
5/ Million
6/ Kg/capita
7/ 1977, 1978 and 1979 data for wool products and garments partially estimated

Source: World Bank (1982: Table 6B).

TABLE 15

RECENT CHANGES IN IMPORT DUTIES FOR TEXTILE ITEMS

Item \ Effective Date	Jan. 1980	Mid 1980	Sept. 1980	Jan. 1982
Textile fibres	60 + 10*	55	40	46
Yarn	70 + 10*	70	60**	69
Filament Yarn	—	—	40	46
Fabrics	100 + 10*	90	60	69
Garments	120+10*+20^{x} =150	100 + 20^{x}	60	69

* Additional Tax

** Except Filament Yarn and Polyester

x Surcharge for Piece Goods

IMPORT DUTIES FOR TEXTILE MACHINERY

Item \ Effective Date	September 1980	January 1982
Spinning Frames	10	11.5
Looms	15	17.25
Warp Knitting - For Domestic Use	55	63.25
Warp Knitting - For Other Use	25	28.75
Circular Knitting for Domestic Use	25	28.75
Circular Knitting for Other Use	15	17.25
Auxiliary Equipment	15	17.25

Source: MITI

Tariffs for textile products were reduced substantially between 1980 and 1982 (see Table 15). Tariffs of yarns, fabrics and garments were all equal to 69 per cent, while import duties on filament yarn were lower. Comparing the protective structure for Peruvian textiles with that of 20 other developing countries (see Table 16), the average tariff level was not too different from that of most of the other countries, though substantially higher than that of the Republic of Korea. With respect to non-tariff protective measures on the other hand (surcharges, licenses, quotas, etc.), Peru figured prominently among the countries with the most unrestricted import structure (see Table 17). In contrast to the majority of the developing countries, Peru had prohibitions only on cotton imports. This picture changed though at the end of 1984 with decree No. 24.030 which prohibits the import of specified commoditis including many textile products.

Textile exports grew rapidly between 1975 and 1980 (see Table 9), thus counteracting the decline in domestic demand. They stagnated in 1981, grew by 21.6 per cent in 1982, declined by 34 per cent in 1983; but recuperated again in 1984. Table 18 shows a breakdown of textile exports by major categories. Although there exists some doubt about the accuracy of these figures, it is clear that the overwhelming part of textile exports (approx. 80 per cent) consists of cotton yarn and fabrics. More than 75 per cent of cotton fabrics are exported to the USA and around 15 per cent to the EEC. With respect to exports of cotton yarns the share of the EEC has declined in recent years, while that of the USA has increased (see Tables 19 and 20). Exports of cotton yarns to the USA increased by 411 per cent in 1981 and by 67 per cent in 1982, and the respective growth rates for cotton fabrics were 26.6 per cent and 40 per cent. While Peru's share in total US textile imports is very small (1.5 per cent in 1980), it is much larger for cotton fabrics and yarns, 6.4 per cent and 4.7 per cent, respectively, in 1980 (see table 21).

Although it is true, that in the early 1980s exports of cotton textiles were adversely affected by exchange rate variations against European currencies and by protectionist actions in the USA in 1983, there are strong indications, that the decline of demand for national products has partly to be attributed to rising contraband and - possibly - to end-of-season dumping by foreign suppliers. However, the most important reason for the weak performance of the Peruvian textile industry is the low competitiveness (with

TABLE 16

[illegible] IN THE TEXTILE SECTOR IN DEVELOPING COUNTRIES IN THE EARLY 1980s[a]

(Percentages)

Markets (date of tariff)	[illegible]	FIBRES					YARNS					FABRICS					MADE-UP ARTICLES			CLOTHING
		All	Wool	Cotton	Non-Textile	Other	All	Wool	Cotton	Non-Textile	Other	All	Wool	Cotton	Non-Textile	Other	All	Industrial	Other	
Argentina (1982)	[illegible]	[illegible]	25	20	27	26	[illegible]	28	28	33	26	[illegible]	27	26	28	28	[illegible]	25	26	[illegible]
Brazil (1981)	[illegible]	[illegible]	23	25	25	31	[illegible]	55	65	54	68	[illegible]	105	105	107	95	[illegible]	69	102	[illegible]
Colombia (1982)	[illegible]	[illegible]	27	19	27	[illegible]	[illegible]	64	64	43	80	[illegible]	90	74	62	92	[illegible]	60	92	[illegible]
Egypt (1982)	[illegible]	[illegible]	10	0	20	[illegible]	[illegible]	60	61	64	67	[illegible]	123	123	107	110	[illegible]	61	120	[illegible]
India (1981)	[illegible]	[illegible]	60	[illegible]	25	[illegible]	[illegible]	[illegible]	60	100	71	[illegible]	105	71	107	107	[illegible]	91	[illegible]	[illegible]
Israel (1982)	[illegible]	[illegible]	2	0	[illegible]	[illegible]	[illegible]	9	10	12	0	[illegible]	16	16	13	13	[illegible]	13	14	[illegible]
Korea, Rep. of (1982)	[illegible]	17	12	20	24	0	20	20	20	20	20	[illegible]	30	30	44	30	[illegible]	41	30	[illegible]
Malaysia (1981)	[illegible]	0	0	0	0	0	[illegible]	6	[illegible]	11	4	[illegible]	28	33	32	28	[illegible]	23	32	[illegible]
Mexico (1983)	[illegible]	9	9	9	26	[illegible]	[illegible]	20	20	28	14	[illegible]	43	32	35	43	[illegible]	33	33	[illegible]
Morocco (1982)	[illegible]	23	32	22	[illegible]	[illegible]	[illegible]	41	41	31	66	[illegible]	[illegible]	[illegible]	111	[illegible]	[illegible]	67	[illegible]	[illegible]
Nigeria (1982)	[illegible]	[illegible]	21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pakistan (1981)	[illegible]	31	45	..	32	[illegible]	[illegible]	52	53	[illegible]	69	[illegible]	101	91	117	127	[illegible]	97	111	[illegible]
Peru (1982)	[illegible]	37	31	38	38	[illegible]	[illegible]	60	60	51	58	[illegible]	60	60	58	58	[illegible]	53	58	[illegible]
Philippines (1982)	[illegible]	20	13	23	21	[illegible]	[illegible]	30	32	31	33	[illegible]	48	36	35	48	[illegible]	38	49	[illegible]
Singapore (1981)	[illegible]	0	0	0	0	0	[illegible]	0	0	0	0	[illegible]	0	0	0	0	[illegible]	0	0	[illegible]
Spain (1983)	[illegible]	[illegible]	9	13	16	[illegible]	[illegible]	19	24	19	[illegible]	[illegible]	28	22	34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sri Lanka (1982)	[illegible]	[illegible]	35	6	9	[illegible]	[illegible]	35	37	22	68	[illegible]	68	37	24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Taiwan (1981)	[illegible]	[illegible]	21	[illegible]	[illegible]	21	[illegible]	51	21	[illegible]	47	[illegible]	61	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thailand (1981)	[illegible]	[illegible]	20	..	[illegible]	23	[illegible]	20	[illegible]	[illegible]	23	[illegible]	80	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tunisia (1981)	[illegible]	[illegible]	11	2	0	8	[illegible]	18	19	6	5	[illegible]	39	34	41	37	[illegible]	38	83	[illegible]
Yugoslavia (1983)	[illegible]	[illegible]	3	1	23	5	[illegible]	8	11	14	10	[illegible]	19	18	18	18	[illegible]	14	20	[illegible]

[a] Estimates.

[b] Unweighted averages of ad valorem duties, as per the latest available tariff schedule. A definition of the product classification used can be found in the Technical Notes.

[c] Mainly products for industrial use: BTN Nos. 56.05-07,09,10; 59.01-04,10,12,14-17.

[d] The tariff rate on old clothing (BTN No. 63.01), which is variable, has not been included in calculating this average.

[e] In addition to the ad valorem rates averaged, there are specific duties (not ascertained) levels on 2/12 tariff lines for other fibres, 3/3 for man-made yarns, 3/17 for other yarns, and 2/18 for other fabrics, in India; and on 5/13 tariff lines for man-made fibres, 5/10 for wool yarn, 7/39 for man-made yarn, 2/10 for man-made fabrics, 7/51 for industrial make-up articles, 5/20 for other make-up articles, and 31/53 for clothing, in Israel.

[f] When the yield is higher, the ad valorem duties averaged here are replaced by specific duties (not ascertained): on 2/9 tariff lines for wool fibre, 11/39 for man-made yarn, 3/11 for other yarns, 2/3 for wool fabrics, 2/6 for cotton fabrics, 2/10 man-made fabrics, 10/34 for other fabrics, 14/51 for industrial make-up articles, and 3/59 for clothing, in Israel; on 1/3 tariff lines for man-made fibres, 2/12 for other fibres, 6/6 for cotton yarn, 10/11 for man-made yarns, 2/9 for other yarns, 2/2 for wool fabrics, 6/6 for cotton fabrics, 2/6 for man-made fabrics, 11/19 for other fabrics, 12/14 for industrial make-up articles, 3/12 for other make-up articles, and 12/12 for clothing, in Nigeria; on 1/16 for other fibres, 6/20 for other fabrics, 6/26 for industrial make-up articles, 26/32 for other make-up articles, and 91/95 for clothing, in Sri Lanka; on 4/16 tariff lines for cotton yarn, 3/11 for man-made yarn, 13/71 for other yarns, 3/91 for industrial make-up articles, and 2/49 other make-up articles, in Taiwan; and on 4/6 tariff lines for man-made fibres, 2/2 for cotton yarn, 2/5 for man-made yarns, 3/3 for cotton fabrics, 2/2 for man-made fabrics, 4/12 for other fabrics, 3/19 for industrial make-up articles, 6/8 for other make-up articles, and 11/23 for clothing, in Thailand.

[g] Only tariffs in those lines subject to ad valorem rates have been averaged here, without considering the lines subject to specific duties. Specific duties are applicable: to 3/11 tariff lines for man-made fibres, 1/3 for cotton yarn, 1/20 for man-made yarn, 1/10 for man-made fabrics, 6/34 for other fabrics, 2/55 for clothing, in Israel; to 10/14 tariff lines for cotton yarn, and 8/13 for man-made yarn, in Malaysia; to 3/5 tariff lines for wool fibres, 4/5 for man-made fibres, 1/6 for cotton fabrics, 2/6 for man-made fabrics, 1/19 for other fabrics, 2/34 for industrial make-up articles, and 3/11 for other make-up articles, in Nigeria; to 1/10 tariff lines for wool fibre, 4/16 for wool yarn, 60/61 for man-made fibres and 3/16 for other yarns, in Pakistan; and to 1/34 tariff lines for other fibres, 1/31 for other yarns, 4/59 for other fabrics, and 11/54 for industrial make-up articles, in Spain.

[h] Specific duties are levied on top of the ad valorem rates averaged, which are also replaced by other specific duties when the yield is higher: on 3/4 tariff lines for other fabrics, and 1/51 for industrial make-up articles, in Israel.

[i] Tariff rates have not been included, due to lack of unrelated information, on the whole BTN chapter 63 for Morocco's other fibres, and on 2/17 tariff lines of Nigeria's other make-up articles.

[j] An ad valorem duty is applicable: to man-made fibres (17 tariff lines) in Pakistan, and to cotton fibre (6 tariff lines) in Thailand.

[k] Duties on sacks and bags (BTN No 62.03), which are either specific or variable, have not been included.

Source: CATT (1984: 126).

TABLE 17

NON-TARIFF MEASURES ON IMPORTS OF TEXTILES AND CLOTHING REPORTED BY 23 DEVELOPING MARKETS (END-1983 OR NEAREST DATE)[a]

(Number of BTN 6-digit positions affected)

	Type of NTM	FIBRES				YARNS				FABRICS				MADE-UPS		CLOTHING[c]
		Wool [3]	Cotton [6]	Man-made [4]	Other [11]	Wool [3]	Cotton [2]	Man-made [3]	Other [6]	Wool [2]	Cotton [3]	Man-made [2]	Other [12]	Industrial [17]	Other [8]	[15]
Argentina	L	.	.	.	.	1	1	2	.	2	3	1+(1)	3+(1)	8	8	15
Brazil	S	3+(1)	.	.	1+(4)	3	2	3	3+(1)	2	3	1+(1)	9+(1)	16+(1)	8	15
	LS	3	6	6	10	3	2	3+(2)	6+(2)	2	3	1+(1)	12	13+(3)	7+(1)	15
Colombia	L	3	6	6	11	3	2	3	8	2	3	2	12	17	8	15
Hong Kong		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
India	L	1	.	3+(2)	.	.	2	(3)	.	.	.	.	.	.	.	.
	ST	.	.	(2)	.	.	.	(3)	.	.	.	.	.	.	.	.
	Q	2	.	(2)	.	3	.	(3)	.	1	3	2	3	3	8	15
Israel	L	.	.	(3)	.	(6)	1	(2)	.	1	1	2	1	1	.	.
Korea, Rep.	S	.	.	(3)	(2)	.	.	(2)	1+(1)	(2)	.	.	1+(3)	(1)	1+(2)	3+(2)
Macao		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Malaysia		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mexico	L	1	.	1	1+(1)	3	2	2+(1)	.	1	3	1+(1)	1+(4)	1+(11)	5+(3)	8+(2)
Nigeria	L	.	.	.	4	.	2	3	.	.	.	.	.	(1)	1+(3)	2
	P	.	.	.	.	.	.	.	.	2	3	2	11+(1)	7+(3)	6+(1)	6+(1)
Pakistan	L	3	6	3	9+(2)	3	2	(3)	7+(1)	(1)	(1)	(2)	(3)	3+(7)	(2)	(2)
	P	.	.	1	(2)	.	.	(3)	(1)	1+(1)	2+(1)	(2)	7+(3)	3+(7)	6+(2)	13+(2)
Peru	P	.	6	.	.	.	.	.	.	.	.	.	.	.	.	.
Philippines	LS	.	.	.	.	.	.	.	.	2	3+(1)	2	7	.	.	.
	P	.	1	.	2	.	.	.	.	.	.	.	.	(1)	9+(1)	14
Portugal	S	1	1	1+(2)	2	3	1	3+(2)	3+(2)	2	3	2	12	16+(1)	7+(1)	14+(1)
Singapore		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Spain	L	.	.	.	(1)	.	.	.	.	.	.	.	.	.	.	.
	ST	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.
	Q	.	1	.	3+(1)	.	2	2	5	.	3	2	8+(2)	6+(7)	7+(1)	10+(3)
Sri Lanka	L	.	.	.	2	.	2	.	1	2	3	2	7	.	.	1
Thailand	L	.	.	.	1	.	.	.	1	.	.	.	1	.	(1)	.
Tunisia	L	2+(1)	2	2	9	.	.	1	3+(1)	.	.	.	2	4+(2)	.	.
	Q	.	.	.	1	.	.	.	.	1	2	2	3	.	1	12
	P	2+(1)	2	2	1	3	2	4	2+(1)	1	1	.	3	11+(2)	7	3
Turkey	L	1	.	.	.	.	.	2	.	.	1	(1)	.	3+(4)	.	.
	P	4	6	6	11	3	2	3	8	2	2	1+(1)	12	10+(4)	8	15
Yugoslavia	Q	.	.	(1)	.	1	.	1	.	1	3	1+(1)	(3)	(2)	4+(1)	(3)

[a] This table shows, for each heading (wool fibres, cotton fibres, and so on), the number of BTN 6-digit positions which are affected by one or another type of NTM (those only partly affected are shown between brackets). The total number of BTN 6-digit positions within each heading is indicated between [ ]; the exact content of the headings can be found in the Technical Notes.

