OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

20923

Distr.
RESTRICTED

CPD/R.2
4 January 1995

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Original: ENGLISH

ARGENTINA

INDUSTRIAL SECTOR STUDY

V.95-50025

This document has not been edited.

The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat at the United Nations concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries.

Mention of company names and commercial products does not imply the endorsement of the United Nations Industrial Development Organization (UNIDO).

CONTENTS

PREFACE

This Industrial Sector Study of Argentina has been prepared by the Industrial Development Review Unit within the work programme of the Country Strategy and Programme Development Division of UNIDO. The document is intended for in-house use as a background material for industrial policy dialogue, programme development and in-depth subsectoral analysis of investment opportunities and for identifying crucial areas requiring technical assistance.

The Study comprises three chapters. Chapter I analyses the macroeconomic context of industrial policy environment, with particular reference to trade and investment climate in the transition phase. Chapter II examines the structure and performance of the manufacturing sector, focussing on growth, employment, productivity, ownership, investments and trade patterns. Chapter III elucidates the key industry branches, explaining the resource base, recent trends in production, exports and imports, investment opportunities, promising products areas, constraints and prospects across the disaggregate segments of manufacturing.

This preliminary version was drafted by Julio Berlinski as UNIDO consultant with substantial contributions from C. Romero and J. Cardinale. The views expressed in the document are those of the authors. UNIDO does not accept responsibility for the correctness and completeness of information and analyses contained in this preliminary draft which has not been formally edited.

BASIC INDICATORS I: THE ECONOMY

Population (1992) : 33.1 million

Annual growth rate of population (85-92) : 1.3 per cent

Labor force (October, 1992) : 11.5 million

GDP (1992) -current prices- : 226,637,598 thousands of Pesos

GDP per capita (1992): 6,847 Pesos

	1987	1988	1989	1990	1991	1992
Growth of GDP (%) -index 1986=100-	102.6	100.7	94.4	94.5	102.9	111.8
Structure of GDP (%) -1986 prices- :						
Agriculture	7.4	8.3	8.0	8.9	8.5	7.8
Mining	2.1	2.3	2.5	2.7	2.3	2.3
Manufacturing	27.2	26.4	26.1	26.6	27.4	27.0
Construction	6.7	6.6	5.3	4.5	5.0	5.6
Exports (millions US$):					11,978	12,235
Principal exports (US$ million, 1991):						
Primary					3,122	
Manufacturing					8,856	
Agricultural origin					5,402	
Non-agricultural origin					2,799	
Fuels					656	
Imports (1991) :					8,275	14,872
Principal imports (US$ million, 1991) :						
Primary					880	
Manufacturing					7,395	
Agricultural origin					714	
Non-agricultural origin					6,359	
Fuels					321	
Current account deficit :					2,804	8,361
International reserves (Net change) :					2,588	3,735
Outstanding external debt -medium and long term- :					60,000	60,000
Consumer price change:	131	343	3,080	2,314	172	25
Exchange rate (Peso equivalent to US$=1, since Apr.91)						1.0

BASIC INDICATORS II: THE MANUFACTURING SECTOR

Manufacturing value added (1992)
-current prices- : 49,541,123 thousands of Pesos

MVA per capita (1992) : 1,496.7 Pesos

Manufacturing employment (Census Apr.'85) : 1.4 million

Growth of MVA (%) :	1987	1988	1989	1990	1991	1992
-index 1986=100-	101.8	96.8	89.7	89.8	100.3	110.2
Structure of MVA (%) :						
Foods	22.7	23.0	24.2	24.5	24.3	
Textiles	11.3	12.0	12.5	11.5	11.9	
Chemicals	24.4	24.8	25.0	28.2	26.3	
Machinery & equipment	24.5	23.3	21.2	19.6	20.8	

Share of manufactured exports in total exports (1991) : 73.9 %

Structure of industrial imports (%) :	
Agricultural origin	9.7
Non-agricultural origin	86.0
Fuels	4.3

Wholesale price change by manufactured goods :						
Domestic production	123	415	3,383	1,699	115	5

SUMMARY

Chapters I and II are devoted to the discussion of the Argentine policy environment and the structural characteristics of manufacturing industry. The Argentine economy is today in a transition towards a less regulated economy, concerning trade policy, industrial promotion and state involvement in the production of goods and services. But, on the one hand, the ease of the transition between an old and a new policy regime is a difficult question, not only on technical grounds but also looking at the political economy of the adjustment; and, on the other hand, it is too early to evaluate the results.

During the 70's, industrial promotion was carried out using trade and industrial policies aimed at increasing private rates of return. The anti-export bias introduced was intended to be compensated with an early resort to export promotion policies. This bias reduction helped in having a greater exposure in world markets, but given the higher profitability of sales to the domestic market this introduced a counter-cyclical growth pattern in export performance; i.e. trade balances were worse with increases in domestic activity due not only to decrease of exports but also to an increase in complementary imports.

In Argentina, the experience of the 80's has been of foreign debt services leading to the need for a trade surplus and implying the use of trade policies cum export promotion, but the outcome was of a poor overall performance. Policies reflected the export drive of non-traditional goods which was not enough to introduce higher

diversification. Policies referred to consisted of several devices, among them, rebates, draw-backs, financing of export's working capital at subsidized rates, etc.. But exports were not diversified to the extend expected by the amount of public funds involved in those subsidies.

During the 80's variability of growth rates was the main cause of changes in productivity with a declining trend in employment; the data for growth period (1983-86) confirms increases higher than average productivity in Chemicals and Foods; in the next recession period (1987-90) more than average decline in productivity corresponded to Machinery, Non-metallic minerals, Wood and Textiles, which in the 1991/92 recovery period were those with a better performance. Comparing intercensal statistics, between 1973 and 1984, there has been an increase in capital intensity in manufacturing in several sectors. Today, this might be reinforced for new investments, since the transition to more flexible production schemes would affect the role of technology, reducing the scope of domestic firms regarding adaptation. Investment of mid 80's were concerned with the completion of projects started in earlier dates involving mainly Paper, Chemicals and Steel industries; others were natural resource based industries like (Fuels, Vegetable oils, Milk); finally, investments were made by those which benefitted from special regimes like the Automobile and Electrodomestic industries. Concerning ownership, multinational corporations were important in the local market since early industrialization efforts; presently, with the change in

regulations they could also participate in the privatization program of public services. Regarding foreign trade, in the 80's the evidence show that manufacturing net exports of agricultural origin were positive and those of non-agricultural origin negative.

Present sources of growth are based on consumer goods industries and exports of natural resource based sectors, but with only Vegetable oils having in 1992 a high net exports basis. For others, the important matter was the identification of a niche in the domestic market, either producing goods and services, or related to several of the privatization initiatives undertaken since 1991; i.e. agents tried to identify a protected market space. Policy changes introduced by the emergency law, the deregulation decree and changes in trade policy were being reinforced by the real appreciation of the exchange rate. The effect of the latter was an encouragement of imports and a desincentive for exports. On the import side some were compensated by trade policy reforms of 1993 resorting to specific tariffs and non-tariff instruments, demanded on a sectoral basis. This selectivity seems to be related to employment problems like in textiles, it would encourage a lobby activity unless some transparent rules are set. For existing firms, the record of volatility of growth and of policy regimes implied a strong inertia in starting restructuring activities. During this transition, the "acquired rights" of industrial promotion benefits for old projects might have been used by the firms as a buffer. The introduction of foreign actors either buying existing firms or investing in new ones, within an existing

activity, showed a different "prospective yield" of the assets by the actors involved.

Another source of growth potential is Mercosur. Argentina and Brazil were liberalizing their trade regimes unilaterally, this might result in transforming them in a source of competitive manufacturing exports to the area and to the rest of the world. But, to compensate trade diversion, it is necessary that the change in the incentive system provides cost reductions related to economies of scale, expecting that intra-industry trade would be important in products intensive in natural resources, technology and human capital.

In chapter III several industrial branch profiles are presented; data on the situation of sectors, main producing firms have been obtained from the sources indicated in each case; they have been updated through monitoring of information concerning the privatization process and the restructuring decisions and actions of the firms. The following paragraphs provides a brief summary of each case.

Milk and dairy is a natural resource based activity where the productivity of milk production is high, but where safeguards were applied to internationally subsidized milk. Regarding the industry, six firms account for about half the market and where exports are marginal regarding the domestic market. Most observers state that the great change for Argentine milk products industry in the 1990's has been the increase in domestic consumption. Given this and the fact that some firms were undergoing financial restructuring, no

local firm seems to have shown a serious strategy to counteract moves by multinational firms in the domestic market and in Mercosur.