[b] S = Surcharge; L = Licensing (any); ST = State trading; Q = Quota; LS = Licences/permits suspended; P = Prohibition; R = Restriction (type unknown).

[c] Including headgear and parts thereof (BTN Chapter 65).

Source: GATT (1984: 128).

TABLE 18

PERU - TEXTILE SECTOR

Breakdown of Exports by Major Categories (1980)

(Metric Tons)

Wool products[1]	8,731
Cotton yarn and fabrics	85,141
Synthetic yarn and fabrics	2,283
Synthetic Fibers	8,332
Jute	759
Carpets and rugs	780
Knitwear (cotton)	506
Knitwear (other)	1,771
Garments	663
Other textile articles (cotton)	1,056
Other textile articles (other)	493
TOTAL	108,921
of which cotton articles	86,703

1/ Including alpaca

Source: World Bank (1982: Table 18).

T A B L E 19

EXPORTS OF COTTON YARNS BY DESTINATION; 1980-1982

(US $ FOB and %)

	1980	%	1981	%	1982	%
CEE	19,535,001	53%	14,170,608	68%	19,610,000	37%
Alemania	9,341,896	--	6,402,758	--	7,534,735	--
Italy	5,054,439	--	2,885,549	--	8,285,910	--
USA	1,054,439	4%	7,693,014	--	13,300,614	--
Canada	95,136	--	7,693,014	20%	13,300,614	25%
Sweden	3,493,733	10%	3,893,132	10%	4,150,206	8%
Austria	1,925,229	5%	1,922,685	5%	1,268,394	2%
Switzerland	3,888,417	11%	2,192,345	6%	1,223,547	2%
Others	6,231,821	17%	9,305,098	24%	10,600,000	20%
TOTAL	36,673,597	100%	37,539,354	100%	53,433,437	100%

Source: FOPEX

T A B L E 20

EXPORTS OF COTTON FABRICS BY DESTINATION, 1980-1982

(US $ FOB and %)

	1980	%	1981	%	1982	%
USA	32,528,096	77	41,166,024	79	57,988,000	76
CEE	7,075,547	17	4,672,067	91	11,763,764	16
GERMANY	1,114,324	3	907,684	2	3,245,200	4
ITALY	3,972,082	9	2,659,795	5	5,836,800	8
FRANCE	569,698	1	525,728	1	1,503,764	2
BENELUX	150,654	3	—	-	53,200	-
LOWER COUNTRIES	922,263	3	304,444	-	608,000	-
U.K.	264,254	-	262,291	-	516,800	-
IRELAND	--	-	—	-	--	-
DENMARK	82,272	-	12,125	-	--	-
OTHERS	2,474,839	6	6,346,880	12	6,049,600	8
TOTAL	42,078,482	100%	52,124,971	100%	75,801,364	100%

Source: FOPEX

TABLE 21

SHARE OF WORLD TEXTILE MARKET SELECTED LDC's IN TEXTILE IMPORTS OF US; EEC, AND JAPAN

I. Total Textile Imports

	EEC		US		JAPAN	
LDC Exp.	1973	1980	1973	1980	1973	1980
India	4.0	4.8	4.3	5.3	2.2	0.9
Hong Kong	3.8	2.1	6.5	5.3	3.1	0.3
South Korea	1.2	2.1	1.5	5.1	14.6	22.7
Brazil	3.2	3.1	1.9	3.9	0.9	0.5
Colombia	0.7	0.6	0.8	1.0	0.3	—
P.R. China	2.3	3.9	0.7	6.0	7.8	15.9
PERU	--- 0.04	0.5	0.08	1.54	0.05	0.013

II. Imports of Cotton Fabrics

	EEC		US		JAPAN	
LDC Exp.	1973	1980	1973	1980	1973	1980
India	10.9	7.0	10.7	7.6	6.4	2.9
Hong Kong	8.7	4.6	21.1	17.6	5.0	0.2
South Korea	1.2	2.4	1.6	6.2	11.6	8.6
Brazil	5.1	3.5	2.9	1.0	1.8	0.01
Colombia	0.9	1.1	2.3	2.8	0.8	—
P.R. China	5.8	7.1	2.3	10.3	17.6	39.9
PERU	0.07	0.4	0.26	6.4	0.08	0.009

III. Imports of Cotton Yarns

	EEC		US		JAPAN	
LDC Exp.	1973	1980	1973	1980	1973	1980
India	1.9	0.9	—	—	0.7	0.01
Hong Kong	1.9	0.2	0.01	0.01	1.1	0.01
South Korea	0.1	0.2	0.2	1.7	22.7	77.2
Brazil	13.2	10.5	25.0	0.4	0.4	1.9
Colombia	3.8	2.7	10.0	0.2	0.1	—
P.R. China	0.4	0.9	--	0.2	4.7	2.8
PERU	0.03	1.5	0.14	4.7	0.04	0.4

Source: Paus (1984).

the exception of cotton sheeting and drill). Hence it is cost competitiveness and (in the short run) contraband that are the primary problems to be solved.

Another important problem is to be mentioned. The drastic decline in textile exports from US $281 million in 1982 to US $186 million in 1983 has in part been the result of the reduced internal cotton supply due to the weather conditions in the cotton growing areas. The textile industry was not allowed to make up for the shortfall of an estimated 20,000 tons of nationally produced cotton through imports with the reasoning that the import of cotton would or could have led to an infection of Peruvian cotton cultivations by the "Gusano Rosado" (Red Worm). However, cotton could have been fumigated prior to importation or it could have been processed as far as carding and then imported.[1/] Clearly, natural disasters (droughts and flooding) in the cotton sector should not be allowed to spill over into man-made damage for the textile industry.

For the last two years lack of liquidity has been an aggravating factor for textile producers selling on the internal or international market. The decline in production, tight monetary policy, and large investments (in some companies) have resulted in a shortage of working capital, financial losses, and foreign debt.

3.2 Productivity, Technology, and Cost Structure

3.2.1 Competitiveness

According to a comparative study of the textile industry in Peru, the Republic of Korea, the Province of Taiwan, Hong Kong and Brazil, prepared in

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1/ It has to be noted that the zone of Piura is already infected with a plague of "Gusano Rosado" and that its arrival cannot be attributed to the importation of raw cotton. This pest can be carried on vegetable seeds and it is thought that the larvae have arrived in Peru in this way. Since the 'Gusano Rosado' is spreading rapidly, it is very important that prompt measures are taken to stop furtner expansion of the plague and eventually eliminate it. .
There has also been a sharp increase in the contamination of Peruvian cotton attributable to farmers re-using their fertilizer bags when gathering the cotton and to the type of plastic material used for the baling of the cotton.

TABLE 22

COST COMPARISON* OF TEXTILE PRODUCTS

Products, Material	Peru	Brazil	Hong Kong	Taiwan	South Korea
Print cloth, cotton	71.9	72.5	45.1	44.3	45.8
Sheeting, cotton	120.0	148.2	126.2	123.1	126.9
Sheeting, Poly-cotton	177.0	191.1	109.8	105.3	108.9
Poplin, Cotton	95.3	121.9	74.7	72.4	74.2
Poplin, Poly-cotton	109.1	117.4	57.0	54.6	55.7
Drill, cotton	155.4	293.3	157.8	153.1	156.8

* All costs are quoted in US cents per linear meter. The data refer to Nov./Dec. 1980. The particular specifications for each product are the same for all countries considered.

Source: Werner International (May 1981).

1981 by Werner International, the production costs in Peru are on average higher than costs of the East Asian producers, but lower than in Brazil (Table 22).

In particular:

- Peru has higher input prices primarily due to the use of high quality cotton grown in the country. While it is true, that Tanguis and Pima are qualities which found a comparative advantage for Peruvian cotton producers on the world market, using the more expensive long-staple in the production of fabrics for which the cheaper short-staple variety would do, turns the comparative advantage into a comparative disadvantage. In addition, among Third World producers, the Province of Taiwan and the Republic of Korea are the largest producers of synthetic fibres, and their prices are substantially lower than in Peru or even the industrialized countries.[1/]

- In Peru, nominal wages per man-year including fringe benefits per work hour (adjusted for fewer work weeks per year and work hours per week) are higher than in any of the four producers. In addition, none of the other producers have anything comparable to the Peruvian Labour Stability Law, which - by making parts of the wage bill a fixed rather than a variable cost - results in excessive labour costs in times of economic recession.

- Peruvian productivity in spinning and weaving is the lowest when compared to the East Asian countries, the EEC, and the USA (see Table 23)[2/], which when coupled with the higher wages (in comparison with the other

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1/ According to Werner International (1981:17) the price of a kg. of polyester (1.5 d., 38 mm) in Dec. 1980 was $ 2.84 in Peru, $ 2.76 in Brazil, $ 1.50 in Hong Kong, $ 1.47 in Taiwan, and $ 1.45 in South Korea.

2/ It is important to note though, that there is a wide distribution in the productrivity performance of Peruvian companies. Productivity in spinning in 1981 for example (measured as kg of yarn produced per operator/hour adjusted to 20 Ne yarn count) was 6.6 for FCA Textil El Amazonas, 10.5 for Textil piura, 4.5 for La Union, 7.0 for Parcela, 4.5 for Nuevo Mundo, and 6.0 for the sample in the Werner International Study (see World Bank (1982: Table 40)).

TABLE 23

TEXTILE PRODUCTIVITY IN SPINNING AND WEAVING

Country	Spinning[1] Kg/Op/Hr Ne 20	Weaving[2] Km of Weft/Op/Hr
Peru	6.0	35.8
Brazil	8.2	31.2
Hong Kong	10.4	68.5
Taiwan	9.4	61.8
South Korea	9.1	60.8
EEC	16.5	120.0
USA	23.6	183.0

Labor Cost

Country	Wages[3] U.S. Dollars	Per Kg of Yarn[4]	Per Km of Weft
Peru	2.18	0.36	0.061
Brazil	1.62	0.20	0.052
Hong Kong	1.64	0.16	0.024
Taiwan	1.34	0.14	0.022
South Korea	1.15	0.13	0.019
EEC	7.70	0.47	0.062
USA	6.37	0.27	0.035

1/ Kg. of yarn produced per man-hour adjusted to 20 Ne yarn count.
2/ Km of weft inserted per man-hour.
3/ 1980 in US dollars.
4/ In US dollars.

Source: Cherzi Textil and Werner International, Consultants.
Ne 20 = 20 Hanks of Skeins of a single yarn each 840 yds. long to weigh 1 lb.
Kg/OP/HR Ne 20 = Kilograms/Operator/Hour based on 20/1 Ne.
Km/WFT/OP/HR = Kilometres of yarn put into fabric (across the fabric) per Op/Hr.

developing countries cited) results in unit labour costs higher than in any of the other countries, except for the EEC. Productivity (measured as real value added per worker) in the textile and clothing industries grew at an average annual rate of 1.9 per cent between 1971-75, -7.7 per cent between 1975-79, and -.6 per cent between 1979-81 (see Table 3).

- Financial costs in the East Asian countries are generally lower than in Peru.

3.2.2 Technological Developments

Internationally, recent technological developments in textile and clothing industries have mainly resulted in material and process innovations. One of the main economic facts has been the decline in relative prices of synthetic fibres (which took place despite the two-fold increase in energy prices in the 1970's).1/

Natural fibres (wool and cotton) have not completely given way to man-made fibres, though. While cotton has lost in relative importance in home furnishing and industrial uses, it has maintained its share in clothing (see Table 24). Given the increased preference in the industrialized countries for 'nature-based' products in recent years, it is likely that cotton will remain an important input for clothing and therefore will remain an important commodity for Peru.

The technological change that the textile industry worldwide has witnessed during the last two decades has mainly been of an embodied nature. This is true for all elements of the production process from spinning to weaving to finishing.

The changes in technology are principally aimed at higher speeds and the integration of single steps into a multiple process, and they go hand in hand

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1/ The ratio of the price of a kg of cotton versus a kg of polyester has increased from 0.23 in 1960 to 1.07 in 1972 to 1.34 in 1978. Subsequently it declined again to 1.0 in 1981. See GATT (1984: Appendix: 37).

TABLE 24

FIBRE CONSUMPTION IN THE MAIN END-USES

(Based on weight - %)

A. EEC[a]

Main end-uses	Man-made fibre[c]					of which: Synthetic fibre					Cotton					Wool				
	1971	1973	1979	1980	1981	1971	1973	1979	1980	1981	1971	1973	1979	1980	1981	1971	1973	1979	1980	1981
Clothing	58	62	59	55	57	42	48	50	44	47	24	22	25	27	25	18	16	16	18	18
Home furnishing																				
Carpets	71	79	81	80	81	56	69	78	78	79	5	3	1	2	2	24	19	18	18	17
Others	43	52	54	53	53	23	28	36	36	36	51	44	41	41	41	6	4	5	6	6
Industrial uses																				
Tyres	95	94	98	98	98	19	21	27	31	30	5	6	2	2	2	-	-	-	-	-
Others[b]	50	55	65	67	71	21	34	40	42	44	47	42	32	31	27	3	2	3	2	2

B. UNITED STATES

Main end-uses	Man-made fibre[c]					of which: Synthetic fibre[d]					Cotton					Wool				
	1971	1973	1979	1980	1981	1971	1973	1979	1980	1981	1971	1973	1979	1980	1981	1971	1973	1979	1980	1981
Clothing	56	64	63	62	62	43	53	55	56	55	41	33	34	35	35	3	3	3	3	3
Home furnishing																				
Carpets	98	99	99	99	99	85	94	99	99	99	5	3	1	1	1	5	2	0	0	0
Others	37	44	53	53	54	19	28	42	43	45	63	55	46	46	45	0	1	1	1	1
Industrial uses																				
Tyres	100	100	99	99	99	80	87	96	93	94	0	0	1	1	1	-	-	-	-	-
Others[b]	55	63	77	77	80	22	36	65	64	69	44	37	23	23	20	1	0	0	0	0

[a] Excluding Denmark, Ireland and Greece.

[b] Including acetate tow used in cigarette filters, except for United States from 1977.

[c] Consists of synthetic (non-cellulosic) fibre and cellulosic fibre.

[d] Includes film and fibrillated polypropylene from 1978.

Source: GATT (1984: Appendix: 38)

with the advance of man-made fibres vis-a-vis natural fibres and the relative increase of knitted versus woven fabrics. Important technological developments have also taken place in the garment industry, but in contrast to the textile industry they have not yet been widely introduced into the production process.

3.2.3 Peruvian Productivity Performance Revisited

The reasons for the dismal productivity performance of the Peruvian textile industry (as discussed in 3.2.1 and allowing for all the differences in performance between different firms and different processes) are basically three-fold:

(a) insufficient incorporation of new technology
(b) the existence of X-inefficiencies
(c) the inflexibility in terms of employment due to the Labour Stability Law.

The implications of the Labour Stability Law for productivity and costs are not specific to the textile industry and will not be considered here.

Capacity installed in the textile industry as of 1982 as well as the age of the machinery park can be seen from Table 25. Within the spinning sector open-end rotors account for 1.4 per cent of all spindles, 95 per cent of which are younger than 10 years. In contrast, 50 per cent of traditional ring spindles are older than 20 years and nearly 30 per cent of them are obsolete. The picture in the weaving sector is very similar. Shuttleless looms (the more modern technology) still account for a small percentage of total weaving capacity (6.2 per cent), and 95 per cent are less than 10 years old. 70 per cent of traditional looms (shuttle looms), however, are older than 10 years, 55 per cent are older than 20 years, and 30 per cent are obsolete.

Investments in machinery in recent years have mainly been directed at the incorporation of new technology (open-end rotors and shuttleless looms)[1/],

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1/ In 1980 alone, 439 shuttleless looms were bought (no shuttle looms), and 1,672 rotors (as well as 11,755 wool/acrylic spinning spindles and 49,588 cotton spinning spindles).

TABLE 25

INSTALLED CAPACITY (end 1982)

	Cotton Sector	Wool Sector	Synthetics Sector	Total
Spindles (short fibre)	645,000	—	—	645,000
Rotors (O-E)	9,840	—	—	9,840
Spindles (long fibre)	—	32,000	23,000	55,000
TOTAL SPINDLES	654,840	32,000	23,000	709,840
Shuttle looms	10,850	150	*	11,000
Shuttleless looms	650	78	*	728
TOTAL LOOMS	11,500	228	*	11,728

* included in cotton and wool sectors

Source: SOMEA (1984: 11).

MACHINERY PARK IN YEARS AS OF 1982

MACHINERY	Fibres	0-5	5-10	10-20	over 20	Obsolete	% Total
Cotton ring spinning	C-S	14%	20%	18%	20%	28%	100%
Open end spinning	C	65%	30%	5%	-	-	100%
Worsted/ woolen spinning	W-S	10%	18%	15%	25%	32%	100%
Shuttleless looms	WCS	70%	25%	5%	-	-	100%
Shuttle looms	WCS	5%	25%	15%	25%	30%	100%

Abbreviations C=Cotton, W=Wool, S=Synthetic

Sources: International Textile Association (Latin-American Textiles 1983) and SOMEA.

whereas investments in previous years predominantly consisted of machinery with traditional technology. It is also estimated that half of the machinery installed between 1974 and 1979 was second-hand.

To facilitate the technological up-dating of Peruvian textile machinery, a reduction and unification of import duties for textile equipment should be considered. Tariffs on textile machinery were increased between 1980 and 1982 (see Table 15), and the discrimination in terms of the level of tariffs applied between producers for the domestic and for the international market in favour of the latter was maintained. Given the lack of competitiveness of parts of the Peruvian textile industry, the goal should be an improvement in productivity regardless of whether the entrepreneur is exporting or selling domestically. Therefore, producers for the internal market and exporters should have access to imported machinery and material inputs on reduced and equal terms.

A final way to increase productivity is the elimination of X-inefficiencies, which are independent of the type of technology or machinery used. This entails amongst others improvements in the organizational set-up of factories, work organization and production environment at the factory floor. One example is the availability of air-conditioning. Normally, during days of high relative humidity in Lima companies not disposing of such equipment have to completely stop their spinning plants. Other plants have some type of air-conditioning, but have doors and windows open thus defeating the purpose of the exercise.

Another very important issue in the cotton as well as synthetic fibre sector is the lack of specialization which results in lower productivity and lower economies of scale.

3.3 Problems and Policy Recommendations

Restructuring of the textile industry should aim to align the industry more closely with its comparative advantage, thus increasing productivity and lowering unit costs. Future growth of the textile industry cannot be based exclusively on either exports or increased internal demand. Rather, it has to depend on the combination of both markets. The differing characteristics of demand and supply for both the domestic and the international market should be explicitly considered in policy and production decisions.

3.3.1 Short Term Recommendations

In view of the present difficulties of the textile industry immediate measures have to be taken to ensure the survival of still existing companies.

"Illegal imports" (contraband) and not legal imports pose a problem for Peruvian textile producers. In view of the difficulty to control contraband within the given framework of measures the recent import prohibition of many textile articles seems to have been a necessary measure to take. While such a policy is clearly suboptimal from an efficiency point of view, it seems to be the only way in which contraband can be controlled in the short run. It should be made absolutely clear to all parties concerned though that this is only a temporary measure which will be revoked, as soon as a sufficiently working control system has been installed.

Imports of textile machinery and inputs not produced domestically should not only be maintained, but they should be allowed to enter free of duty to facilitate ongoing modernization and a reduction in the costs of production. Exporters and producers for the internal market should be treated equally in their access to these duty-free materials, as the same value should be attached to 1 $ saved by substituting imports as to 1 $ earned through exports.

Should there be another shortfall in the cotton harvest, it is absolutely essential to allow imports of cotton to fill the gap between demand and supply. Sufficient availability of raw material is a necessary condition for continuing textile production, and it is proven that potential problems of contamination can be controlled through fumigation or other measures. This is obviously not only a short term recommendation. Cotton imports should be allowed always and automatically, whenever there is a shortfall in domestic supply.

Given the precarious financial situation of many textile companies due to the lack of working capital and/or high foreign debt, additional credit lines should be made available. The possibilities for a rescheduling of foreign

debt or a conversion into soles should be further examined. Provision of credit at preferential interest rates could be coupled with certain stipulations depending on the type of enterprise (e.g. a certain quantity of exports for predominantly exporting companies, steps towards rationalization for the three companies producing polyester filament, etc.).

Access to information about technological changes, marketing, foreign markets, change in fashions etc. is crucial for potential and actual exporters. The efforts that FOPEX has been starting to make in this respect should be greatly intensified. Participation in international fairs could initially be subsidized. Special attention should be paid to medium- and small-sized companies. Peru should join international bodies like the International Cotton Institute (organization of cotton growing countries), which is extremely helpful in the provision of technical advise as well as information on trends for cotton use according to different endproducts and markets. Representatives of leading international retailers such as C & A or Marks & Spencer in Europe should be invited to visit the country in order to directly discuss with industrialists the requirements and demand specifications of the European market. In countries such as Mexico the retailing companies have established permanent representations, providing a direct link between producers and rapidly changing demand requirements in the markets. If required, the provision of financial or other incentives for the establishment of such representations might yield a high return.

3.3.2 Medium Term Recommendations

Inputs

Peru has a comparative advantage in long staple cotton. In contrast to short staple cotton, Tanguis and Pima can be spun to yarns of very high fineness which in turn are used for fabrics of high quality. For this reason long staple cotton is sold at a premium on the international market, and finer yarns and higher quality fabrics are sold at a comparatively higher price too. On the other hand, average quality clothing and many industrial textile products can be produced with coarser yarns made from the cheaper short staple cotton. Using longstaple cotton for these purposes is therefore a clear misallocation of resources. It is strongly recommended to export

(nearly) all long staple cotton in raw or processed form and satisfy a large share of internal requirements with short staple cotton.

Expanding exports of cotton-based products might run into potential and existing import restrictions by the industrialized countries. The textile agreement signed with the USA at the beginning of 1985, coupled with the reduction in countervailing duties, which implies a stable source of demand for the next four years, as well as the exports of textiles to the USSR in partial repayment of Peruvian foreign debt, provide an important stimulus for textile production in the short run. Yet, to achieve higher growth rates in the highly competitive and protected international textile market in the medium and long run, exporters have to be aware of the highly differentiated markets (geographically as well as product wise), they have to be flexible to respond to rapidly changing fashions, they have to be aggressive in the constant search of new market segments (and use existing allocated quotas to the very limit), and they should try to upgrade textile products and consciously target high income consumers.

The latter alternative has successfully been applied by the Republic of Korea. At the core of this success is a deliberate government policy to allocate the quotas of the country for high-value-added items directly and fully to domestic producers, whereas only a fraction of quotas for low-value-added items is allocated to producers at the beginning of a year. These restrictions for domestic producers on the use of quotas for low value added items are successively relaxed, once quotas for high-value-added items are sufficiently filled. It seems advisable to look into the potential benefits of this approach in the case of Peru, once internal supply bottlenecks are solved.

There are two alternative ways to supply domestic textile producers with short staple cotton: either to import it or to cultivate it domestically. It is suggested here that imports are allowed (duty-free) barring the risk of infestation with available and appropriate measures. At the same time recent successful efforts of growing cotton in the Peruvian jungle areas should be analyzed very carefully and supported with appropriate measures. However, as long as international demand and adequate land for growing high quality cotton are available, it will be economically sound for Peru to export long

staple cotton, while importing short staple cotton for part of the local market.

The production of polyester filament should be rationalized.[1/] One possiblity would be to merge the three smaller companies on one site thus enabling them to take advantage of economies of scale.

Serious considerations should be given to the establishment of polymerisation processing in Peru, especially since the equipment has already been bought by Manylsa. According to a study by Chemtex, if the plants were installed with an offshoot of it producing plastic bottles, it would be much more viable.

While the main emphasis so far has been on cotton products, it should be underlined that Peru has a comparative advantage in alpaca, too. This advantage should be fully exploited through an expansion of breeding on the one hand and high value-added alpaca-based products on the other hand.

Finally, the clothing industry compared to the textile industry has been relatively neglected in this analysis. The rationale for paying primary attention to the textile sector has been the fact that an efficient textile industry in close alignment with its comparative adantages forms the best basis to generate high growth of the clothing industry. Yet, the apparel sector itself should also be studied in more detail, to see whether it needs itself special restructuring policies.

3.3.3. Restructuring Policies in OECD-Countries: the Example of France

Various ways to improve productivity were discussed before. They have to be carried out on a company basis, but would need to be supported by appropriate Government policies.

1/ In the synthetic fibre sector, it is mainly the production of polyester filament which is not competitive in the international market. In 1982, the price (per kg) in Peru was 128 per cent higher than in the US and 43 per cent higher than in Western Europe. While one company (FISA) accounts for 60 per cent of installed capacity, the remaining 3 companies cannot take advantage of economies of scale, thus resulting in unnecessarily high unit costs of production.

In this connection, some thoughts might be given to the experience of several EC countries which applied specific policies to support their textile sector and to improve their productivity. As an example for this the case of the French Sectoral Development Programme for the textile industry is cited here, which is implemented by the Committee for the Orientation and Development of Strategic Industries ("Comite d'orientation et de developpement des industries strategiques" CODIS). The most important instsruments used in this programme are briefly summarized here since they might provide a helpful contribution to a discussion of which specific measures to use in a restructuring of the Peruvian textile industry.:

- the "development contract"

  On a contractual basis between CODIS and the enterprises, subsidized low-interest loans and direct subsidies are given to the companies. In return, the enterprises have the contractual obligation to increase production and exports by an agreed minimum figure within a specified period (3 to 5 years).

- the "participation loans"

  These are loans given by the government, on which interest is payable only if the respective company makes a profit after successful restructuring.

- the "securities funds

  This is a guaranteed fund of FF 500 million, financed by the government and the enterprises (50 per cent each). The fund provides securities to support endeavours of companies to obtain loans at market terms.

- the reduction of social security contributions

  Firms are entitled to reduce their contributions to the social security system by 10 to 12 per cent. In return, they have to enter the contractual commitment to maintain the number of existing jobs. Approximately half the firms in the textile and clothing sector have benefitted from this measure.

In addition to these supportive measures, which form part of the sectoral development programme, the French Government has set up several special institutions, financed through parafiscal levies, to assist the restructuring and rehabilitation of the textile/clothing industry. The most important source of finance is a levy of 0.44 per cent on the value added of textiles produced in France, which is applied at an equal rate to the value of textiles imports from countries which are not members of the EC. It should be noted that the different bases of the levy - "value added" for domestic and "value" for imported products - contains an element of protection, which might have reduced the resistance of domestic producers against the introduction of such a levy. The largest part of the funds derived from this levy is allocated to the Interprofessional Committee for the Renovation of the Textile and Clothing Industry (CIRIT). Its supervisory board consists of representatives of the relevant ministries, banks and the textile industry

CIRIT gives

- direct financial support to small and medium sized companies;
- amalgamation aid to such companies;
- rationalization aids, which take the form of compensation payments and aids to retraining for employees which have to be dismissed as consequence of the closure of unprofitable units;
- financial support of collective activities undertaken by the industry, such as the office for observing cyclical trends in the textile sector, fashion centres and general studies.

A smaller fraction of the income derived from the levy is allocated to the French Textile Institute (Institut Textile de France) for the promotion of product innovation.

Finally, a levy of 0.062 per cent is imposed on the turnover of French manufacturers of clothing. It is used for the financing of the Centre for Technical Studies on the Clothing Industry.

4. CAPITAL GOODS (selected branches)

4.1 Capital Goods for the Mining Sector[1/]

4.1.1 Mining Production

The Peruvian mining sector contributed about S./30 billion (in 1970 prices) to GDP in 1983. A decline of about 8 per cent from the 1982 level (see Table 26) can be attributed mainly to a decline in copper production (of about 8 per cent (see Table 27).[2/] During the first half of 1984, the absence of labour disputes permitted a 15 per cent increase of output at Southern Peruvian Copper Corporation (SPPC). The producers are optimistic now that there will be a substantial production increase in 1984. However, the prospects for the mining sector are gloomy in the short and medium run.

Firstly, in view of worldwide overcapacities and the postponement of capacity expansions in Peru and other countries in the short term will have a significant negative effect on demand for capital goods in this sector. Thus, in 1984 the investment budget of SPCC was cut to US $4.9 million (compared to a budget of US $ 9.3 million[3/] and state-owned mining companies had to reduce investments by more than 30 per cent.[4/] Even if it is taken into account that both figures overstate the reductions to be expected in the medium run, there is a clear indication that in the short term the demand for large scale mining equipment and capital goods for the mining sector will grow only slowly.

1/ This analysis is restricted to capital goods for the mining sector and covers all consecutive steps from exploration to mining to metallurgy (ore benefication to obtain ore concentrate). The study does not, however, consider capital goods for smelting and refining which are completly different items.

2/ Mining production in 1983 was heavily influenced by strikes. Nevertheless, world market demand possibly had a major impact, too, so that production losses cannot simply be attributed to the smaller number of work days caused by labour disputes.

3/ See LAR Andean Report, 22 June 1984.

4/ See LAR, Commodities Report CR 84-18, 14 September 1984.

Secondly, there have been a number of technological developments which could have a negative impact on the income elasticity of the demand for copper. The most important ones appear to be the extended use of glassfibres in communication networks and the invention of some completely new artificial materials such as polimeres and argonic metals.

These materials are likely to follow aliminium as a substitute for copper in the future[1], while there are not enough new uses for copper to compensate for these losses.

Additionally, re-cycling has grown considerably in advanced industrialized countries and amounted to 3.73 million tons of output of refined copper in 1983. This was about 38 per cent of world production.

As a result of these developments, demand growth for copper might be slow even in the medium and long run.