The vegetable oils sector: participation of this industry in the country's industrial product, in industrial production and in industrial and total exports, is currently very high. This is the consequence of very fast development in recent times, mostly in the last two decades. On the other hand, the industry has encountered some problems in the 1990s, although, given its international competitiveness and export orientation, such problems are different from those of other branches now facing the competition of imports. For this industry the relevant market is the international market and more specifically what happens in production and trade in the US, Europe and Brazil. Argentina is the lowest cost producer of certain products for this market but the overall determination of competitive conditions and prices takes into account production, protection and subsidies elsewhere. Higher cost producers of the agricultural inputs (the US and the European Union) subsidize their agricultural production, tax foreign imports or subsidize exports, each one of them in its own way.

Textiles and garments, at the beginning of the 1990s the Argentine textile industry represented 12% of the country's industrial product, and employed around the same proportion of industrial workers. It is perhaps one of the oldest industrial branches, but it had a strong development since the 1930s. As a protected industry it developed without having to face external

threats but it has recently had to come to terms with strong foreign competition while the sector's reaction possibilities seem limited. It would be dangerous to ascribe those difficulties only to the sector's agents own shortcomings or, only to external forces and Government policies. It is known however that Argentine textile industry, sharing perhaps some of the problems of the more advanced, high cost countries vis-a-vis the low wage and/or high productivity of new exporters, but not having all the resources of the more advanced countries to adapt to such competition, has today some real problems.

In Pulp and paper, Argentina and the Mercosur countries are particularly endowed for forest implantation, but this requires large investments. The Manufacturers' Association complained about trade liberalization, because a large increase in consumption was supplied by imports in spite of capacity availability. In the meantime, a quota system for some papers controlled the inflow of imports to a small proportion of the 1992 market. Here, the only apparent successful restructuring has been made by a large firm under a combination of foreign ownership and new business and financial management. Discussions of options oscillate, on the one hand, between orientation to the international markets demanding large investments and perhaps not progressing beyond forestation and very large pulp making; and, on the other hand, pointing at the niche specialization strategy, which requires the identification of opportunities.

Petrochemicals is a natural resource based activity where

promotional regimes and different incentives were used to foster sector development, but perhaps the most important incentive was the provision of inputs at prices strongly lower than international levels. Also, under this regime, local enterprises achieved a participation that is unusual in such sectors, in activities like handling technologies, negotiating in international markets, etc.. The elimination in 1991 of this single most important incentive regarding prices of raw materials, affected mostly the profitability of the activities at the beginning of the chain, since in the past the input subsidy was not transmitted along the different production stages. While there has been some safeguard actions, domestic prices were more in line with international levels. Production did not change very much and increased consumption was supplied by imports. Also, financial restructuring together with privatization of several plants introduced uncertainty as to the control of the stages of production.

The tires industry: in this case a situation is found in which there are questions of imperfect competition, divergent interests according to type of company, and questions of efficiency related to size of plant and specialization in the context of an economic integration process. The point of presenting this analysis was to show how a conflictive situation that had an (admittedly unstable) solution in a closed market, and could even have one in the context of negotiated liberalization, changed drastically with wider liberalization. In the case of the tires industry, information as is currently available suggests that plants in Argentina are small,

not up to date and probably with excess capacity by at least their multinational owners, given the capacities they own elsewhere; thus, it is not surprising to find that higher technology products such as radial tires are moved to Brazil.

The cement and ceramic tiles industries: for the cement industry, basically a non-traded product, the further increase in its sales in the near future will depend on the rate of growth of construction under current and future government policies; also, on the prospects for competition in that market starting from the currently very high concentration level; finally, it is important the balance between foreign entrants (or national firms with foreign technical support) and former branch leaders. For the ceramic tiles industry, given the competition between several national firms, foreign owned firms and imports, the overall market development will depend on how the national companies maintain or improve their positions, specially in higher end products in which design and quality are most important.

Steel: the industrial structure of the industry has not been substantially modified by the changes in public policy; perhaps the exception might be a privatized small plant now oriented to the production of special steels. Today, as in the 80's, steelmaking capacity is practically accounted for by four integrated operations organized around the reduction facilities, plus the contribution on one semi-integrated (no ore reduction) facility, plus smaller and specialized rolling mills. Also two of the groups invested in other areas such as energy, agriculture, retirement pensions,

telephone, related to deregulation and privatization; are these only risk dive ·ification strategies or a search for new profitable business to balance losses in manufacturing.? But several of the firms have announced investments, one financed by the IFC. Another firm, after safeguard actions controlling competitive imports in flat products, would concentrate in upgrading the former state-owned firm expecting to increase productivity.

Farm machinery: the requirements and technical changes of agricultural production force the farm machinery industry to keep up with changes in agricultural producer's needs, even when equipment sales are low and profitability is poor. Local producers of agricultural equipment do not just blame external circumstances for their troubles, they tend to accept that they must reduce costs and broaden their markets; a few of them report having made some investments.

Automobiles: A largely unexpected revival of that sector based on overall policies encouraging spending and the new rules for the vehicle-making sector towards more international exposure might be successful. The objectives of the 1991 regime seem adapted to the fact that its is satisfactory to produce cars if not on international scales at levels not reached before, and sell them at prices higher than the international levels (especially compared with Japanese prices). Furthermore, some operational goals of reducing product variety and of launching new models in Argentina at the same time as in the country of origin are important. Also, there is now a components plant and engine plant established at

scales and technology to become world suppliers.

I.THE MACROECONOMIC AND INDUSTRIAL POLICY ENVIRONMENT

This chapter is intended to provide a framework for a more comprehensive understanding of the detailed discussions made later on.

In the 30'S, limits to the expansion of the agricultural frontier and the international crisis put an end to the expansion of the agro-exporting model. In the next period up to the 50's, the import substitution industrialization (ISI) model based its strength in the so called light industries producing consumption goods (Foods, Textiles, Garments), to this some Electrodomestic industries and some Metallurgic and Capital goods activities were added. A second period started in the 50's up to the seventies, with an important development of industries like Automobiles and Petrochemicals. Growth in capital accumulation and employment was a characteristic of this period with and important participation of transnational enterprises. They introduced new technologies, adapting to the local market an organization of production which might be described as a type of fordism, with high diversification of production, short runs and high integration within the plants. In the 60's an export promotion policy started to be concerned with the inward orientation of the manufacturing activity. At the same time, the backward integration of inputs of generalized use like steel, aluminum, paper, petrochemicals were promoted, directly or through the public sector procurement of some of those activities.

The turning point of the ISI model might be dated in the mid 70's with the exhaustion of its growth potential, reinforced by the

economic policy started in 1976 which changed the orientation of the incentive system. This program was tilted towards market oriented signals on trade, industry and financial liberalization policies. Up to 1978 the program resulted in an increase in domestic absorption, later on industrial activities competing with imports suffered the impact of exchange rate overvaluation and high interest rates.[2]

After this overview, the next sections will discuss recent economic trends, economic structure, the policy environment and industrial policy.

A.RECENT ECONOMIC TRENDS

The policy packages implemented during the 80's are the outcome of international terms of trade moving against Argentina and the need of providing new sources of growth given the apparent exhaustion of the ISI model. As known the ISI model was based in strong incentives offered through trade policy, tax holidays and subsidized interest rates, basically for sales to the domestic market, the problem was then how to change the profit equation of the firms. During that period, the Austral Plan was the only one of the initiatives taken place which intended to increase exports without import liberalization. The outcome was poor, due to an increase in domestic consumption and a negative effect of the terms

---

[2]For further discussion see Kosacoff, B., (1993),"La industria Argentina: un proceso de restructuracion desarticulada", in Kosacoff, B., Editor, (1993), El desafío de la competitividad (La industria Argentina en transformación), Cepal/Alianza Editorial.

of trade. In any case, concerning trade liberalization, after the early initiative undertaken by the end of 1978 and reverted strongly in mid 1982, all the programs undertaken had some element of trade policy rationalization. This was done by reducing the level and dispersion of effective rates, and/or dismantling quantitative restrictions which in several cases were the actual instrument of protection, then introducing more transparency in the policy rules.

Looking at the aggregates, the economy of Argentina showed during the 80's, as mentioned, the effect of the different policy packages applied as well as exogenous changes in the terms of trade. All of them resulted in a high volatility of the rates of growth, compared with those of the early 70's. But as is usually the case those aggregates do not allow the understanding of the sources of growth.

The balance of trade during the 80's showed a relative low exposure of the economy in world markets (around 15% in growth years) as measured by the ratio of exports and imports to GDP at current prices. This index remained low despite the changes in policies; the high share of 1989 suggested that trade was counter-cyclical to domestic activity, a hypothesis which will be looked into in chapter II. Comparing 1980 and 1992 (Table II-1) exports in current dollars increased almost steadily from 8 billion to 12 billion US dollars, while imports after the high level reached in 1980 (10.5 billion) increased to around 15 billion in 1992, but in between the levels reached were around 4/5 billion dollars. The

outcome was a change in the balance of the Merchandise account from -2.5 billion in 1980 (similar in 1992) to positive figures between 2 and 5 billion dollars in those intermediate selected years. The negative current account balance, amounting to 8 billion dollars in 1992, was also the outcome of the negative effects of real and financial services, especially of net interests.