1/ Between 1950 and 1982 the relation of copper to aliminium consumption at the world level changed considerably:

	CU	AL
	consumption in mill tons	
1950	3,000	1,500
1982	9,072	14,175

Source: Mardones, J.L., Silva R., Enrique, Martinez, C., Las industrias del cobre y del aluminio: Una revisión de cambios estructurales, "Cuadounos de economía, Año 21, No. 64, Dec. 1984, pp. 329-345, Tablo 2.

T A B L E 26

Gross Domestic Product by Sector: 1973-1983 (Million of 1970 Soles)

	1973	1974	1975*	1976*	1977**	1978**	1979**	1980**	1981**	1982**	1983**
Agriculture	38,536	39,422	39,816	41,130	41,130	39,896	41,125	38,918	43,900	45,525	41,454
Fishing	2,276	3,093	3,623	3,145	2,972	3,867	4,235	4,017	3,523	3,452	2,071
Mining	20,276	21,026	18,734	20,401	25,952	29,871	32,948	32,025	30,616	32,483	29,982
Manufacturing	71,595	76,965	80,582	83,966	78,508	75,682	78,634	82,802	82,719	80,486	66,642
Construction	13,055	15,927	18,603	18,082	16,690	14,003	14,521	17,257	19,156	19,597	15,423
Government	22,557	23,076	24,114	24,596	25,285	25,159	25,033	25,420	26,015	26,535	27,066
Others	116,089	124,370	129,557	132,239	129,192	125,505	129,342	135,174	140,041	140,317	124,235
Gross Domestic Product	284,384	303,879	314,029	323,559	319,729	313,983	325,838	335,613	345,970	348,395	306,873

* Preliminary: Instituto Nacional de Estadística.

** Preliminary: Banco Central de Reserva del Perú.

Source: Banco Central de Reserva del Perú, Memoria 1982.

TABLE 27

Mining Production - Main Products

		1981					1982					1983				
			Trimesters					Trimesters					Trimesters			
		Annual	I	II	III	IV	Annual	I	II	III	IV	Annual	I	II	III	IV
Copper	TMF	342	93	90	63	96	369	91	86	96	96	336	69	91	95	81
Lead	TMF	193	46	48	52	47	212	52	52	55	53	213	48	53	57	55
Silver	Kg.F.	1,470	338	363	378	391	1,660	398	422	434	406	1,738	390	440	461	447
Zinc	TMF	499	113	119	134	133	556	134	139	142	141	576	131	142	151	152
Iron	TMF	4,008	1,003	1,124	1,044	836	3,767	934	942	983	908	2,848	571	844	472	961
Petroleum	Mio/Bar.	70.4	16.8	17.8	17.9	17.9	71.2	17.3	17.5	18.4	18.0	62.6	15.1	15.1	16.0	16.4

Source: Banco Central de Reserva del Perú, Reseña Economica, different volumes.

4.1.2 Structure and Performance of the Capital Goods Industry for the Mining Sector

There are only few figures available on the sales of Peruvian capital goods. In 1981 and 1982, the national mining industry bought machinery and equipment on the national market for US $28.9 million and US $31.4 million, respectively. Imports are estimated to have been nearly three times as high (US $89.3 and US $92.0 million) with the United States as the most important partner (Table 28).

Exact figures on installed capacity are not available on a country-wide basis. Capacity utilization is generally low and is estimated to range from 60 per cent to 80 per cent of installed capacity.

The total number of enterprises working with deliveries to the mining industry is approximately 50. Most of the enterprises are manufacturing consumables such as explosives, drill steel, wear and spare parts and the product mix does not vary significantly between them. Although the firms are relatively small in size, they produce up to 60 different products, for which very different processes have to be used. Enterprises producing such a wide range of items are generally exposed to severe problems of organization resulting in idle capacities and X-inefficiencies.

About half of the enterprises in the sector are partly engaged in the manufacture of capital goods. However, this segment of the sector is characterized by an obvious lack of inter-firm specialization. For instance,

- at least 4 enterprises manufacture pumps
- at least 7 enterprises manufacture fans
- at least 15 enterprises manufacture mine cars
- at least 7 enterprises manufacture crushers
- at least 10 enterprises manufactue mills
- at least 12 enterprises manufacture flotation cells.

The heavy competition resulting from this situation of the industry lead in the past to quality deteriorations in order to achieve lower prices and to either co-operation with illegal-subcontractors or own illegal activities.

In view of idle capacities coupled with a lack of inter-firm specialization, a rationalization of the sector through mergers or other forms of co-operatin is called for. The need and scope for rationalization of the sector should be quantitatively assessed on a product by product basis by a technical-economic consultancy group. On the basis of this quantitative assessment suitable policies should be designed for a rationalization of the sector, including measures such as fiscal incentives for mergers, product standardization etc.

The need for a rationalization and restructuring of the industry is not limited to the product range, but applies equally to the given high degree of vertical integration within the individual companies.

Most manufacturing enterprises integrate all types of production lines such as:

- foundry (based on scrap iron) to final machinery;
- purchase of raw steel material (cast steel and metal) for working to final machinery;
- assembly to final product.

It is doubtful whether companies of the given size can possibly maintain the necessary technological expertise within all these lines of production. For instance, there is no urgent need that every manufacturing company for capital goods should have a foundry section of its own, particularly in view of existing specialized foundry operations in the same industrial areas. It can be hoped, however, that a recent UNIDO technical assistance project to establish a sub-contracting exchange will result in a reduction of horizontal integration and an increase of specialization at the firm-level.

TABLE 28

Main Items of Mining Equipment for the Peruvian Mining Industry

Equipment	Number of Manufacturers	
	Domestic	Foreign with Repr. in Peru
Ore transport	3	9
Grinding equipement for drill steel and bits	-	7
Drill booms	-	7
Drill bits	4	21
Bucket wheel excavator	-	2
Cable bucket excavator	-	2
Mining trucks	-	10
Front-end loaders	-	10
Mine cars	6	3
Compressors	1	10
Compressor tanks	4	1
Dust collector	1	5
Drill core analyzing eqip.	-	1
Hoisting equipment	2	9
Exploration equipment	-	1
Drilling equipment		
- for exploration	1	6
- for exploitation	-	24
Mine safety equipment	9	4
Explosives	7	2
Blasting equipment	1	1
Charging equipment for explosives	-	4
Concreting equipm. for guniting	-	3
Steel structures	2	-
Spec. designed mine excavators (mainly for open pits)	-	8
Mine lamps	-	6
Locomotives	-	16
Air and water hoses	4	11
Mine doors	2	-
Mine rails and accessories	3	7
Roof bulting equipment	-	5
Ventilation fans	3	5
Winches	5	8
Number of Items	32	

Source: Anuario Minero-Comercial, La Minería en el Perú 82.

TABLE 29

Main Items of Mining Equipment for the Peruvian Mining Industry

Equipment	Number of Main Manufacturers	
	Domestic	Foreign with Repr. in Peru
Agitators and air conditioners for flotation	-	4
Feeders	5	4
Autoclaves	2	-
Weighing machines	3	9
Balls for ball mills	3	4
Pumps	6	30
Calcinators	-	3
Flotation cells	5	5
Cyclones	4	3
Classifiers	6	5
Sieves	5	7
Dosifiers	1	-
Mechanical elevators	6	-
Various concentration equipment		
- Spiral	5	4
- Jigs	3	2
- Portable conc. plants	4	2
- Pre-concentrators	4	2
- Heavy media separation	3	1
- Gravity separation	2	3
- Magnetic separation	1	2
- Pulp analyzer	-	2
Laboratory equipment	1	10
Crushing equipment		
- Jaw crushers	3	4
- Cone crushers	3	4
Milling equipemtn		
- Ball mills	4	8
- Stone mills	-	2
- Rod mills	4	3
- Other types	4	4
- Rods for rod mills	-	4
- Balls for ball mills		
- Wear parts	5	3
Sampling	2	2
Equip. for registration and automatic analysing	-	4
Transport equip.		
- Conveyors	4	10
- Spare parts	5	10
Filters	4	7
Ore bins	6	-
	36	

Source: Anuario Minero-Comercial, La Minería en el Perú 82.

Within this general picture Peruvian producers are presently only supplying a limited range of capital goods. Out of 32 different goods analyzed in exploration and exploitation activities only 17 are offered by domestic producers, and in only six cases the number of domestic suppliers exceeded that of foreign competitors (see table 28). As to ore concentration 36 different items were reviewed. Here only 6 items show a 100 per cent dependency on imports and in 15 cases the number of domestic suppliers equalled or exceeded that of its foreign counterparts (see table 29).

Distinguishing domestic and foreign supplies not by the number of suppliers, but rather by the value of output, it is estimated that in exploration and exploitation only 10-15 per cent of capital goods are produced in Peru, in contrast to 80 per cent of consumables (see table 30). Peruvian firms are generally more competitive in those activities, where advanced technologies are not required. This is the case, for example, for small crushers (large ones are exclusively imported), air and water distribution, drainage, and most consumables. With respect to the production of equipment for ore concentration domestic suppliers appear to be particularly strong.

However, Peru does not possess manufacturing facilities to produce certain basic items of equipment and machinery, or manufacture under licence. Much of this basic equipment and machinery produced does not require high technology to manufacture. Some examples are listed below:

- Mine lamps	No manufacturing but 6 different importing companies.
- Mine locomotives	No manufacturing but 10 different importing companies.
- Rails and accessories	This equipment comprises low-technology items and ought to be produced by domestic manufacturers. The high costs of domestic steel and the high quality demands imposed by clients has given rise to the high import volume.

TABLE 30

Capital Goods and Consumables for Different Mining Activities

Branch of Mining: Exploration and Exploitation

MINING ACTIVITY	CAPITAL GOODS: ORIGIN		CONSUMABLES: ORIGIN	
	Domestic	Foreign	Domestic	Foreign
Exploration	10%	90%	25%	75%
Exploitation				
- Drilling		100%	90%	10%
- Blasting		100%	95%	5%
- Loading		100%	-	-
- Transport	10%	90%	80%	20%
- Crushing, small crushers	50%	50%	95%	5%
- Crushing, large crusher	-	100%	75%	25%
- Hoisting	20%	80%	-	-
- Rock reinforcement	-	100%	20%	80%
- Air compressors, small	20%	80%	-	-
- Air compressors, large	-	100%	-	-
- Air and water distribution	80%	20%	-	-
- Drainage	50%	50%	-	-
- Others	25%	75%	-	-
Total Expolration and Exploitation	10-15%	85-90%	80%	20%

Main consumables:

Drill bits for exploration (diamond bits)
Drill bits for exploitation drilling
Drill steel
Explosives
Detonators and cords
Wear parts for crushers
Reinforcement consumables
Rail and accessories

Source: Mission estimate.

In sum, capital goods production for the mining industry is more advanced in concentration processes than in exploration and exploitation and it is presently mainly concentrated on low-technology products such as mine cars, low capacity compressors, steelstructures, etc. These products are predominantly sold to small and medium scale mining firms, which produce using intermediate technologies.

However, the concentration on small and medium-sized producers and their special requirements cannot be a viable strategy in the long run, if this section of capital goods production is to grow considerably. This becomes clear in view of the structure of the mining sector, which is dominated by large-scale mines.

La Gran Minería comprende a las empresas con ventas mayores a los U.S. $100 millones anuales. Estas son:

- Southern Perú Copper Corporation, que cuenta con dos minas y una fundición.

- Centromin, que cuenta con seis minas, fundición y refinería.

- Minero Perú, que posee una mina y dos refinerías.

- Hierro Perú, con una mina.

La primera es extranjera, y las otras tres son estatales. Estas empresas en conjunto tienen una capacidad de concentración de minerales de 90,000 TM/día, lo que equivale al 75% de la capacidad del país.

La mediana minería comprende a 72 empresas peruanas privadas, 3 empresas estatales y 6 empresas extranjeras, con ventas superiores a US $1 millón anuales. Representan el 90% del número de plantas concentradoras en el país, pero su capacidad de concentración en conjunto es solo de 27,000 TM/día, es decir el 25% de la capacidad nacional.

La pequeña minería está compuesta por más de mil pequeños productores, con ventas menores a US $ 1 millón al año. Los pequeños mineros se caracterizan por no contar con plantas propias de concentración.

Realizan las labores de extracción del mineral y luego lo venden a las empresas que las pueden procesar.

Even if there are some additional market segments for the installation of smaller capacity units in the future, it is hard to believe that the general picture of the copper sector will alter substantially in the medium run. Even in those cases where technical progress in extraction and processing methods will establish a trend towards smaller units, these will probably be operating with more modern equipment.

In lead, zinc, and silver production, medium scale producers which are presently operating predominantly with low-technology equipment and machinery are much more common due to the different conditions for extraction and refinement (52.7 per cent of lead, 54.5 per cent of zinc and 64.7 per cent of silver is produced on this scale). While this provides an advantageous position for local producers in the near future, technical progress will affect those areas in the medium run, too. Thus, in order to meet the future investment demand of the large and of many medium-sized establishments at least partly, local producers of mining equipment have to keep in touch with technological progress on the international level and they will have to improve the quality of their products with far more intensity than today.

The enterprises producing capital goods for the mining sector are mainly located in the industrial areas of Lima-Callao. Although the decentralization of economic activities is one of the important tasks of economic policy in Peru, it is not at all clear, if this is a valid strategy for the capital goods industry too. Producers of capital goods normally have to plan, organize, and supervise relatively complex sets of different operations. Products are very often changing in design, quality of inputs and other properties according to individual requirements of the customers. This means that the production runs themselves are changing repeatedly, too, and very often only single products of one kind are required. Consequently, high skill requirements have to be met by the engineering and technical staff. The same holds true for workers, who constantly have to adapt to changing working conditions. In this connection, it should be emphasized

that a rigid labour legislation is especially harmful for this kind of industrial operations.

It appears to be even more important, though, that capital goods producers rely most heavily on related industries. Adequate partners, skilled sub-contractors and access to essential imports for lacking domestic inputs are among the essential requirements of capital goods production. Therefore, it appears to be necessary for the capital goods sector to be able to rely on an agglomeration area which provides a satisfactory number of inter-linked and regionally concentrated industries and a close connection to the international market. These arguments as well as the relatively intensive use of skilled labour in design, organization and prodcution indicate, that those kinds of industries should not be included in regional diversification policy in a small economy like Peru at the present stage of economic development.

4.1.3 Prospects of Medium and Small Scale Mining Operations

Medium and small scale mining differ from the large scale mining sector in some important respects. Firstly, small scale activities are considerably more labour intensive than large scale operations, so that a stimulation of this sector would have a relatively strong and immediate impact on employment creation. Secondly, capital goods used are predominatly low technology items, for which local supply is available on a competitive level. Thirdly, during the last decade there has been a growing interest in the development of small and medium sized establishments world-wide, so that within the relatively slowly growing demand for mining capital goods as a whole, this subsector appears to be the most dynamic one. Leaving aside the impact of recent cut-backs of public investments in Peru, the prospects for capital goods for medium- and small-scale mining appear to be relatively good within the Andean market.

Peruvian entrepreneurs are capable of supplying the market segment of low-tech mining equipment immediately, if demand increases. In the long run, however, the traditional mining sector is challenged by two different but related developments. Firstly, technical progress in the modern sector is

faster than in the traditonal sector, so that ceteris paribus competitive pressure on traditional mining activities - caused by developments in the modern industry - will grow. Secondly, technical changes in large scale mining will trickle down to smaller firms progressively and stimulate the installment of modern equipment within this sector, too. To the extent that medium- and small-scale mining become open to modern equipment, the Peruvian capital goods industry will have to catch up with the technological development to defend its competitive position.

In this context, one of the most interesting new developments can be seen in the application of bio-technology for minerals extraction. These new technologies appear to be especially promising in the exploitation of multi-mineral deposits and dump leaching with ore concentrations of less than 1 % - 0.5 %. A fact, that is greatly in favour of Peru and other Andean countries. Promising efforts to advance the necessary techniques of bacterial-leaching have been undertaken within the Andean Market Copper Project at Cerro de Pasco (dump and underground leaching operations) and they are now carried on by INGEMMET (Inst. for Geological, Mining and Metallurgical Res.) and CENTROMIN.

Thus, in this section of technological advance Peruvian engineers appear to be among the leading ones in the world today and this should be used offensively to establish close links to capital goods producers, too. For the latter, growing demand for bio-technology equipment would mean another challenge, but at the same time provide the basis for promising new activities.

4.1.4 The Export Potential for Mining Machinery and Equipment

The stimulation of non-traditional exports from 1975 on had a positive impact on the development of exports of mining equipment, too. Especially trade within Latin America and - even more - within the Andean Pact registered impressive growth rates. This indicates that the long experience of Peruvian engineers in mineral production in mountainuous areas constitutes a comparative advantage vis-a-vis foreign countries resulting in good prospects to increase exports.

In the early 1980's trade in capital goods suffered particularly from the decline of economic growth in the whole area and from the extraordinary sluggish demand for minerals. The Peruvian mining industry was additionally affected by the abrupt changes in the export promotion system and some new protectionist measures within the Andean Pact. Both developments had negative effects on the competitive position, which turned out to be especially harmful in combination with the recession in the Peruvian economy. On the other hand, the Quito Declaration from January 1984 seems to justify some hope at least, that recently introduced import restrictions within the Andean Pact (and Latin America) will be gradually taken back in the near future, so that the external prerequisites for a revitalization of exports exist.

In a joint project UNIDO and ECLAC (1984) tried to estimate the demand for machinery and equipment for mining for Argentina, Brazil, Chile, Peru and Venezuela between 1983 and 1992. The results are shown in Table 31. Although these data are highly tentative in view of long run changes in market conditions, the structure of investment demand might be seen as relatively reliable. Thus, the major share of demand is for off-road trucks (34 per cent in replacement and 10 per cent in new projects). Other important machinery and equipment groups are excavating scrapers (22 per cent) and mills (16 per cent). Twenty-four per cent of estimated new investment demand would be in Peru, 26 per cent in Brazil and 41 per cent in Chile.

Extending these considerations to the world market reveals some additonal facts. In the medium term, there are almost 400 new mine projects or expansion plans worldwide, out of which about 125 are copper projects. The majority of the projects are expected to come on stream before 1988, and most of them are small and medium scale projects. Therefore, in view of the particular strength of Peruvian capital goods producers in this market segment the medium term prospects for a resumption of growth in this sector appear to be favourable, if new export markets can be penetrated.

It should be noted, though, that Peruvian industry should face not less favourable conditions than competing industries in Latin America, in order to capture a significant share of this export potential. This was not the case e.g. in 1981, concerning the availability and terms of export credits, as shown in Table 32. It is suggested that the terms of export credits and other incentives in competing countries should be monitored on a permanent basis, and that this information be distributed to domestic exporters.

TABLE 31

Argentina, Brazil, Chile, Peru, Venezuela: Demand estimate of machinery and equipment for mining, 1983 - 1992

	Equipment	New projects		Replacements	
		Units	$US million	Units	$US million
1.	Rotative perforators (6"-12 1/4")	147	132	-	-
2.	Perforators-non tracked (3"-6")	59	4	89	6
3.	Raise borers	-	-	-	
4.	Jumbos	10	2	121	30
5.	Power shovels (3-10 sq yd)	93	130	-	-
6.	Power shovels (> 10 cu yd)	140	476	-	-
7.	Frontal loaders (without tires) (5- 7 cu yd)	62	16	98	25
8.	Frontal loaders (without tires) (> 7 cu yd)	96	38	73	29
9.	Scooptrams (2-13 cu yd)	16	4	214	47
10.	Heavy lorries (35-70 ton)	251	93	123	46
11.	Heavy lorries (70-170 ton)	655	459	214	150
12.	Lorries (10-35 ton)	5	1	46	9
13.	Tractors-non tracked (200-700 HP)	303	91	251	75
14.	Road building machinery	186	28	131	20
15.	Special purpose motor vehicles	-	21	-	-
16.	Mining machinery (non-heavy)	-	.6	-	-
17.	Extraction machinery (drum and friction	-	2	-	-
18.	Grinding wheel machines (42 x 65" - 54 x 74")	8	7	-	-
19.	Grinding wheel machines (60 x 89" - 60 x 109")	22	48	-	-
20.	Grinding jaw machines (24 x 36" 48 x 60")	3	1	-	-
21.	Cone-shaped grinding machines (5 1/2" - 7")	193	48	-	-
22.	Mills, ball penetrators and bars (< 1000 HP)	112	78	-	-
23.	Mills, ball penetrators and bars (> 1000 HP)	203	365	-	-
24.	Supply apparatus, screen classifiers etc.	-	52	-	49
25.	Flotation equipment (cells, pumps, gutters)	-	81	-	26
26.	Thickeners, filters and dryers	-	81	-	-
27.	Locomotives and wagons	-	43	-	-
28.	Conveyor belts	-	48	-	-
29.	Compressors, water pumps and ventilators	-	72	-	-
30.	Machine tools		11		
31.	Electrical Installations		96		
32.	Metallic structures and boilers		197		
33.	Drill and boring machines		11		13
	Total		2,752		579

Source: UNIDO/IS. 478, July 1984, p. 70.

Table 32 Available credit facilities for the export of capital goods in selected countries

Country	Terms for pre-shipping period			Terms for post-shipping period		
	Credit (% of total amount)	Maximum duration (years)	Interest rate (% p.a.)	Credit (% of total amount)	Maximum duration (years)	Interest rate (% p.a.)
Argentina	85	1	2.5	85	8.5	7.5
Bolivia	80	2/3	12	80	1	10
Brazil	a/	1	40 b/	85	5-8 or more	7.5-8
Colombia	80	1/2	19 b/	100	5-10	
Ecuador	80	1	6	80	5 or more	7c/, 12.5d/
Mexico	85	variable	8	85	8.5-10	7.75
Peru	70	1	56 b/	90	5	10.25-12
Venezuela	80-100	variable	6	100	5 or more	7

a/ Depending on value.
b/ National currency.
c/ First year.
d/ In each following year.

Source: División Conjunta CEPAL/ONUDI, Guía para la descripción de mecanismos de incentivo a la producción y comercialización de bienes de capital y servicios conexos (copia mecanografiada), agosto de 1982.

4.1.5 Approaches to Foster the Production of Capital Goods for the Mining Sector

The reactivation of demand appears to be the most critical variable at the present time. In the medium run, the creation of additional demand through "demand-diversion" from foreign to Peruvian producers appears to be essential for the required process of technological upgrading of the industry. This task requires the creation of institutions to serve as dialogue between national suppliers and producers of capital goods, with the aim to increase domestic participation in sales of presently produced capital goods in the short term and of technologically more advanced capital goods in the medium and long term. The issues related to medium and long term demand diversion (supported by improvements in the institutional framework), will be taken up in the final part of chapter 4, as they are common to both sub-sectors of the capital goods sector which are analyzed in this study.

As to measures to increase demand for currently produced capital goods, particularly in the field of internationally financed projects it appears that the potential participation of domestic producers was not always given full consideration in the past. This is partly due to efforts of foreign donors to tie economic aid to exports from the donor country, partly due to the method used in calculating preference margins for domestic producers in the base of multilateral projects.

In the latter case, foreign suppliers can submit their offers at C.I.F. prices, excluding those national taxes which can be deducted in the case of exporting. Peruvian producers are granted a 15 per cent preference margin over these foreign offer prices, but cannot deduct the Peruvian value added tax. Therefore, the preference margin compensates merely the value-added tax exemption granted to foreign exporters, but does not include an element of "infant industry" protection, which would be required by national producers, particularly in their efforts of technological and product upgrading. Beyond this, Peruvian producers in fact are being discriminated against foreign competitors in so far as they face higher prices for intermediate inputs as a result of higher import tariffs in Peru. It is therefore recommended to analyze the possibility of granting to domestic producers which are bidding for international financed projects equal incentives and allowances as are given to domestic or foreign producers in the case of exporting.[1/]

It should be emphasized on the other hand, that such measures by themselves will not automatically result in an increase of orders for domestic producers. A major emphasis on quality and quality control will be essential in order to realize this potential in the future. The economic importance of seemingly minor differences in quality may be illustrated with the following example.

A poorly designed flotation cell yields a 1 per cent lower recovery rate than standard equipment:

Normal recovery: 87 per cent of a 25 per cent copper concentrate

Ore to be processed: 2,000 tons/day with 1.5 per cent copper content

Copper loss per day due to lower quality equipment:	1 per cent x 1.5 per cent x 2000 = 300 kg

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1/ This issue will be taken up again in chapter 4.3.

With the copper price of US $0.70 per pound the result is a daily loss of US $116 and a yearly loss of US $40,600. This means that a poorly designed flotation cell which results in a 1 per cent lower recovery will cause an annual loss exceeding its purchasing price more than twice. It is obvious that at such a difference in the recovery rate between flotation cells produced at home and abroad, even a 50 per cent lower price would not be enough to make the foreign product less attractive.

In this connection it may be mentioned that so far only very few enterprises utilize ITINTEC's service concerning quality control. This service is mainly used for larger tendering if the client requires a product certification. It is recommended that ITINTEC should be provided with sufficient resources for product certification on a substantially larger scale.

As to demand financed by domestic savings, an additional promising instrument which can be employed for direct stimulation of the mining equipment sector would be the provision of improved access to the local capital market for small-scale miners. Interest rate subsidies, public guarantees, and other investment incentives like accelerated depreciation allowances might be considered to reach this goal.

Additional instruments which serve to improve the efficiency of mining activities whilst at the same time promoting the demand for domestic capital goods are already being used. A particularly useful inititative is reported from Banco Minero, which leases ore concentration plants to a collective of different mines within narrowly defined geographical areas. Central ore concentration can thus serve 5-10 different mines with similar ore minerals.Due to the well developed infrastructure in the mining area, the various mines can be situated up to 30 km from the central plant.

If the mines can fulfil the requirements of Banco Minero, such as ore resources, ore grades, number of mines, infrastructure, Banco Minero signs a leasing agreement with the mine owners to make an ore concentration plant available. If so required, Banco Minero can also assist in the training of responsible technicians for the plant and carry out as well tests for the ore concentration process, and assist the mine owners in signing a sales contract for the ore concentrate.

The leasing agreement is usually contracted on a leasing-sale basis. The mine owners have the option to buy the plant after the leasing period (normally 18 months) is over. Payment is usually extended to a 10 year period and credits are given at reasonable conditions.

Twenty ore concentration plants with capacities from 30 to 200 tons per day have been delivered until now. Table 33 shows the decreasing unit cost of concentration when bigger units are employed. However, with larger concentration plants the transportation costs for all producers together increase. Only detailed cost studies could gtive an answer to the optimal size of such plants.

It is especially worth noting that under this project all deliveries of the complete plants have come from Peruvian manufacturers, though heavy foreign competition had to be met. This initiative from Banco Minero appears to be a promising example of a successful mining promotion with considerable benefits for the local capital goods industry. Similar actions are recommended for other types of equipment and also for technical services such as:

- leasing-purchase contract for compressors
- leasing-purchase for drilling and loading equipment
- technical services for geology, mine surveying, administration etc.

TABLE 33

Estimated Investment Costs in US$ for Ore Concentration Plants

Costs, US$, per Leasing Plant

ACTIVITY	30 tons/day	50 tons/day	200 tons/day	Total Costs, 20 Plants
Complete plant	250,000	320,000	1,160,000	6,820,000
Electric supply	38,000	49,000	95,000	960,000
Civil work	100,000	128,000	450,000	2,714,000
Basic implementation	37,000	48,000	173,000	1,019,000
Transport	5,000	7,000	25,000	146,000
Taxes	20,000	26,000	92,000	550,000
TOTAL	450,000	578,000	1,995,000	12,209,000
Total Costs per Capacity unit (1 ton/day)	15,000	11,560	9,9975	
Number of Plants	6 units	13 units	1 unit	20 units

Source: Data provided by Banco Minero del Perú.

4.1.7 Identification of New Products

Because of the problems associated with forecasting future production possibilities a set of possible new lines of production is suggested only hesitantly and should be taken as purely indicative and tentative. The data are based on interviews with national producers and reflect their individual evaluation of the respective markets. They are presented here despite these shortcomings, because they reflect the perception of the scope of future activities as seen by persons being especially familiar with local market conditions. These evaluations are based on the conditions that a) there is a possibility to use foreign technology through the acquisition of Licences and patents, b) imports of vital components and technical assistance from abroad are not discriminated against and c) the institutional framework will be improved such as to facilitate for domestic enterprises the production and sale of goods which are not being produced at present (c.f. 4.3.). In addition, the conduct of specific feasibility studies of national production of these items appears to be adivsable.

Short-range goals

PRODUCTS	COMMENTS
Screw compressors	One existing manufacturer of piston-type compressors is presently negotiating with international compressor manufacturers for the manufacture of screw-compressors under licence (import of vital components). It can be integrated into existing production lines.
Locomotives, diesel and battery drive	Their production can be integrated into existing manufacturing lines. The existing Peruvian representative is expected to continue the sale.
Mine lamps, charging equipment and accessories	A new industry to be set up or to be integrated with the local manufacturing of safety equipment.

Drilling equipment, hand-held rock drill wagons	In spite of hard international competition it is recommended that manufacturers, existing representatives and the mining industry study conditions for the manufacture of drilling equipment. Exports to the Andean Pact countries should be considered. A study of the former factory established in Bolivia and the reasons for its failure should be carried out.
Charging equipment ANFO explosives	The increased use of ANFO explosives, which are locally manufactured, creates a good market for this equipment. It does not demand high-technological manufacturing but requires high quality control. It can be integrated with existing production lines.
Reinforcement equipment such as accessories, reinforcement bolts, etc.	An increased demand from the mining enterprises and the mine workers to increase safety in the mines will also increase the demand for such equipment and consumables.They can be integrated with existing production lines
Metallurgical equipment and technology	New metallurgical technology such as gold cyanidation of placer deposits will call for a new type of metallurgical equipment. This requires foreign technology but does not demand high-technological manufacturing. It can be integrated in existing production plants.
Rails and accessories	The existing import of these items ought to be completely substituted by local products. It can be easily integrated in existing production lines.
Air and water pipes, ventilation tubes and accessories (valves, crane, couplings etc.)	Same comments as above. Manufacturing of ventilation tubes, plastic or woven material, may require new production lines.