After 1980, foreign terms of trade moved against Argentina reaching the lowest values in 1986/87 compared with the highest points of the early 1980's (Table I-1). Given the higher agricultural resource content of exports and the manufacturing intensity of imports, those foreign terms of trade were compared with an approximation to the domestic terms of trade (for which purpose the ratio of the wholesale price index of agriculture and manufacturing were used). In such a way a relative trade policy index could be developed, in order to have a rough estimate of the direction of trade policy, which reached in 1986 the highest point of the restrictive system compared either with 1980 or 1992. In addition the table presents a measure of the real exchange rate, either a direct price measure of purchasing power parity or using a basket of currencies, which showed in 1992 a lower value than the level reached in 1986. This reinforced the trade liberalization policy on the import side, while reducing the incentive to expand exports except in activities where the country had a comparative advantage provided by its natural resource endowment. This implies, the increase in activities providing lower value added and given their "flow" nature of their technology with lower employment

effect. The cyclical recovery of economic activity implies additional social costs related to increased productive capacity. In both years mentioned before, 1980 and 1992, the increase in imports was important enough. This was the outcome of an increase in domestic absorption of tradable and non-tradables goods and services, related either to consumption, the construction business, or to investments induced by the privatization initiatives undertaken in the early 90's.

The GDP measure at market prices of 1986 (Table I-2) showed in this year a lower point of reference being higher in 1980 and 1992, with imports and investments showing a similar behavior which was reflected in the high shares of those years. Also in 1992, the value of Consumption reached the highest absolute and relative figure since 1980.

B.ECONOMIC STRUCTURE

1.The structure of production

The production of goods (Table I-3), is influenced mainly by the performance of Manufacturing and Agriculture which showed in 1992 a higher level than in 1980; in Construction the opposite case takes place reaching in 1992 a substantially lower level. All along the 80's the service sector continued to play an important role in the Argentine economy, due not only to its high share in value added, but to their being mainly non-traded goods. It might be said that during that decade the growth rate of Services was parallel to that of the production of goods, but with smother fluctuations.

During the 80's the public sector share in GDP decreased from 47% in 1980-83, 43% (1984-88) and 40% in 1992; with an increase during that period of Social expenditures (and Human Resources), and decreasing proportions spent in Infrastructure and subsidies to the private sector.[3] The privatization of state enterprises producing goods and services reduced the expenditure share in GDP, but not the tax burden due to the need to generate a fiscal current surplus to service the foreign debt.

In Argentina, as well as in other highly indebted countries, servicing the foreign public debt implied, in the past, an increase in government expenditure without the required counterpart in increased revenues. After the private foreign debt was nationalized (mid 1982), this implied an increase in government expenditures. Thus the importance of the reduction and restructuring intended of the stock of debt, which otherwise would be impossible to pay. The fiscal surplus associated with present policies requires the existence of a trade surplus, or an important flow of foreign capital in order to buy the foreign exchange required to pay the service of the debt. In the past, Capital flow restrictions and uncertainty introduced by yearly negotiations implied additional fragility in policy making, no matter how committed the Government was to a new program.

The capital intensity of the economy during the 80's, vis-a-vis the 70's, increased in manufacturing (as we will see in

---

[3]Vargas de Flood, M.C. and Harriague, M.M., (1992), "El gasto público consolidado", Secretaría de Programación Económica.

more detail in chapter II) with its effect in low employment absorption. During the 80's, the low growth of employment in the private sector was mainly the outcome of a system of incentives with high cost of labor, which was reinforced by several types of industrial promotion providing incentives to capital intensive techniques due to generous tax deductions and tariff exemptions.

Once the exchange rate to the dollar is fixed, in order to have a real depreciation would require (with no change in the foreign conditions), a downward change in the cost of non-tradables. In Argentina, this is especially related to the cost of labor, and indirectly to the structure of protection of tradables mainly of wage goods. The former associated to the labor legislation, the latter related with different instruments used to protect domestic production which induced nominal increases in wages and other non-tradables. While producers feared the dismantling of the protective barriers, the unions were also concerned about the effect of greater competitive conditions associated to a reduction in labor rules which might result in the medium term in lower unemployment rates, but eventually in lower nominal wages.

2.On comparative advantage

Based on the criterion that comparative advantage should be assigned only to factors of slow mobility, an estimate of the factor content of total exports and imports was made for the second half of the eighties. This assumption allowed us to exclude capital (the most mobile) from the calculation, estimating then the

share of trade based on Natural resources (RES), Unskilled labor (UL), Technology (TECH) and Skilled labor (SL). Table I-4 shows those estimates: for total exports, 3/4 of them were natural resource based; regarding total imports, a predominance of TECH and SL was seen, also that 1/4 of RES content was mainly foods and minerals.[4]

Since the 1960's several instruments promoting exports were used intending their diversification, but the anti-export bias of trade policies on the import side was not removed. Among them should be mentioned subsidized credit, export rebates and draw backs for regular merchandises or for turnkey plants. To this should be added the instability of the incentive's system, and the weakened political intentions to introduce structural changes when improvements of the terms of trade took place.

Regarding manufacturing exports, a comparison of two cross sections of 1969/71 and of 1976/78 of the performance of 23 developing countries, provided some insights into a simple model of sequences in factor content of manufacturing exports. Those are related not only to the policy environment favoring outward orientation measures for export growth, but also suggesting an intertemporal evolution of factor content and a successful export penetration in world markets. Thus, a sequence in the factor content of manufacturing exports was identified with greater

---

[4]For further discussion see Berlinski, J., (1993), "La creación de un area hemisferica de libre comercio: una perspectiva desde la Argentina", IDB/ECLA.

interaction between incentives and resource content. During the 70's greater export penetration in international markets was made by countries open or semi-closed to trade. Korea was important followed by Singapore and Brazil about 1/2 of Korea. Far away, in descending order, Thailand, Malaysia, Israel, Colombia, etc.. The successful stories of Korea and Hong Kong were based on UL with increased TECH and SL, and reduction of RES. During the 70's the reduction of RES and UL vis-a-vis increasing the content of TECH and SL was clear. Export diversification seemed to have been more closely related with a more open trade policy.

In the Argentine experience (Table I-5), comparisons of the resource content of the 70's and 80's show similar proportions of RES in both decades. Exports of RES dominant content were: animal foods, vegetable oils, meats, leather, aluminum, products of petroleum refining, processed fruits, sugar, etc.. The diversification of exports has been slow in a country with an early and important system of export promotion aimed at increasing exports of industrial origin. The questions which deserve further research is the extent to which this is related to anti-export bias, volatility of real effective exchange rates, behavior of world markets, cyclical exports related to domestic stop and go policies, or if the relative endowment of Argentine SL was less important than believed in the past.

C.THE POLICY ENVIRONMENT

1.General outlook

At least four policy regimes can be identified in the 80's: the program of stabilization and trade liberalization which started at the end of 1978, following with several changes up to the reversal of mid 1982; next, the period up to 1988 with different situations, starting in 1983 with a populist program, followed by a stabilization plan (1985), and in 1988 the dismantling of an important part of the quantitative restrictions took place; the years of hyperinflations; finally, the more comprehensive program started in 1991.

The program started in 1978 and several changes introduced afterwards resulted in an increase in foreign and domestic debt by the private sector and public enterprises. In mid 1982 a policy was implemented to reduce the burden of the debt for the private sector nationalizing foreign debt and reducing the size of the debt in national currency.

In the second period the populist policies started by the military government with strong wage increases, which were continued by the government elected in 1983 up to 1984. The reversals in trade and payments liberalization after the Malvinas (Falkland) war in 1982 closed the economy to foreign competition, so imports were in 1983 about half of the level reached in 1981. Next in 1985 an heterodox stabilization program (the Austral plan) was implemented with the support of the IMF, including an initial devaluation intended to induce export expansion, freeze of prices and wages, no resort to trade liberalization, reduction of fiscal deficits, and a formal decision not to finance the treasury with

increases in the money supply. After several events mainly related to the poor performance of exports, related to the increase in domestic consumption and the decrease in international prices, the increase in fiscal deficits by the end of 1986 left policy makers with very few options. In 1988, the government with the support of the World Bank started an important turning point in trade policy, dismantling a high proportion of the existing quantitative restrictions on imports.

The years of hyperinflation: the first, in 1989, was related to the weakness of the government to follow credible policies, reinforced by the anticipated change in governments by mid 1989. The initial optimism was soon reverted leading to a new hyperinflation episode which started by the end of 1989.