Based on short-range objectives, the following market potential has been estimated by taking into account existing mining production and future projects which can be realized within the near future. This can be regarded as a moderate estimate.

PRODUCT	VOLUME
Screw-compressors	10 units/year
Locomotives	10 units/year
Mine lamps	2000 units/year and charging equipment and accessories
Rock drills	100 units/year
Drill wagons	25 units/year
Charging equipment	10 units/year
Reinforcement equipment (guinting machines etc.)	10 units/year
Reinforcement bolts etc.	500,000 units/year
Rails	10,000 m/year and accessories
Air and water pipes	10,000 m/year and accessories
Ventilation tubes	5,000 m/year

* According to a recent study the need of reinforcement bolts is more than 1 million bolts per year.

Long-range goals

Regarding long-range goals (5-10 years) it is of particular importance to maintain close collaboration between the manufacturers and the mining industry (c.f. 4.3.). Examples of mining capital goods which might be produced in Peru are:

- Loading equipment with pneumatic, diesel or electric drive.
- Drill jumbos, pneumatic and all-hydraulic jumbos.
- Complete manufacturing of drill steel and bits.
- Manufacturing of a more complete range of metallurgical equipments.

4.2 Production of Equipment for Power Generation and Distribution in Peru

4.2.1 General Remarks

Machines, equipment and products for the generation and distribution of electricity form part of the so-called engineering products. The International Standard Industrial Classification (ISIC) contains these products in division 38, the electricity generation and distribution equipment is mainly classified in ISIC subgroup 3831. Porcelain and glass insulators (3610 and 3611) and insulated cables and wires (3839) have to be added.

During the 1970s, the share of ISIC group 38 in total manufacturing value added increased to a peak of 16.8 per cent in 1976. However, by 1980, its share had fallen to 14.4 per cent. Within this group ISIC 383 counted for about one quarter, a fifth of which has to be attributed to the subgroup 3831. Thus, it should be noted that this sub-sector does not contribute a major share to total manufacturing value added. It may, however, be taken as one example for a sector which deserves policy attention and has a promising development potential at the same time. This is underlined by the fact that the size of the ISIC 383 sector in Peru is significantly smaller than in countries which are at a similar stage of development (c.f. section 1.2.2)[1/]

After 1981, production of ISIC group 38 declined even further. Output of electrical machinery decreased by 20.2 per cent in 1982 and 40 per cent in 1983 (c.f. Table 8).

1/ Within the ANDEAN group the Relative Degree of Industrialization coefficients indicate that both for Columbia and Venezuela the size of ISIC 383 corresponds largely to the average of developing countries of a similar stage of development. In Bolivia, the size is significantly smaller, whereas in Ecuador it is significantly larger. C.f. also pages 6-7 of this summary report.

4.2.2 The Present Industrial Structure

The number of enterprises and the personnel employed in ISIC 383 are shown in Table 34. In 1981, there were 325 enterprises with a total workforce of 9,246 people. Employment per enterprise was 28.4 on the average, with the lowest value in ISIC 3831 (27 persons) and the highest value in ISIC 3832 (30.4 persons).

The number of enterprises registered under ISIC group 3831 has increased from 46 in 1976 to 81 in 1981, a surprising development in view of the reduction of output of industrial electrical machinery after 1979. Table 35 shows the development of the number of enterprises, employment and average size of company from 1976 to 1981. The decreasing number of persons employed per enterprise from 46.6 in 1976 to 27 in 1981 seems to indicate two different developments:

1. MITI has increased the coverage of the active industries by including a substantial number of small enterprises in MITI records. This is apparent for the period 1977 to 1979, when the number of companies increased by 54 per cent and the work force by only 16 per cent, which led to a drop in average employment per enterprise by 25 per cent. This good performance in registration continued until 1981.

2. During the same period, the decrease in the volume of orders and sales caused by the economic recession, led to a reduction of the workforce by 15 per cent between 1979 and 1981 bringing total employment in 1981 back to the magnitude of 1976. Preliminary estimates indicate that the workforce was further reduced by approximately 15 per cent between 1981 and 1982, which would mean an employment figure of around 1900 for ISIC 3831 in 1983.

4.2.3 Fixed Assets and Investment

Table 36 shows the stock of fixed assets and annual investment between 1976-1981. There was a tremendous drop in the stock of assets other than machinery and equipment between 1976 and 1977 from S./446 million to S./213

TABLE 34

Number of Enterprises, Personnel Employed and Value Added per Employee in the Production of Electrical Machinery, 1981

ISIC Group	Enterprises No.	%	Employment Number	%	Value Added pet employee- (mil. soles per person)
3831	81	24.9	2,183	23.6	5.31
3832	99	30.5	3,011	32.5	8.79
3833	36	11.5	875	9.5	7.77
3839	109	33.5	3,177	34.4	8.49
TOTAL 383	325	100.0	9,246	100.0	7.77

Source: MILTI

TABLE 35

Number of Enterprises,* Employment, and Average Size of Enterprises of ISIC 3831, 1976-1981

	1976	1977	1979	1980	1981
Number of enterprises	46	48	74	74	81
Total employment	2,141	2,227	2,578	2,387	2,183
(employees)	(813)	(821)	(1,089)	(961)	(914)
(worksmen)	(1,328)	(1,400)	(1,489)	(1,426)	(1,269)
Number of persons per enterprise	46.7	46.4	34.8	32.4	27

* The enterprises are concentrated in the metropolitan area of Lima, i.e. Lima and Callao.

Source: MITI

million (at constant 1973 prices), followed by a weak positive trend in subsequent years). The value of assets in machinery and equipment rose considerably up to 1979, but dropped from S./413 million in that year to S./255 million in 1980, and did not recover in 1981.

The extraordinary increase in the value of assets of machinery and equipment between 1977-1979 can be explained by the fact that during this period the number of companies increased by 54 per cent due to the registration of a substantial number of small enterprises. The figures for machinery and equipment per employee rose from S./122,000 to S./160,000 in this period, which is clearly less than the increase in total assets. This reflects the lower capital-labour ratio of the newly porated smaller enterprises). The behaviour of total investment in machinery and equipment confirms this suggestion: the increase in total investment between 1977-1979 was less than 7.5 per cent annually and cannot explain the tremendous increase in the capital stock. Real investment dropped to S./49 million in 1980 and S./29 million in 1981, causing severe problems because of the age and size of the capital stock.

4.2.4 Output, Value Added and Labour Productivity

Gross output and value added of electrical machinery and equipment producers (ISIC 383) are shown in Table 37 in current prices and constant prices of 1973. Only one group, electrical apparatus n.e.s. (ISIC 3839), reached a higher production value and value added in 1981 than in 1976. After a growth period of different lengths (ISIC 3831: until 1979; ISIC 3839: until 1980; the two other groups show a varying performance) a steep decline occured between 1980 and 1981: 20 per cent in production value and 18 per cent in value added for ISIC 3831, and 12 per cent and 2 per cent respectively for the whole subsector, ISIC 383. According to preliminary estimates of early 1984 the production value remained more or less stable in 1982 compared to 1981, and decreased strongly again in 1983.

Comparing the share of value added in gross output (Table 38), one notes again a decrease for all subsectors over the years 1976 to 1981. It declined comparatively less for ISIC 3831 (7 per cent), but for ISI 3839 the decrease was considerable (17 per cent).

TABLE 36

Fixed Assets at Current and Constant Prices and Investment Per Employee (in million Soles)

	1976	1977	1979	1980	1981
Current prices					
Fixed assets	777	1,110	4,418	5,286	8,288
of which: machinery and equipment	448	622	2,655	2,624	3,950
Constant prices (1973)					
(1) Fixed assets	.699	485	687	513	508
(2) of which: machinery and equipment	253	272	413	255	242
% (2) : (1)	36.2	56.1	60.1	49.7	47.6
Fixed assets per employee (thousand soles per person)	326	218	266	215	233
Machinery and equipment per employee (thousand soles per person)	118	122	160	107	110
Current prices					
Total annual investment	203	243	741	815	1,046
of which: machinery and equipment	148	138	442	501	476
Constant prices					
Total annual investment	115	106	115	79	64
of which: machinery and equipment	84	60	69	49	29

Source: MITI, own calculations.

Gross production as well as value added per employee (Table 39) were the highest in 1977. Subsequently, they decreased until 1981 except for 1980, where gross output per worker rose slightly from the year before, yet value added continued decreasing.

The production value per employee expressed in US$ is in the order of US $19,000 to US $23,000, which compares favourably with figures from other developing countries.

4.2.5 The Product Range and Local Content

The main products under ISIC group 3831 currently produced in Peru are: power transformers up to 220 KV and 50 MVA, distribution transformers, electric generators up to 500 KW, electric motors up to 300 KW, repair of electric motors, diesel generator sets, hydraulic generator sets (turbines up to 2 MW), switchgears up to 24 KV and 630 A, current rectifiers and regulators, low voltage switchgears, and battery chargers.

In general, the exiting Peruvian production of equipment for the generation and transmission of electricity covers a relatively wide range of products and can supply a good portion of domestic consumption. Some products have been discontinued like aluminium transmission lines, as the drawing of aluminium using imported intermediate products proved to be un-economic and not competitive with the imported finished product.

The major part of inputs is of domestic origin (see Table 40), varying between a minimum of approximately 35 per cent and a maximum of approximately 60 per cent. Considering raw materials alone, however, foreign supplies dominate (about 60 per cent). According to the results of preliminary estimates the share of domestic raw materials has increased strongly since 1981. The local content remained relatively stable during the time considered in Table 40, oscillating around two thirds of the value of production. This can be considered a very positive achievement of the industry.

TABLE 37

Electrical Machinery - Gross Production Value and Value Added, 1976-1981
(Million Soles at Current and Constant (1973) Prices)

	Gross Production Value					Value added				
ISIC Group	1976	1977	1979	1980	1981	1976	1977	1979	1980	1981
Current prices										
3831	3,021	4,503	13,298	20,455	26,017	1,448	2,242	6,614	8,958	11,586
3832	4.042	10,529	20,208	39,615	60,708	4,091	4,548	8,657	15,514	16,465
3833	2,020	2,390	4,803	11,843	13,382	1,063	1,273	2,185	4,587	6,799
3839	4,848	6,379	26,047	46,475	64,969	2,416	2,754	10,436	21,794	26,972
383	18,981	23,801	64,356	118,388	165,076	9,018	10,817	27,892	50,853	71,822
Constant prices*										
3831	1,705	1,967	2,067	1,986	1,595	817	979	1,028	870	710
3832	5,131	4,600	3,142	3,847	3,722	2,309	1,987	1,346	1,507	1,622
3833	1,140	1,044	747	1,150	820	600	556	340	446	417
3839	1,736	1,787	4,050	4,453	3,983	1,363	1,203	1,623	2,116	1,654
383	10,712	10,398	10,006	11,496	10,120	5,089	4,725	43,370	4,939	4,403
Price index	177.2	228.9	643.2	1029.8	1631.2	177.2	228.9	643.2	1029.8	1631.2

* Price index for major group 383 published by MICTI. Indicadores del sector manufacturero 1981, December 1982.

Source: MICTI

4.2.6 Production Costs and Efficiency

Total cost per employee (wages, salaries and other personnel costs) at constant prices (1973) in 1979 and 1980 were approximately 25 per cent below the 1976 and 1977 level. By 1981, this difference was reduced to 8 per cent (Table 41). This is in line with the decline in real wages, which the whole economy had to suffer after 1975. In Chapter 1, it was shown that the minor improvement in unit costs for the econmy as a whole could be realized, because real wages decreased at a higher rate than productivity. It cannot be concluded from Table 41, however, if this was also true for the sector producing equipment for power generation and distribution. Again, a considerable part of the development of the trends between 1977-79 appears to be the result of the increase in registered firms during this period. Since the newcomers have been relatively small firms, paying lower hourly wages on average and employing less skilled labour, the effect on unit labour costs of all firms in this sector is ambiguous.

As to the efficiency of the enterprises, in most of the factories visited during the field mission plant layouts were adequate for the production flows, and possible improvements would only marginally contribute to improved operations or cost savings.

Nevertheless, a few cases showed considerable defaults in the set-up of machinery, in warehousing and in the flow of semi-finished products between machining and/or assembling centres. At the same time, in these cases a relatively common phenomenon could be noticed: the uneven or sometimes disorderly production flow apparently influenced the quality of craftsmanship as shown by unproper welding gears, inaccurate machining or simply by the quality of painting of finished products. These examples showed again that the quality of products is influenced by properly planned and executed flows of products during production.

The plant operation consists in general of metal-forming operations (e.g. bending) and in some cases of metal-cutting or removing operations (e.g. milling, drilling and lathe operating). Overall, the machines were of good quality and were kept in good conditions. The age of the machinery indicated, however, that hardly any investment had taken place in the recent

TABLE 38

Value Added as a Shar of Gross Output, ISIC-383

ISIC-Group	1976	1977	1979	1980	1981
3831	47.9	49.8	49.7	43.8	44.5
3832	45.0	43.2	42.8	39.?	43.6
3833	52.6	53.3	45.5	38.7	50.8
3839	49.8	43.2	40.1	46.9	41.5
383	47.5	45.4	43.3	43.0	43.5

Source: Calculations based on Table 35 and 37.

TABLE 39

ISIC 3831 - Production Value and Value Added per Employee at Constant 1973 prices (in thousand of Soles)

	1976	1977	1979	1980	1981
Production value per employee	798	883	803	832	731
Value added per employee	382	440	399	364	325

Source: Calculations based on Table 35 and 37.

TABLE 40

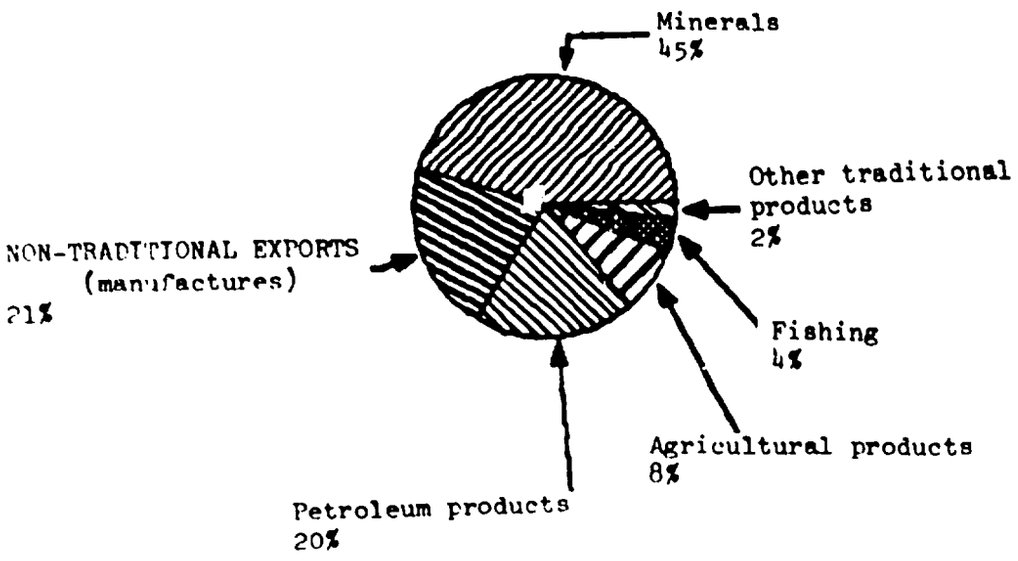
ISIC 3831 - Production Inputs
at Current and Constant Prices (1973) (in million Soles)

	1976	1977	1979	1980	1981
Total production inputs, current prices	1,573	2.261	6,684	11,497	14,431
Total production inputs, constant prices	888	988	1039	1116	885
Domestic inputs (%)	57.9	52.5	59.0	59.2	57.3
(Raw materials)	(36.8)	(27.2)	(27.9)	(32.2)	(26.2)
(Parts and accessories)	(0.2)	(0.3)	(0.6)	(0.1)	(1.3)
(Industrial services)	(12.1)	(16.0)	(19.8)	(15.2)	(17.8)
(Others)	(8.8)	(8.4)	(10.7)	(11.7)	(12.0)
Imported inputs (%)	42.1	47.5	41.0	40.8	42.7
(Raw materials)	(41.4)	(47.4)	(40.2)	(40.1)	(41.6)
(Parts and accessories)	(0.1)	(0.1)	(0.3)	(0.3)	(0.4)
(Others)	(0.6)	-	(0.5)	(0.4)	(0.7)
Share of domestic raw materials in total raw materials consumed (%)	47.0	36.4	41.0	44.5	38.6
Local content (1) (%)	68.1	63.4	67.1	66.4	67.2

(1) Calculation based on the formula applied by the Junta del Acuerdo de Cartagena: Apreciación global de la industria de bienes de capital del Perú, 1983.