Finally, after an intense year of events during 1990 trying to put some control in the fiscal deficit, in early 1991 a change in Ministers lead to the implementation of an ambitious program of trade liberalization, privatization and deregulation.[5]

2.Trade policies in the 70's and 80's

In the context of the 70's opening up meant a less ambitious liberalization attempt, it mainly implied having a competitive exchange rate, some symmetry between import competing and export promoting incentives, and an institutional system capable of

---

[5]For further discussion and references see Canitrot, A.,(1993), "Apertura y condiciones macroeconomicas: el caso Argentino", in Canitrot, A. and Petrecolla, A., Editors, (1993), Apertura comercial y condiciones macroeconomicas, Instituto T. Di Tella and Interamerican Development Bank.

solving some of the major difficulties faced in crossing the threshold in non-traditional export growth. The objectives of trade policies were more related to the need of providing compensation for the anti-export bias of former trade policy; while this effort started in the 60's providing subsidized credit it is in the next decades where it becomes part of every policy package. With a different mix of instruments the objectives were similar to those existing today in a different setting: how to implement a change in relative prices.

Trade policies of the 70's and 80's could be characterized by the use of several devices (tariffs, quantitative restrictions, export rebates, draw-backs, subsidized export financing, plus some special regimes). Since the 60's and with a different extent, the anti-export bias of the incentive system was compensated with fiscal and financial instruments. The aim was again to check two sources of discrimination: the removal of the higher cost of domestic inputs and the larger rewards to sales in the domestic market related to high protective rates on imports competing with domestic production. This anti-export bias was then compensated to some extent through different devices: draw-backs and temporary admissions regimes, rebates reimbursing the content of domestic taxation and generous subsidies concerning export financing. But export diversification was not attained to the extent expected given the large amount of public funds involved in such export promotion policies.

Import protection was done by tariff and non-tariff

instruments. The tariff schedule was designed according to type of good, domestic supply and degree of fabrication. Rates were set higher for consumer goods than for capital or intermediate products; rates were also higher for import competing goods, which increased with degree of fabrication. So, escalation was built-in resulting in effective tariffs higher than nominal rates. Tariff paid as a proportion of the CIF value of imports was lower than the legal ad valorem tariff rates, the differences were mainly tariff exemptions. In 1979-80 the average tariff paid by imports was 10% (20% in 1987) and the proportion of tariff exempted imports was 44%.[6]

Among non-tariff devices: by 1987 about 1/3 of production was in the restricted (QR) list; for a large part of import items not in the QR list licenses were a formality; legislation like "buy Argentine" provided additional protection; also, Argentina is bound by the Tokyo Round Agreement on technical barriers to trade but reserved the right to use specific tariffs; last, domestic anti-dumping legislation assumed injury when the import price was 15% lower than the domestic price. All of them impose restrictions to competition which affected domestic prices.

In October 1988 a change of direction of trade policy took place, removing 2/3 of the items under QR's, which provided more transparency and neutrality of trade policies towards exports, but

---

[6]Berlinski, J., Camelo, J., Pazmino, M., (April 1984), "Importaciones exentas de aranceles en algunos países de la ALADI", Integracion economica, Institute for Latin American Integration.

uncertainty about future policy changes remained. This is an important reference point, since then policy makers have shown strong determination towards trade liberalization.[7] The period 1988-90 shows changes (dismantling remaining QR's and specific tariffs) in trade policies and nominal exchange rates; since 1991, having fixed the nominal exchange rate, frequent changes were taking place in trade policy with some partial sectoral reversals, especially in 1993.

3.Present trade policies

The different devices presently used especially regarding trade and industrial policies are aiming at a more deregulated industrial policy, but, several exceptions and localized reversals could be seen. As said, trade policies are instrumental in character, thus the need arises to identify the purposes they serve. In the early decades of the ISI model priority was given to imports of intermediate products required to maintain the level of activity, since domestic employment provided the demand for the industries producing consumer goods. This was administered mainly by the foreign exchange controls which existed at that time. Later on, the sequence continued with the production of intermediate and capital goods where import substitution was slower. Then external constraints and domestic policies led to an industrialization pattern of a semi-autarkic type. The intent of trade rationalization of the late 70's was directed to the deregulation

[7]For further discussion of the period 1964-88 see Berlinski, J., (1992), "Trade policies in Argentina", chapter 19 of Salvatore, D., Editor, (1992), National Trade Policies, Greenwood Press.

of the economy expecting to induce manufacturing exports, given the growth exhaustion of the ISI model with activities mainly selling to the domestic market, pointing to the need of changing the nature of the capital accumulation process which in the past was strongly leveraged by the public sector.

After the turning point of 1988 trade policies were oriented again towards the reduction in levels and dispersion of tariffs, dismantling of QR's and of remaining specific tariffs. This was done in several yearly changes until the last general reform of October 1992 involving tariffs and export rebates.

The tariff structure computed here for October 1993 took into account the October 1992 schedule and later changes in rates, especially those referred to tariff zero for capital goods. Legal tariffs might be the relevant instrument of protection in the absence of quantitative restrictions, assuming no water in the tariffs and neutral indirect taxation. The estimates presented in Table I-6 are concerned with the protective effect (nominal tariffs weighted by the production structure) of the October 1993 tariff schedule (including the present 10% statistics tax when appropriate), which shows a high concentration of activities in the rate bracket 5%/30% which is important for all types of goods except for Fuels and a small group of activities producing Capital goods. The average weighted mean is 14%; with Industry at a level of 16%, of which Non-durable consumer goods and Construction materials are around this average while Intermediate goods, Fuels and Capital goods are substantially lower. The dispersion of the

unweighted rates is low (the highest was in Capital goods) and the similaricy between unweighted and weighted rates is high, except for Intermediate goods.

Another important dimension is tariff revenue where the erosion of the tariff base is related to duty exemptions, which implies the existence of segmented markets between beneficiaries and non-beneficiaries of those regimes, resulting in a strong difference of rates. In other words, tariff exemptions are "tax expenditures" reducing fiscal revenues, thus saving costs for eligible users, while the others have to pay the full domestic price. Since mainly non-competing imports are involved (intermediate and capital goods), exemptions would be reflected in higher factor rewards for the users. In Table I-7, the tariff paid and the proportion of exempted imports were computed using 1992 data of the Harmonized system.[8] The tariff paid was 9% compared to a nominal rate substantially higher. The average proportion of exempted imports was 31% in 1992, higher proportions were found in Mineral products, Jewelry, Machinery and Transport equipment. As mentioned in this chapter, in 1979-80 the average tariff paid by imports was 10% and the proportion of tariff exempted imports was 44%, which might be compared with similar averages of tariff paid in 1991 and 1992, with a strong reduction of exempted imports in 1992. In any case this is an important problem which requires

[8]The tariff paid was estimated computing the tariff revenue as a proportion of the CIF value of imports, the exempted import ratio represents the value of exempted imports as a proportion of total imports in each category of the trade nomenclator.

updated estimates regarding the importance of the special regimes, isolating zero tariffs and preference margins negotiated.

As said earlier, tariffs might be the relevant instrument of protection, but the importance of non-tariff restrictions in several Argentine sectors would require the calculation of the so called tariff equivalents, measuring the protection implicit in the actual price behavior of domestic producers; i.e. the introduction of non-tariff devices distorts prior relative prices set by tariffs.

Among those additional regulations on imports, it might be mentioned: minimum export values, minimum specific tariffs; anti-dumping actions; prohibitions of imports of used motorcycles and textiles; rules regarding imports of cement; identification regime of foreign merchandise; prohibition of imports of used engines and tires; regulations regarding books printed in countries where the official language is not Spanish; prohibitions related to the automobile industry; prohibition of imports of certain medical equipment; quotas were introduced regarding paper imports from Mercosur countries; disinfection of used machinery is required; prior authorization of the Ministry of Health is required for imports of pharmaceuticals and related items; several specific regulations concern the imports of products of animal origin not for human consumption; rules regarding imports of disposable medical materials, laboratory reactives for diagnosis, sterile materials, etc.; rules for imports of nuclear materials; rules for imports of drugs; rules concerning imports of foodstuffs.

While the extent to which those non-tariff instruments are used for additional protection might be an open question, it is very likely that existing quotas (automobiles, papers), minimum specific tariffs on textiles, minimum export prices and antidumping actions, etc. affected domestic prices.

Regarding export promotion, based on the October 1992 legislation, in Table I-8 export rebates were computed on FOB values.[9] The average weighted rate is 6% for the economy and 7% for Industry. Within Industry, the highest weighted rates corresponded to Capital goods (15%) and Consumer durables (16%), followed by Construction materials (11%) and Intermediate goods (8%). Dispersion of arithmetic means is low, being lower for the highest rates. In October 1992 export rebates increased, so the anti-export bias seems to have been reduced. But the bias measured by the difference in incentives to substituting imports and/or to exports (weighted by actual production and exports) is for the economy of almost 9 percentage points, slightly higher for Industry (Tables I-6 and I-8).[10] In addition, the introduction of the price effect of non-tariff restrictions on import competing production would increase the bias.

4.Deregulation policies

---

[9]Weighted by actual FOB value of 1992 exports. Those measures are biased since the legal base is FOB value less imports made directly by exporters.

[10]This magnitude is similar to the statistics tax on imports which would be eliminated in January 1995.

Decree 2284/91[11] was the point of departure of a complex set of deregulation procedures, intended to reduce the cost of non-tradables, increase export competitiveness, and eliminate redundant regulatory agencies. Since then, some reversals took place in trade policy, including quotas introduced for some papers, minimum specific tariffs for textiles, and some safeguards and anti-dumping actions which reinforced protection selectively. It is also difficult to know the extent to which this decree was enforced and/or the importance of reversals.

General deregulation affected different areas, most of them concerned directly or indirectly with trade and industrial policies, the decree included several areas of which the most directly relevant would be mentioned next. a) Domestic trade: those concerning the removal or rationalization of restrictions on insurance, transport, port services, air cargo, bus transport, harbor pilots, medicines, professional fees, wine, cement. b) Foreign trade: the orientation was to ease foreign investments; strengthen customs administration, re-introduce the temporary admission regime; eliminate quotas on trade (except on automobiles); eliminate prior intervention of exports except in matters related to international agreements, health, flora and fauna; rationalize port activity[12]; simplify controls at customs except for aspects related to public health; eliminate fleet reserve on Argentine vessels; eliminate domestic preferences for

---

[11]Additional elements were introduced in decree 2488/91.

[12]They were around 2% if CIF value of imports.

government procurement ("compre nacional"); ease the requirement to be registered as importer or exporter; eliminate prior administrative intervention at Customs; introduce simultaneity in the calculation of tariffs and domestic taxes; focus the objective of Customs Administrations to look after customs revenue; introduce selectivity in controls as the criteria to be applied at Customs. c) Regulatory agencies eliminated concerned grain, beef, fish, forests, animal health, yerba mate, sugar, and limiting the function of the wine institute. d) Tax changes and promotion activities: remove consular taxes and consular intervention; eliminate the 3% statistical tax on exports, as well as the export promotion fund financed with .5% on imports; eliminate taxes for the Merchant marine fund[13]; eliminate different decrees relative to promotion of industries (aeronautic, naval and road machinery); eliminate the registry of the steel industry; eliminate input exemptions of the aluminum industry.[14]

5.The Mercosur agreement

The Mercosur agreement, is an economic integration arrangement signed in March of 1991 between Argentina, Brazil, Paraguay and Uruguay, according to which by the end of 1994: internal trade would be liberalized with a 100% preference margin, a common external tariff would be introduced, non-tariff restrictions would

---

[13]The charge was 12% on the freight value.

[14]See for further discussion, Rojo, P. and Hoberman, L. (November 1993), "Deregulation in Argentina: a Policy-maker's view", Latin America 2000 Conference; and Ministerio de Economía, op. cit..

be eliminated, and macro policies coordinated.

In the 80's the "internal" trade flows among the Mercosur associates, were a low proportion. Then the question which arises is how much trade diversion will take place, and how much will be compensated by the effects on consumers of the new preference margins and/or the cost reductions related to economies of scale. Unilateral liberalizations started in Argentina and Brazil, they dismantled QR's and reduced water in tariffs. Some important "acquired rights" remain: like those related to the industrial promotion system and other special regimes like the automobile industry. But, if tariffs were the relevant instrument of protection: in Argentina (October 1993), nominal and effective rates were around 14%; and in Brazil (1993) nominal rates were 13% and effective tariffs around 22%.

That is why an estimate of future trade diversion was intended,[15] following the recommendation of Article XXIV of GATT: discriminatory arrangements should not increase the average external tariffs as a protection against trade diversion. The exercise made adopted a uniform effective rate of protection for manufacturing as a normative criterion except for activities related to natural resources (Agriculture and Mining). Then, if the Brazilian average effective protection were adopted as the Common external tariff (an extreme case), it would imply a nominal

---

[15]Berlinski, J., (1992), "Sobre el arancel externo común en el Mercosur", Seminario sobre el Mercosur, Instituto Di Tella, November 1992.

increase in prices, which in the aggregate would be a transference from users to producers amounting to a yearly rate of 3% of the production value.

Regarding future perspectives within Mercosur, and since the big countries (Argentina and Brazil) have shown greater competition in exports not based in natural resources: would those countries become exporters of manufactures to the region and the rest of the world?; would they become competitors in third countries?; and/or would the small countries export goods based on natural resources and unskilled labor products mostly to the rest of the world.?[16]

Comparisons of the natural resource content of manufacturing exports (70's and 80's) between Argentina and Brazil show similar proportions at the early 70's, since then Argentina has maintained them (Table I-5) and Brazil has reduced them. But products were similar, Spearman coefficients between SITC items within each factor content in 1988, for Argentina and Brazil prove to be high: Natural Resources, .66; Unskilled Labor, .55; Technology, .63; Skilled Labor, .70. Would that facilitate intra-industry trade between those big countries.? The literature on the subject supports the positive correlation between discriminatory trade arrangements and intra-industry trade, the latter was seen as a

---

[16]As expected, the cautious attitude of entrepreneurs differs from the optimism of public officials. This is similar to the apathy found by Globerman, S. y Dean, J.W., (1990), "Recent trends in intra-industry trade and their implication for future trade liberalization", Weltwirstschaftliches Archiv, 126, in a survey of 300 entrepreneurs about CAFTA.

source of economies of scale,[17] but its relevance here is an open question.[18]

D.INDUSTRIAL POLICY

1.The general promotion system

The legal instrument for industrial promotion (Law 21608 of 1977), regulated incentives concerning sectoral and regional locations. Some additional laws and decrees supplemented the general system like Law 22021 (1979) in La Rioja, Laws 22702 and 22973 (1983) concerning Catamarca, San Luis and San Juan. The innovation was that the provinces involved had authority to exempt projects from federal taxes. Here the legal frameworks are mainly presented, but as in any legislation of this type it is difficult to know the extent to which the authorities have been able to audit whether the objectives of the system are accomplished, or the extent to which penalties can be introduced for non compliance.[19]

---

[17]Apart from the skeptic position of Caves, R.E., (1981), "Intra-industry trade and market structure in the industrial countries", Economic Journal, vol. 33; the recent agreements New Zealand-Australia or Canada-US would receive support depending on the importance of intra-industry trade adjustment (as mentioned by Globerman & Dean, op. cit.).

[18]Presently the Mercosur countries have signed a framework agreement with the US, in which case the Mercosur agreement might also be seen as an intermediate station of an Hemispheric agreement. But here the "hub and spoke" problem appears if the agreement is not made with NAFTA.

[19]Based on own research of legal regimes; and FIEL, (1988), Los costos del estado regulador; Artana, D., (1991), "Regimenes de promoción economica", in Porto, A., (Compilador), Regulación de actividades económicas y financieras. Instituto T. Di Tella; and Ministerio de Economía (1992), Argentina en crecimiento: La reforma economica y sus resultados 1989-92.

By the end of the 1980's around 3000 projects were approved, those located in La Rioja, Catamarca, San Luis and San Juan represented around 80% of them, the most important number was located in the San Luis Province. While no systematic inventory is available describing the main characteristics of the firms involved, it is said that of those provincial projects: only 1/3 complied with the objectives of production and employment originally set, and that they are relatively capital intensive.

The regime provided benefits to the investor and to the promoted firm. The investor had the option to postpone tax payments or to deduct the capital supplied as expenditure. Firms were exempted from: VAT for 15 years,[20] income tax up to 15 years, stamp tax, tariff on capital goods; others were eligible for preferential prices of inputs like Petrochemicals, etc..

To the general promotion system several specific regional (sectoral) laws were added. On regional promotion, the Tierra del Fuego regime is important, where the electrodomestic and electronic industry is mostly located; additional rebates for exports made through Patagonic ports should also be mentioned; regimes promoting specific industries, some financed through special funds made up in part by earmarked taxes, among them: automobiles, steel, ships, aluminum, petrochemicals, etc.. Some of sectoral regimes were discontinued by the deregulation decree, later on in this section

---

[20]This explains around 3/4 of total incentives, which shows the inward orientation of those projects.

the Tierra del Fuego and the Automobile regimes will be discussed, as well as the new Industrial specialization regime introduced in 1992.

Estimates of the fiscal cost in 1987 of the industrial and regional promotion regime was US$1345 million, of which US$415 Million corresponded to the one administered by the National Secretary of Industry, (US$160 Million were VAT and taxes on income and assets), and US$930 Million to provinces (US$835 million was VAT and taxes on income and assets).

The amount authorized by the Congress in the 1994 Budget to be spend on those "acquired rights" for existing projects was US$1385 million, which does not include tariff exemptions, tax postponements ("diferimientos") by investors, or the Tierra del Fuego exemptions. For new projects, a yearly amount of US$5 million was authorized regarding tourism, for each of the following provinces: San Juan, Catamarca and La Rioja.