Source: MITI.

STRUCTURE OF TOTAL EXPORTS, 1984



STRUCTURE OF NON-TRADITIONAL EXPORTS,1983

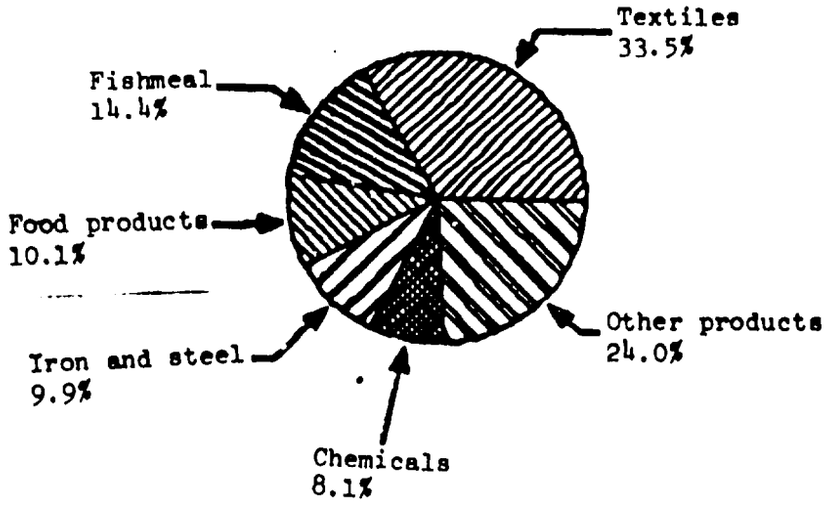


TABLE 41

Salaries, Wages and Other Personnel Costs
(in million Soles)

	1976	1977	1979	1980	1981
Salaries and wages, fixed personnel	427	565	1,321	2,079	3,591
Salries and wages, non-fixed personnel	11	19	67	92	187
Other personnel costs	67	93	261	310	560
Total, current prices	505	677	1,649	2,481	4,338
Total, constant prices*	285	296	256	241	266
Total employment cost/ employee (constant prices,* '000 soles)	133	133	99	101	122

* 1973 prices

Source: MITI

past. Most companies had installed adequate product-testing facilities, yet in some cases these important units were improperly equippped or used.

The enterprises visited all used subcontracting in their production operations, especially cast iron parts and components. In a few cases, the enterprises themselves had taken over orders to improve their capacity utilization, e.g. for the production of pressed aluminium or machined products. Statistically, subcontracting is included under the item industrial services, which accounted for 12 per cent of total production inputs in 1976, 20 per cent in 1979, and 18 per cent in 1981.

In view of this positive average picture concerning X-efficiency, the obviously most important factor reducing operational efficiency is the slack in demand. All companies suffer from the low utilization of their installed capacity due to reduced sales in the domestic market. While in normal years the domestic demand for switchboards is in the order of US $20 million, it has only been around US $3 million since 1981. As a result the average utilization of capacity is 15 per cent. In transformer production the capacity utilization is 40 per cent, in switchgear production (low and high voltage) around 20 per cent, in electric motor and alternator production approximately 60 per cent, and in cable manufacturing around 50 per cent.

4.2.7 Present Market and Market Potential

The general impression obtained from interviews with industrialists was that all enterprises tried to open up new markets to overcome the downward trend in their traditional domestic markets, and that they also made efforts to include new products in their range of production. However, in view of the overall low of industrial and public purchases, the market prospects for additonal products were considered to be reduced to a degree that even minor investments to start new product lines were not undertaken.

For 1977 and 1979, data are available on trade, production and apparent consumption of ISIC 3831 (see Table 42). Exports were relatively small in 1977, approximately 3 per cent of production, and they grew to approximately 7 per cent in 1979. Comparing these export figures for ISIC 3831 with figures provided by the World Bank for exports of ISIC 383, it shows that

ISIC 3831 accounted for 44 per cent of all exports of electrical machinery in 1977 and for 30 per cent in 1979. Thus, the contribution of the ISIC 3831 branch to the exports of the electrical machinery sector was significantly larger than the share of the branch in the production value of the sector.

Products with a presently high export share are alternators, power and distrubiton transformers, switchgears and cables. In the case of cable manufacturing, approximately 40 per cent of the production is power cables, the remainder is telephone cables, cables of building installations and non-insulated cables and wires, e.g. for electric motors and alternators.

However, the predominant part of production is normally sold to the state-owned electricity companies, Electrolima and Elektroperu. Because of the reduction in public investment programmes the sales to these clients were reduced cosiderably so that the manufacturers were forced to find additional markets. At present, the average distribution of sales of the enterprises covered in the field work is:

- approximately 50 per cent to the public electricity companies,
- approximately 15 per cent to industrial clients, mainly mining industry,
- approximately 35 per cent into export.

In October 1983, Electroperu devised a (revised) Master Plan, which assumes an annual growth rate of the demand for electricity of 6.1 per cent and for power generation of 6 per cent. These growth rates are above the projections of an UNDP/World Bank Study which assumes an annual increase of 5 per cent for power generations. In the short term (i.e. until 1986) even this figure might be difficult to achieve, however, due to the reduced investment programme of Electroperu.

The investment potential of Electroperu, holding company of all public power companies, is determined by its income through the sales of electricity and its access to external sources of financing. At present, both factors are at a critical stage: The income generated by the sale of electricity does not cover costs, as increases in the fees for electricity did not keep up with the rate of inflation during the last 10 years. In 1983, Peru had the lowest electricity prices in Latin America, an Electroperu had to use 65

per cent of its income for debt service as a result of its externally financed investment programme. At present, the situation is gradually improving through periodical increases of the rates.

At the moment, the availability of external financing is not only affected by the weak income situation of Electroperu, but also by the external financial problems of Peru. It can be expected that, with respect to Electroperu, these negative influences can be overcome, once its income situation stabilizes. There are indications that international financing institutions are willing to finance specific projects, once Electroperu is able to raise its local contribution.

Nevertheless, due to the nature of power projects, the investment decisions on new projects will only have a medium-term influence on the industry manufacturing power generation and transmission equipment, and they will therefore in the short term not contribute to improve the present low utilization of capacity. These factors have also influenced the performance of ISIC 3831 in the past (see Table 37) in contrast to the development of ISIC 3833, which only covers consumer goods.

Not affected by these constraints is Eletroperu's rural electrification programme, which receives support from several bilateral and multilateral aid institutions, e.g. the USA, the Federal Republic of Germany and IDB. At present, around 2,000 villages are without electricity supply, which affects 60 per cent of the population. To improve this situation an electrification programme has been established for a total of US $200 million, out of which US $25 million were spent in 1982.

Electroperu estimates that in the near future the following average number of hydropower plants will be installed:

- 50-500 KW plant capacity: 10-15 hydropower plants annually
- 500-5000 KW plant capacity: 3 hydropower plants annually
- more than 5000 KW plant capacity: less than 1 plant annually.

In the past years, Electroperu has continuously increased its technical planning capacity to cope with the requirements of implementing such a programme of small hydropower systems. As this programme is not affected

by adverse external financial problems and as its implementation is planned to proceed continuously, it represents a relatively stable demand for the domestic industry.

Isolated power generation, which presently contributes about one third to Peru's electricity supply, is an additional source of demand. Important industrial power producers are:

- mining and oil: approximately 770 MW installed capacity
- sugar and fish industry: approximately 200 MW installed capacity
- other industry: approximately 170 MW installed capacity.

There are no indications that there will be an extension of auto-producing systems with the exception of a mining project discussed at present. Yet many of the autoproducers, especially in the sugar industry, have considerable replacements, as there have been hardly any investments in the past.

4.2.8 New Products

New products with an apparently high sales potential in the power sector are:

- high voltage insulators
- forged or cast steel parts for fixing cables and insulators
- transmission towers
- steel pressure tribes and
- floodgate and canal locks.

All additinal products with a high market potential and prima facie good prospects for local production by the power sector, belong to ISIC groups other than 3831.

In all cases the production technology for the new products is relatively complex. A high quality of the raw material (e.g. steel, coaline) and precise manufacturing processes (e.g. rolling or forging of steel intermediates, casting) requires in come cases additional high precision machinery and equipment, and a highly trained workforce for finishing operations is needed, too. Furthermore, testing facilities and control standards will have to be created.

4.2.9 Recommendations to Promote the Production of Power Generation and Transmission Equipment

In view of the overwhelming importance of Eletroperu as a customer for the branch, future public procurement policies become a central issue in policies aiming at promoting the branch's development. In the past, domestic producers participated only to a small degree in public electrification projects. Going beyond supply problems of the branch resulting from its "infant" stage of development in general and some firm-specific inefficiencies in particular, it may be suggested that the following three issues explain a substantial part of the demand problem faced by the branch:

i) El agudo problema económico-financiero por el que pasa Electro-Perú que induce a comprar equipo extranjero financiado con créditos de exportación.

ii) El otorgamiento de contratos llave en mano en vez de licitarse en forma desagregada los diferentes componentes de los proyectos. Prácticamente, todos los proyectos en ejecución se rigen por la modalidad de contratos llave en mano.

iii) La desonfianza sobre la capacidad de los fabricantes nacionales respecto a su capacidad actual y potencial de producir equipo electro-mecánico en condiciones de costo y calidad satisfactorios.

A continuación se plantean una seria de sugerencias para ir superando estas dificultades:

ad (1) Es indispensable hacer de Electro-Perú una empresa economicamente viable elevando las tarifas eléctricas para que estas se acerquen a los réales costos de producción de energía y, por otro lado, haciendo los aportes de capital que ahora inevitablemente requiere, dada la política de tarifas subvencionadas seguida tradicionalemente y que ha descapitalizado a esta empresa.

Las tarifas de energía eléctrica son las más bajas de latinoamérica, excepto Colombia. En promedio la tarifa residencial es de 2.4

centavos de US $/KWH frente a 13, 12 y 11 centavos que se cobran en Panamá, Chile y Argentina respectivamente. La tarifa promedio industrial es de 3.8 ctvs. de US $/KWH, cuando en la mayoría de paises latinoamericanos fluctua entre 5 y 7 centavos

Para llegar a cubrir los costos according to one estimate las tarifas vigentes necesitarían un reajuste en términos reales de 80%. Actualmente están por debajo de los costos operativos, que en un gran número de ciudades importantes y pequeños poblados servidos por centrales termo-eléctricas, demandan alrededor de 8 centavos de dólar solamente para combustible y lubricants.

De mantenerse las tarifas actuales according to one estimate el Estado tendría - que dar en los próximos diez años un monto de $2,000 millones de dólares en subsidios a las empresas de servicio eléctrico.

ad (ii) Al igual que en las licitaciones de CENTROMIN-Perú (Empresa Minera del Centro) en que se desagregan los diferentes componentes de cada proyecto, Electro-Perú deberá licitar los proyectos de elctrificación por partes.

It appears that la aplicacion del Reglamento de Construcciones vigente creates substantial problems for las empresas de ingeniería y construcción civil nacionales al pedirles requisitos de experiencia y fijar los montos mínimos de contratación que las ponen fuera de camino desde el inicio. Ellas terminan haciendo las obras - por partes pero en calidad de sub-contratistas, produciendose el circulo vicioso de que no se les da las obras di rectamente por que nunca han tendio experiencia previa contratando para obras completas de gran magnitud, y nunca obtienen dicha experiencia por que no acceden a la contratación directa en las mismas. De esta forma las empresas nacionales no logran hacer curriculum para presentarse en las grandes licitaciones dentro del país y menos en el extranjero.

ad (iii) One approach towards a solution of this problem might be to hacer funcionar en forma efectiva la Comisión de Concertación Eléctrica.

> El objetivo de esta Comisión es que representantes del sector público y de las empresas productivas se reunan a fin de que discutan sobre las posibilidades y formas de incrementar las compras de equipos locales por las empresas empresas estatales del sub-sector eléctrico, particularmenta Electro-Perú. This aspect concerning improvement in the institutional framework will be taken up in section 4.3 and will be discussed with a view of some complementary measures required to facilitate its realization.

It should be re-emphasized, though, that these improvements of the insitutional framework would need to be complemented by steps to improve product quality and facilitate product upgrading. Policies encouraging foreign investment and technology transfer through licences are equally important as support to the own efforts of industry in this direction.

All of the Peruvian companies visited had testing laboratories, and most of them were at least adequately equipped for the current testing requirements of the industry. Nevertheless, in the prodution of electric equipment it is quite common to text equipment under extreme load conditions. These facilities are very costly and would, especially under the present difficult situation of the industry, hardly be justifiable for any of the enterprises.

In contrast, a common facility for the power utility companies and for the producers of electric equipment might prove to be an adequate investment and a cost saving solution to strengthen capacities according to requirements. It can also stimulate the industry to take up additional production of components and equipment, especially in the range of medium and high voltage. The institution which appears most appropriate to further investigate this concept is ITINTEC.

One of the most important areas to be possibly covered by ITINTEC is the design of norms and standards. These should be compulsory both for the power utility companies and the industry. The determination of standards should be combined with regional efforts by the Junta del Acuerdo de Cartagena, for which ITINTEC is responsible in Peru.

4.3 Mecanismos para Incrementar la Participacion de la Industria Local de Bienes de Capital en la Mineria y en los Proyectos de Electrificacion

In the previous sections, the structure, performance, prospects and specific constraints of the branches producing capital goods for the mining and electricity sector were analyzed separately. The issues to be raised in this section are equally important for both branches. Firstly, they address concepts relevant for the whole capital goods sector. Secondly, both branches depend largely on sales to public or publicly ontrolled customers, which results both in common problems and in common requirements for dealing with these issues.