For existing projects, starting in 1989 the emergency law (23697) deferred 50% of the promotional benefits, except tariff exemptions for inputs entering Tierra del Fuego. In 1989 and 1990 measures were taken to control promotional benefits: identification of beneficiaries, deadline to start the project, etc.. In 1991, it was ruled that the promotional benefits (based on the estimated fiscal cost of the original project) would be paid with a certificate eligible to be used to pay taxes. In this way, an effort was made to limit those benefits through administrative procedures. Since this substitution included a penalty for non

compliance, an exit clause was introduced as an option. In 1992 a tax credit program was enacted to replace tax deductions. Following that decree firms would be audited for compliance of its original contract; those failing to reach the target had a credit reduction (the higher non compliance in employment, production and investments, the higher the credit reduction).[21]

For new projects, it might be said that (except for some promotion of Tourism concerning the Provinces of La Rioja, Catamarca and San Juan above mentioned), no general promotion benefits exist regarding new or existing activities.

2.The Tierra del Fuego regime

Law 19640 was the starting point of the Tierra del Fuego regime in 1972, creating a free trade area in the "Territorio Nacional de Tierra del Fuego e Islas del Atlantico Sur", with an special customs regime ("Area Aduanera Especial") in the big island of Tierra del Fuego. This implied important tax and tariff exemptions. Exports received rebates apart from those provided by the general system.

In 1983 several changes were introduced: restricting free imports of inputs and capital goods to a list of priority activities (mainly electrodomestics and electronics); reducing the degree of import components from 50% (1985) to a level of 35% in 1989; introducing rebates for exports: from the "Area Aduanera Especial" to the rest of the world (10%), and from the territory to the "Area" of 5%. Also in 1983, this was complemented by applying

---

[21]This procedure seems difficult to apply.

to the Patagonic region the promotion regime of law 21608. In 1987, the benefits of VAT exemptions were included for goods originated in Tierra del Fuego. Then in 1988 the list of promoted activities was extended, legislating that the special system ("Area Aduanera Especial") would disappear in 15 years. Later on, the economic emergency law was not applied to this regime, but new projects were suspended. In 1991 the "impuesto interno" (an excise tax on selective items on top of the value added tax) was suspended on several electronic and electrodomestic products, maintaining this tax for imported goods. A price agreement between the Government and producers included their commitment to maintain prices existing by the end of 1990, while a list of restrictive reference prices for competing imports was included. Later on, the exemption of that selective tax was extended to imported goods removing the additional protective effect. In 1993 the share of imported inputs was increased (free of tariffs and VAT), from 35% to 50%, and the government postponed for 2 years the inclusion of new projects.

Concerning the fiscal cost of the regime, early estimates of 1987 made up a figure of US$345 million of which US$141 million corresponded to VAT. This should be considered a lower level when estimates of the present costs would be intended, given the increase in local domestic activity.

3.Other special regimes

About other special regimes two would be mentioned: The Automobile industry, the legal basis of the present system has

several pieces of very complex rules.[22] So, the following description of the system is not intended to cover here all the areas but to provide an approximation to its complexity, further discussion is made in chapter III. The regulations of Decree 2677/91 are supposed to last until the end of 1999. Some important points are: to increase the import content to 40%/42% according to the category of car; producers had to present a reconversion program; the export-import relationship should be balanced; exports could be cars or spare parts; 30% of investments in machines of domestic origin might be computed as exports; exports have to contain a minimum of 25% of parts made by independent producers; direct and indirect imports would be computed in this equation; spare parts would pay a tariff of 2%; producers having a positive balance of trade can import cars paying a 2% tariff; importers would pay a tariff of 20% and a statistics tax of 10%; import quotas were set at 10% of national production in 1994; quotas are assigned in a bidding procedure based on how much above the 20% tariff is offered.

The other regime included here is the so called "Industrial specialization", Decree 2641 of 1992 introduced the regime for industrial specialization. It implies an agreement with the Secretary of Industry and Commerce by which the signing firm would increase their exports related to the average of the last 12 month. The firms would get an import license with lower tariffs, those

---

[22]Decree 2226 (October 1990) and Decree 2677 (December 1991); "Protocolo 21" regulated trade with Brazil.

imports should correspond to the same chapter of the exports customs nomenclator. The following four periods would be taken into account: 1993-96, 1997, 1998, 1999; in the first one the tariff rate would be 2%.; after 1996 a formula would be used to calculate the reduced tariff rate. For the "agreed" exports increase the rebate rate would be 15%. It is known that several firms in different activities (textiles, steels, etc.) applied to get the benefits of the regime, but no evaluation has been advanced by the authorities as to the extent the objectives were attained.

TABLE I-1
CURRENT ACCOUNT, TERMS OF TRADE AND TRADE POLICY IN SELECTED YEARS

	1980	1983	1986	1989	1992
MERCHANDISE ACCOUNT(1)	-2519	3331	2128	5374	-2637
Exports	8021	7836	6852	9573	12235
Imports	10540	4505	4724	4199	14872
REAL SERVICES(1)	- 740	- 400	- 573	- 265	-1118
FINANCIAL SERVICES(1)	-1532	-5408	-4416	-6422	-4574
Interests (Net)	- 948	-4983	-3934	-5758	-3739
Others	- 584	- 425	- 482	- 664	- 835
CURRENT ACCOUNT(1)	-4768	-2461	-2859	-1305	-8361
TRADE SHARES(2)	11.6	14.9	14.5	19.7	14.7
GDP GROWTH(3)	103.5	98.0	100.0	94.4	111.8
TERMS OF TRADE					
Domestic(4)	94.6	104.9	100.0	92.6	83.7
Foreign(5)	137.6	123.8	100.0	110.3	105.4
EXCHANGE RATES					
Real(6)	39.5	97.4	100.0	133.1	62.6
Real(7)	46.2	93.6	100.0	146.6	76.9
TRADE POLICY INDEX					
Relative(8)	68.8	84.7	100.0	84.0	79.4

SOURCE: Own estimates based on data from Central Bank and ECLA. In Diaz Alejandro, C.F. (1981) "Tipo de cambio y terminos de intercambio en la Republica Argentina 1913-1976, CEMA a similar comparison was intended here.Based on official statistics of the Central Bank, the Statistical Institute and ECLA. (1) Millions of current dollars; (2) Share of exports plus imports to GDP; (3) Index 1986=100; (4) WPI for Agriculture divided by WPI for Industry, with a 1986 base ; (5) Index of relative (exports/ imports) unit prices of trade; (6) (RER) Average nominal exchange rates times US CPI divided by the average of Argentine's WPI and CPI (Central Bank); (7) (RER) based on a basket of currencies (Central Bank); (8) relative implicit protection index [(4)/(5)]. See also Annex Table A-1.

TABLE I-2
ARGENTINA, LEVELS AND STRUCTURE OF TOTAL SUPPLY AND DEMAND AT MARKET PRICES OF 1986 FOR SELECTED YEARS
(Thousands of pesos)

	1980	1983	1986	1989	1992
LEVELS					
TOTAL SUPPLY (DEMAND)	11562	10387	10616	9943	12562
INDEX 1986=100	108.9	97.8	100.0	93.7	118.3
GDP	10331	9783	9984	9424	11159
INDEX 1986=100	103.5	98.0	100.0	94.4	111.8
IMPORTS	1231	604	631	518	1404
INDEX 1986=100	195.1	95.7	100.0	82.1	222.5
CONSUMPTION	8091	7669	8057	7469	9288
INDEX 1986=100	100.4	95.2	100.0	92.7	115.3
INVESTMENTS	2749	1907	1743	1484	2189
INDEX 1986=100	157.7	109.4	100.0	85.1	125.6
EXPORTS	723	811	815	990	1086
INDEX 1986=100	88.7	99.5	100.0	121.5	133.3
STRUCTURE					
TOTAL SUPPLY (DEMAND)	111.9	106.2	106.3	105.5	112.6
GDP	100.0	100.0	100.0	100.0	100.0
IMPORTS	11.9	6.2	6.3	5.5	12.6
CONSUMPTION	78.3	78.4	80.7	79.3	83.2
INVESTMENTS	26.6	19.5	17.5	15.7	19.6
EXPORTS	7.0	8.3	8.2	10.5	9.7

SOURCE: Banco Central de la Republica Argentina (April 1993), "Estimaciones anuales de la Oferta y Demanda Globales, Período 1980-1992", and Annex Table A-2.

TABLE I-3
ARGENTINA, LEVELS AND STRUCTURE OF GROSS DOMESTIC PRODUCT AT MARKET PRICES OF 1986 FOR SELECTED YEARS
(Thousands of pesos)

	1980	1983	1986	1989	1992
LEVELS					
GDP	10331	9783	9984	9424	11159
INDEX 1986=100	103.5	98.0	100.0	94.4	111.8
PRODUCTION OF GOODS	4828	4504	4511	4137	4984
INDEX 1986=100	107.0	99.8	100.0	91.7	110.5
AGRICULTURE	714	790	779	753	872
MINING	231	227	202	239	257
MANUFACTURING	2890	2658	2738	2461	3017
ELECTRICITY, GAS, WATER	151	171	195	182	214
CONSTRUCTION	841	657	597	502	624
PRODUCTION OF SERVICES	5455	5325	5473	5281	6067
INDEX 1986=100	99.7	97.3	100.0	96.5	110.9
COMMERCE	1843	1612	1626	1438	1863
TRANSPORT	415	416	468	497	553
FINANCE	1470	1501	1522	1444	1757
SERVICES	1727	1797	1857	1903	1895
STRUCTURE					
GDP	100.0	100.0	100.0	100.0	100.0
PRODUCTION OF GOODS	46.7	46.0	45.2	43.9	44.7
AGRICULTURE	6.9	8.1	7.8	8.0	7.8
MINING	2.2	2.3	2.0	2.5	2.3
MANUFACTURING	28.0	27.2	27.4	26.1	27.0
ELECTRICITY, GAS, WATER	1.5	1.8	2.0	1.9	1.9
CONSTRUCTION	8.1	6.7	6.0	5.3	5.6
PRODUCTION OF SERVICES	52.8	54.4	54.8	56.0	54.4
COMMERCE	17.0	16.5	16.3	15.3	16.7
TRANSPORT	4.0	4.2	4.7	5.3	5.0
FINANCE	14.2	15.3	15.2	15.3	15.7
SERVICES	16.7	18.4	18.6	20.2	17.0

SOURCE: Banco Central de la Republica Argentina (April 1993), "Estimaciones anuales de la Oferta y Demanda Globales, Período 1980-1992", and Annex Table A-3.

TABLE I-4
ARGENTINA, DOMINANT FACTOR CONTENT OF FOREIGN TRADE
(1985/1990)

(In percentage)

	1985	1986	1987	1988	1989	1990
TOTAL EXPORTS						
Natural resources	82.4	79.2	75.2	73.5	69.4	75.5
Unskilled labor	1.6	2.3	4.1	3.4	4.0	3.4
Technology	7.2	8.5	10.1	11.1	11.4	9.6
Skilled labor	8.8	10.0	10.7	12.0	15.2	11.5
TOTAL IMPORTS						
Natural resources	28.0	29.2	27.8	25.0	26.4	25.9
Unskilled labor	2.1	2.2	1.7	1.7	1.7	3.1
Technology	48.1	47.3	49.3	50.8	51.5	49.9
Skilled labor	21.8	21.3	21.2	22.5	20.5	21.1

SOURCE: Own estimates. The data base came from foreign trade statistics of the Instituto Nacional de Estadística y Censos. To determine the dominant factor content of trade, it has been assumed that since capital is the most mobile factor it should not be considered a source of comparative advantage. Thus, SITC items (Rev.2) were assigned to each factor category according to the following criteria: Natural resources, includes traditional primary products, among the manufactured items: foods, beverages, tobacco, wood, synthetic and artificial fibers, petroleum derivatives, vegetables oils, leather, skins, rubber, cork, cement, iron, copper, nickel, aluminum, lead, zinc, tin; Unskilled labor, they are SITC items corresponding to ISIC sectors with the lowest value added per worker (based in US statistics) taken from Krause, L.B.,(1984), "Australia's comparative advantage in international trade" in Caves, R.E. and Krause, L.B., The Australian economy, a view from the north, who took them from estimates made by Balassa, B., (1977), "A stages approach to comparative advantage", World Bank working paper 256; the rest, it is difficult to estimate the difference between technology and skilled labor, but the former items were identified (following also Krause) according to the intensity of R&D expenditures (relative to value added) in USA.

TABLE I-5
ARGENTINA, DOMINANT FACTOR CONTENT OF MANUFACTURING EXPORTS, (70'S AND 80'S)

(In percentage)

	1969-71	1976-78	1984	1986	1988
NATURAL RESOURCES	76.4	61.0	74.5	66.9	63.9
UNSKILLED LABOR	1.7	5.1	2.3	3.8	4.7
TECHNOLOGY	10.6	16.7	11.3	13.1	14.6
SKILLED LABOR	11.3	17.2	12.0	16.3	16.8

SOURCE: Own estimates. The data base are UN statistics on foreign trade according to the SITC. Items of manufacturing exports were those selected in UNIDO, (1982), "Changing patterns of trade in world industry: an empirical study of revealed comparative advantage". Data for the 80's according to the SITC Rev. 2 came from UN COMTRADE, this required bringing up to date the key SITC/ Dominant factor used for the 70's estimates, based on the older version of the SITC. The estimation method is the same of Table I-4 applied here only to manufacturing exports.

TABLE I-6
ARGENTINA, NOMINAL TARIFF PROTECTION (OCTOBER 1993), RELATIVE FREQUENCY AND DISPERSION, TYPE OF GOODS

RATE BRACKET	TOTAL	TOTAL INDUSTRY	CONSUMER-GOODS NDUR	CONSUMER-GOODS DUR	INTER GOODS	FUELS	CONST MAT	CAPITAL GOODS
0	1.0	0.6						5.9
0.1- 5	2.5	2.4				100.0		11.8
5.1-10	13.4	6.5		2.3	7.3		5.6	29.4
10.1-15	21.9	18.5	27.3		25.5		16.7	29.4
15.1-20	25.9	29.8	63.6	4.7	29.1		50.0	11.8
20.1-25	24.4	29.2	9.1	46.5	34.5		27.8	11.8
25.1-30	10.9	13.1		46.5	3.6			
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ITEMS	201	168	33	43	55	2	18	17
MEAN	17.6	19.0	16.6	25.7	18.3	3.9	19.2	10.9
S.D.	7.0	6.5	2.9	4.1	5.1		4.3	6.3
DISPERS.	0.40	0.34	0.17	0.16	0.28		0.22	0.57
WEIGHTED AVERAGE	14.3	16.2	15.8	22.0	10.9	1.2	18.7	9.2

SOURCE: Own estimates, based on sectoral calculations made by Lifschitz, E. et al (March 1993), "Estimación de los niveles de protección nominal y efectiva", Ministerio de Economía. NDUR, non durable; DUR, durable; INTER, intermediate; CONST/MAT, construction materials.

TABLE I-7
ARGENTINA, NOMINAL TARIFF, TARIFF PAID AND EXEMPTED IMPORTS, SECTIONS OF THE HARMONIZED SYSTEM (1992)

SECTIONS OF THE HARMONIZED SYSTEM	TARIFF PAID	EXEMPTED IMPORTS
1.Animal products	2.5	31.5
2.Vegetal products	2.5	28.3
3.Oil, grease	3.8	15.6
4.Food industry products	7.3	17.6
5.Mineral products	1.2	77.0
6.Chemical products	6.2	11.5
7.Plastics, rubber products	8.7	14.9
8.Leather products	17.1	11.2
9.Wood, cork products	5.0	20.3
10.Pulp, paper products	10.2	10.7
11.Textiles and Apparel	16.7	9.8
12.Shoes and other products	19.9	4.5
13.Non-metallic minerals	10.6	14.0
14.Jewelry	8.6	49.0
15.Metallurgical products	9.9	18.3
16.Machinery	10.2	44.8
17.Transport equipment	10.0	41.3
18.Precision instruments	8.1	23.8
19.Weapons	18.1	1.0
20.Miscellaneous manufacturing	17.7	5.0
21.Art objects	0.3	97.4
AVERAGE	9.[illegible]	31.3

SOURCE: Own estimates, based on data provided by the Instituto Nacional de Estadística y Censos. Imports of 1992 were used as weights.

TABLE I-8
ARGENTINA, EXPORT REBATES (OCTOBER 1993), RELATIVE FREQUENCY AND DISPERSION, PRINCIPAL SECTORS AND TYPE OF GOODS FOR INDUSTRY

RATE BRACKET	TOTAL	TOTAL INDUSTRY	CONSUMER-GOODS NDUR	CONSUMER-GOODS DUR	INTER GOODS	FUELS	CONST MAT	CAPITAL GOODS
0	1.5	0.6			2.0			
0.1- 5	25.1	9.3	6.1		16.3	100.0	16.7	
5.1-10	29.6	35.2	78.8		42.9		50.0	5.0
10.1-15	30.5	38.3	9.1	47.5	34.7		33.3	85.0
15.1-20	13.3	16.7	6.1	52.5	4.1			10.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ITEMS	203	162	33	40	49	2	18	20
MEAN	9.9	11.6	8.3	16.5	9.7	1.9	10.3	14.2
S.D.	5.5	4.7	3.0	2.6	4.4		3.0	1.4
DISPERSION	0.55	0.41	0.36	0.16	0.46		0.30	0.10
WEIGHTED AVERAGE	5.6	6.7	5.1	15.6	8.3	2.1	10.5	14.5

SOURCE: Own estimates, based on legal information. Exports of 1992 were used as weight. This is a upper biased measure, since according to Decree 1011/91 and Customs interpretation, the base is the FOB value less imports made directly by the exporter. NDUR, non durable; DUR, durable; INTER, intermediate; CONST/MAT, construction materials.