At the core of the suggestion to follow is the implementation of an efficient "buy national" policy as a short term measure to activate demand for domestic producers. This policy, however, would need to be designed such as not to provide disincentives to efforts aimed at meeting the requirements of international competition. Efficiency in this context involves two issues.

Firstly, an efficient "buy national" policy should not be considered and designed as a complementary step to a return to substantially higher levels of protection. On the contrary, it should substitute for this by directly raising demand for domestic producers instead of diverting demand through raising protection. In fact, the adherence to protection levels lower than in the 1970s would reduce the cost of such "buy national" policy by enabling national producers to use inputs at prices not too much above world market prices.

Secondly, "efficiency" in this context requires to maintain as many as possible elements of the market-economy model in this approach. This implies that "buy national" should not be a rule which public clients would have to follow irrespective of cost and quality differences between national and international offers. "Buy national" requirements should not be, therefore, forced upon public customers, but they should be tied to realistic preferential margins for domestic producers. Coupled with improvements in the institutional framework and efforts to solve sector specific problems as analyzed in the previous sections, such a "buy national" policy would in fact

combine the efficiency increasing efforts to adhering as much as possible to market principles with the need of domestic producers for "infant industry protection", or better, "infant industry attention".

In more detail, amongst the central issues would be the following:

1. As previously indicated, the role of the Comisión de Concertación Eléctrica should be revitalized. Similarly, the establishment of a Comisión de Concertación del Sector Minero is recommended. In both commissions, the industrial branches/sectors, the major public customers[1/] and the Government might be represented.

   Una comisión de concertación de este tipo, debe analizar, los requerimientos en corto y medio plazo de los equipos y las posibilidades de ser fabricados por la industria nacional, tomando en cuenta tanto aspectos económicos como técnicos.

   Tambien, aun cuando no se haya producido antes un bien similar en el pais, la Comision podra analizar si es o no factible producirlo localmente.

On the bais of performance requirements and supply constraints identified in this forum, it is suggested that a group of independent experts appointed by the Government would review the medium and long term investment requirements of both the electricity and the mining sector in view of recent developments. On this background the possibilities of the domestic industrial sector to serve these demand requirements should be assessed on a product by product basis, considering both its present potential and its needs for technological and organizational upgrading in order to increase this potential. It is recommended that these tasks should be performed using both domestic (possible ITINTEC) and international technical expertise (with the help of multilateral and bilateral technical assistance funds).

It is recommended that on the basis of the findings of this independent expert group the detailed elements of a "buy national" policy should be

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1/ In the case of mining, however, also the participation of Southern Peru Copper Corporation would be essential.

specified, using realistic preference margins for domestic producers. In order to provide incentives to meet international competition it is recommended to preannounce a schedule for decreases of this margin over time.

2. To facilitate efforts of domestic suppliers to start the production of new products without increasing excessively the risk of domestic customers, as a complementary measure it is recommended to establish a performance guarantee scheme (for instance, incorporated in FONCAP) which would reduce the risk of customers purchasing items which were not previously manufactured in the country. The funds required for this scheme might be raised, e.g. by allocating a fraction of present import duties on power generation equipment and mining machinery to this insurance scheme.

3. As to public tenders financed by international organizations, it should be considered that $1 earned by a domestic producer who obtained the contract would have the same value as $i earned by exportation. Consequently, it should be considered to grant domestic producers bidding for internationally financed tenders the same tax exemptions and the same incentives which they would receive in the case of exporting (and which, in fact, foreign exporters bidding for this tender would receive in their countries). As, however, a CERTEX type subsidy might not be acceptable to international donors, it should be considered to extend the system of temporal admission of duty free imports (draw-back scheme) to domestic producers bidding for internationally financed tenders.

4. In a corresponding way and by the same reasoning, domestic producers bidding for internationally financed tenders should be granted exemptions from present labour legislation similar to the ones to which exporters of non-traditional exports are entitled.
La Ley de Exportaciones no Tradicionales permite que las empresas exportadoras firmen contratos the trabajo a plazo determinado, al término del cual cesa el vínculo laboral, estableciendose casos indemnizatorias en caso de despido anticipado. Este régimen, se aplica también de manera similar para otras actividades como la construcción civil.

5. Se requiera terminar de reglamentar la Ley de Industrias aprobada en 1982 por el Parlamento en lo referente al Capítulo de la Protección a la Industria Nacional, en sus artículos 29 al 33. Estos artículos establecen diversas normas que deben seguir las empresas licitantes en concursos de caracter internacional. Asi, se señala que, incluso en regimenes de exoneración de arancelas de importación, para efectos de comparación con los productos nacionales los productos extranjeros deberán valorarse incluyendo los aranceles que pagarían si no existiese la exoneración correspondiente, excepto en los casos de financiamiento de organismos internacionales. Asimismo, se establece que en cade licitación, el Ministerio de Industria, Turismo e Integración deberá señalar el porcentaje mínimo de participación de la industria nacional; ce obliga tamien en los proyectos "llave en mano", a adquirir los components nacionales que cumplan con los requisitos de las bases; se establece que los precios de los componentes ofrecidos por los postores extranjeros, no podrán ser inferiores a los que rigen en su pais de origen; se fijan normas técnicas a los productos importados. En general se busca que las bases de las licitaciones no incluyan condiciones que excluyan la posibilidad de concurrir a los productos nacionales. En case de incumplimiento del alguna de estas normas, le Ley prevé la nulidad de la licitación.

Gran parte de estas disposiciones no han sido aún reglamentadas por el Gobierno. Se ha creado una Comisión Consultiva de Adquisiciones que revisa las licitaciones ante un reclamo de cualquier industrial nacional, y determina si cabe o no la nulidad de la misma. Sin embargo, esta Comisión solo tiene autoridad para resolver los asuntos tratados en el artículo 29, es decir, lo referido al margen de preferencia arancelario que debe tener el producto nacional, pero no puede ver los otros aspectos mencionados. Por lo tanto, deberían de ampliarse las funciones de la Comisión para resolver también los otros temas, exepto el referente al Artículo 30 de la Ley de Industrias, para lo cual debe instalarse otra Comisión especializada que determine el grado de participación mínimo de la industria nacional en cada licitación pública. This would be done using the results of national andf international expertise in the framework outlined above (pont 1). Ademas la Comision Consultiva de Adquisiciones no solo debe actuar como revisora, una vez que ha concluido la licitacion, sino desde un comienzo, analizandose y pronunciandose respecto a las bases de la licitacion, para no trabar su posterior desarrollo.

6. In addition to these measures aiming at the establishment of rules for public procurement policies, it seems essential to allocate sufficient resources to the Fondo de Financiamiento de Bienes de Capital (FONCAP). Este fondo se ha venido financiando mediante aportes frecuentes y limitados del Banco Central de Resesrva (BCR). Continuamente los miembros del Comité de Bienes de Capital de la Sociedad Nacional de Industrias han tenido que dedicarse a hacer gestiones para que el BCR destine parte de los recursos del Programa Monetario hacia el FONCAP. Tales limitaciones no solamente ha inducido a que se pierdan interesantes oportunidades de venta, sino que, fundamentalmente, crea une sensación de inseguridad y desconfianza en los fabricantes de bienes de capital, la cual sería un impedimento definitivo para que se decidan ha efectuar las inversiones en el desarrollo de sus empresas para aprovechar, al menos en parte, la encorme demanda de equipos que se derivarán de la realización del Plan Maestro de Electricidad y de la apertura de nuevas minas.

In principle, and also with a view to the need for monetary stabilization, it does not appear to be advisable to base the financing of FONCAP on the creation of money by the Central Reserve Bank (BCR). Instead, various alternatives to provide "real" resources to FONCAP should be analyzed. One would be to discuss with the Inter America Development Bank the possibilities to extend its present programme of financing regional trade of capital goods also to domestic sales. Secondly, an alternative to be studied to strengthen the FONCAP, consists in its financing (as in Columbia) through bonds in the capital market instead of reaming to the Central Reserve Bank's monetary programme.

Finally, similar to the case of the insurance scheme for purchasers of new products, part of the revenues derived from existing import tariffs on caital goods might be allocated to FONCAP.

Clearly these three options are not at all mutually exclusive and a combination of them might turn out to be the most feasible solution. Whatever financing model should be applied, major emphasis should be put of securing a continuous and stable flow of resources to FONCAP in order to provide domestic producers a sufficiently stable planning horizon.

These measures to provide a sufficient flow of resources to FONCAP, however, would need to be complemented by steps ensuring an efficient use of these resources. In the past, FONCAP granted credit at interest rates which sometimes resulted in an effective subsidization of sales of domestically produced capital goods. Clearly, although it may be justified to grant preferential credit terms to purchasers of such capital goods, an effective subsidization does not appear to be advisable. Instead, real credit terms similar or even marginally higher than the ones being offered to exporters should be aimed at.

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E.p.56 Large mining includes those companies with sales of more than US $100 million per year. These are:

- Southern Peru Copper Corporation, with two mines and a foundry.
- Centromin, with six mines, a foundry and a refinery.
- Minero Peru, with one mine and two refineries
- Himo Peru with one mine.

The first company is a foreign company, the other three are state-run companies. Altogether they have a capacity for ore concentration of 90,000 metric tons/day, which is equivalent to 75 per cent of all Peruvian capacity.

Medium-sized mining includes 72 private Peruvian companies, 3 state-run companies ad 6 foreign companies, selling more than US $million/year. They make up for 90 per cent of all ore-concentration Peruvian plants, even if their ore concentration capacity is altogether of 27,000 metric tons/day only, i.e. 25 per cent of domestic capacity.

Small-sized mining includes more than one thousand small producers, selling less than US $1 million/year. They are characterized by not having own ore concentration plants. They limit themselves to the extraction of the mineral and they sell it to those companies which further process it.

English 79

i) The acute economical/financial problem which faces Electro-Perú, leading it to buy foreign equipment through financing with export credits.

ii) The granting of turnkey contracts instead of offering for tender the separate components of the project. Practically, all actual projects are dealt with through turnkey contracting.

English 80

iii) Lack of confidence in the domestic manufacturer's ability with respect to their actual and potential capacity to produce electro-mechanical equipment at a reasonable price and satisfactory quality.

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Following is a series of suggestions to overcome such difficulties.

ad (1)

It is essential to help make Electro-Perú an economically-viable form by raising electric-power. Tariffs to match real production costs, and through a badly-needed capital injection after so many years under a system of subventions for electrical power-tariffs which in the end has de-capitalized it.

Electric-power tariffs are the lowest in Latin America with the exception of Colombia. The average residential tariff in US $0.024/KwH versus US $0.13, 0.12 and 0.11/KwH charged respectively in Panama, Chile and Argentina. The average industrial tariff is US $0.038/KwH versus between US $0.05-0.07/KwH in most Latin American countries.

In order to make up for actual costs, present tariffs would, according to one estimate, need an adjustment of 80 per cent in real terms. Nowadays such tariffs are below operative costs which are of approximately US $0.08 only for fuel and lubricants, in a great number of important cities and small towns with thermo-electrical power stations.

English p. 81

According to one estimate, should the present tariffs be kept, the State would have to pay approximately US $2 billion during the next ten years in the form of subsidies to the power companies.

ad (ii) As in the case of CENTROMIN-Perú (Empresa Minera del Centro) in which each project is disaggregated into its components for bidding purposes, so should Electro-Perú offer its projects for tender.

It appears that the application of the present Building Regulations creates substantial problems for domestic civil-engineering and building firms by setting minimum experience requirements and establishing minimum contracting quotas which excluded them from the start. In the end, such firms do the job, but as sub-contractors, due to the vicious circle where due to their lack of experience with large-scale projects, they are never asked to do the job; and they never get "the experience needed" because they are directly never asked to do it. Thus, domestic firms never achieve a track-record

English 82

to be presented at important biddings within the country, and even less abroad.

ad(iii) A possible approach in order to find a solution to this problem might be to get the Comisión de Concentración Eléctrica to work effectively.

This commission aims at getting together representatives of the public and productive sectors, in order to discuss the ways and possibilities of increasing the share of domestic equipment, particularly of Electro-Perú, in public electrical buying.

English

84 4.3 Mechanisms to increase the share of the domestic capital-goods industry in mining and the electrical-power projects.

English

85 1...

A coordinating commission of this kind should analyze short and medium term needs of equipment and the possibilities to have it made by domestic industry, taking into account the economic aspects as well as the technical ones.

Even if a similar good has not been produced before within the country, the commission will be able to analyze if its local productions would be viable or not.

E. 87 The signing of fixed-term labour contracts, at the end of which the labour link is cut establishing severence pay tariffs in case of previous dismissal, is allowed by the Non-traditional Exports Law. These regulations apply as well in a similar way to other activities such as civil-building.

5 It is necessary to complete the regulations to the Industries' Law approved in 1982 referring to the Chapter on Protection to Domestic Industry, specifically chapters 29 to 33 which establish various rules to be followed by domestic firms in international biddings. Thus, it is stated there that even within a system of import-tariff exemption, in order to compare national products with international ones, the international products should be value adding the tariff

such products would have to pay should there be no exemption, excluding the cases where there exists financing by international organizations. It is established, as well, that the Ministry of Industry, Tourism and Integration would have to establish for each bidding, the minimum participation of domestic industry; turn-key projects are obliged as well to obtain national components which meet basic requirements; dumping practices are not allowed for foreign bidders; and import products must meet technical standards. Basic bidding rules try generally to avoid conditions which would exclude possible national bidders. And in the case of non-compliance with these rules, the Law forsees the non-validity of the bidding.

The Government has not yet regulated many of these provisions. A Consulting Commission for Purchasing (Comisión Consultiva de Adquisiciones) has been formed to revise offers for tender should a claim from a domestic producer emerge, and rules the validity or non-validity of the claim. Nevertheless, the Commission has only authority to rule on issues discussed under act 29 i.e. the ones referring to the preference tariff margin which should have the domestic product, but it cannot go through other aspects. Therefore, the Commission's functions should be broadened to include as well all other issues with the exception of act 30, for which another specialized Commission is needed in order to establish the minimum level of participation of domestic industry for each public offer for tender. This would be done using the results of national and international expertise in the framwork outlined above (pont 1). In addition, the Consulting Commission for Purchasing should not only be a reviser once the bidding is over, but should from the start, analyse and comment the basis of the offer for tender, in order not to hinder its .....development.

6 In addition to these measures aiming at the establishment of rules for public procurement policies, it seems essential to allocate sufficient resources to the Fondo de Financiamiento de Bienes de Capital (FONCAP).

Frequent but limited financing from the National Central Bank (Banco Central de Reserva, BCR) has maintained this Fund. The members of the Capital Goods Committee from the National Society of Industries (Comité de Bienes de Capital de la Sociedad Nacional de Industrias, have had to push for the Central Bank (BCR) to make available to FONCAP part of the Monetary Programme's funds. Such limitations have led not only to a loss of interesting sales opportunities, but to create a feeling of insecurity and lack of confidence between capital goods manufacturers, which would be a real hindrance for them to invest in developing their own industry in order to take advantage, at least partially, of the enormous increase in equipment demand derived from the accomplishment of the Electric-Poswer Plan (Plan Maestude Electricidad) and the opening of new mines.