II.THE MANUFACTURING SECTOR

In chapter I a picture concerned with relevant policy devices was presented, where the industrial sector is inserted. The present chapter discusses specific evidence regarding different dimensions of the manufacturing sector: growth and structural change, employment, productivity and performance, ownership and investments pattern, and trade in manufactures.

A.GROWTH AND STRUCTURAL CHANGE

Diaz-Alejandro (1970)[23], in interpreting industrial growth after the thirties put the emphasis on protection levels, attitudes towards foreign capital, employment and income distribution objectives. Protection included several trade restrictions as well as domestic subsidies; also, it is difficult to imagine that certain "new" industries would have been developed without the support of foreign capital; finally, priority was given to imports of intermediate goods in order to maintain the level of domestic employment which was the source of demand for consumer goods.

After the 50's increasing proportions of value added and employment was accounted for industries producing intermediate and capital goods. Because of the greater capital intensity of those industries the growth in employment was not as fast as in the past, in the period 1950-70 while manufacturing value added increased 150%, employment only rose by 20%. This capital intensity was also

---

[23]Diaz-Alejandro, C.F., (1970), Essays on the economic history of the Argentine Republic, Yale U.P..

related to the incentive system which reduced the cost of capital through generous tax expenditures reinforcing the effect of wage taxation through the labor legislation. Also, non-traditional exports originated in those new industries increased at high rates, the importance of which was neglected for many years.

Table II-1 provides a picture of the evolution of the manufacturing growth for selected years of the 80's, but available information stops in 1991, so the 1992 increase of activity mentioned in chapter I could not be considered here at the more detailed level. Comparison of the levels of 1991 with the peak reached in 1986 is illustrative of the strong fluctuations of domestic activity mentioned in chapter I. The aggregate for manufacturing is almost the same in both years but the composition is different. At 2 digits of the ISIC the higher levels (comparing 1991 to 1986) corresponded to Foods, Wood, Chemicals, and Basic metals. Within those aggregates, the 3 digits growth rates compared with the 1986 peak, were higher in 311/12, Food products (13%); 332, Furniture (12%); 354, Petroleum derivatives 26%; 353, Petroleum refineries, 16%; 351, Basic Chemicals, 10%; 371, Basic metals (Iron and steel) 15%; and 372, Non-ferrous metals 6%.

The cumulative effect of yearly changes between 1980 and 1991 leads to changes in the composition of value added, as seen in Table II-2. At two digits (31) Foods and (38) Machinery and equipment, should be mentioned. The former increasing its share from 20% up to 24%, the latter reducing its proportion from 29% to 21%. Based on the production indexes for a sample of manufacturing

(see Table II-5) it may be said that the trend observed up to 1991 continued in 1992 for Foods, Wood, and Machinery and equipment, the last one induced by the production record of automobiles and the electrodomestic industries. At 3 digits (Table II-2), the increase in participation is high in Food products (311/312): from 13% of manufacturing value added in 1980 to 18% in 1991. Within the Machinery and equipment industry, the decline is more important in 383 (Electrical machinery) and 384 (Transport equipment), both shares were in 1991 of around half the levels of 1980.

The variability of yearly rates of growth for the 80's is high at 2 digits of the ISIC, increasing more when the analysis is done at 3 digits (see Table II-3). Across industries or time the dispersion of yearly rates is high, without a clear pattern when compared with aggregate cyclical adjustment. This introduces questions regarding the adaptation of firms during those swings in the level of activity either in growth years or in recession years, also about the medium term sustainability of those yearly rates beyond cyclical growth.

At more detailed levels (see Annex Table A-4) the 1986-91 increase in Food products is basically due to 3115, Vegetable oils (38% on top of the high level reached in 1986, 224% increase if compared with 1980), Bakery (3117), Sugar (3118), with 3111 (Meat preparation) at the 1986 level. About 3511 (Basic chemicals), the 1991 level was only 4% higher than the 1986 peak. Regarding Transport equipment, the level reached by the Manufacture of motor vehicles (3843) in 1991 was still behind the 1986 level, but with

high increases in activity in 1992 and in 1993 reaching the highest absolute level, as we will see in chapter III.[24] The leading sectors involved have different implications regarding their trade orientation, the perception of the change of regime and the strategies followed in each of them is not independent of past trends and experience of the firms, which is very related to the future sources of demand (domestic, exports) and its nature (final, derived).

B. INDUSTRIAL EMPLOYMENT

In the mid 70's a long stagnation period in production started, with cyclical increases in the mid 80's, up to 1990 where no explicit industrial policies existed. In this period the performance of sectors is heterogeneous, those activities providing most of the domestic absorption reduced their share (Foods not related to exports, Metal-mechanic products, Textiles), with an increase in the importance of Chemicals, Paper and Steel. There are also differences within sectors, with some firms benefitting from promotional incentives, others internalized the income redistribution of the effect of swaps or debt reduction.[25] Regarding the size of the firms, during that period the small and

---

[24]To illustrate further the variability of production levels, Annex Table A-5 provides details of physical volumes for certain groups of products, with statistics available for the period 1986-92.

[25]For further discussion of swaps and debt reduction established since 1984 until 1989, see Fuchs, M., (1990), "Los programas de capitalizacion de la deuda externa Argentina", CEPAL, Oficina de Buenos Aires.

medium firms increased their employment while the large ones reduced it, then for the latter increases in productivity were important.

At the sector level the inter-census comparison (1973-1984) show a small increase in employment, with heterogeneous behavior within the aggregates, half of the activities increasing by more than 5%, the rest decreasing. The absence of relevant data does not allow us to make inter-census comparison of skill levels, but given the increase in manufacturing value added of the share of "process" industries, mentioned before, the average skill level actually used might have been reduced. Also, labor saving technologies introduced in this period worked in the same direction.[26]

Census data for 1973 and 1984[27] (Table II-4), show an increase in the sectoral (2 digits ISIC) share of employment of Foods, Paper and Chemicals, and a reduction in Textiles, Basic metals and Machinery products. At 3 digits the increase is especially true for 311 (Food products), 313 (Beverages), 352 (Other chemicals) and 356 (Plastics). The decrease corresponded to 321, Textiles; 371, Iron and Steel; 382 (Non-electrical machinery) and 384 (Transport equipment).

Table II-5 show employment indexes through time which in the

---

[26]For additional discussion see Beccaria, L., (1993), "Restructuración, empleo y salarios en la Argentina", in Kosacoff, B., Editor, (1993), op. cit..

[27]The census of 1984 showed inconsistencies related to high inflation and incidence of financial costs, so the conclusions involving it must be looked at with caution.

average have a declining trend in the 80's, with a leading role played by Food products; Paper products; Basic chemicals; and Basic metals. Let us look closely at Table II-5 calculating the change in employment of the periods 1983-86 and 1987-89. In the average the change in the former was -5% and of -7% in the latter (this figure would become -12% if 1990 is taken into account). As expected the dispersion of those figures at the sector level is high, for example, at 3 digits of the ISIC even high positive increases are found for (1983-86) in Beverages (15%), Ceramics (6%) and Scientific equipment (12%); while in 1987-89 (a recession period) the high positive rates corresponded to Paper (14%), Petroleum refineries (15%), Glass (9%) and Non-metallic minerals (39%). In 1991/92 the average index was again 5% below the 1990 level, with dispersion higher at 2 digits of the ISIC especially in 1992. In general, the flexibility of labor in the cycles was important in identifying the sources of productivity change. Also, the strong employment declines in manufacturing are not independent of the increase in overall unemployment rates, which from an average of 5.9% in 1985-87 climbed to 7.6% in 1989-90.

Regarding the participation of women in the labor force, the indexes of participation have increased through time along with a decrease in the indexes for men. About manufacturing industry, by the late 40's concentration of women in manufacturing activities was important (about 1/3), witn 2/3 of them working in the Textile industry. The changes introduced in the capital intensity of manufacturing since the 50's affected the overall employment

absorption, reducing also the participation of women very strongly: 26% in 1960, 21% in 1970 and 18% in 1980. At the same time, some survey data for 1985 shows that around 80% of the workers of the informal textile industry were women, reinforcing their precarious situation. By the end of the 80's another important share of the women's labor force left manufacturing moving to services or increasing the unemployment rate.[28]

C.PRODUCTIVITY AND PERFORMANCE

In 1984, census data (Table II-4) show the highest relative value added per employee at 2 digits of the ISIC in Chemicals and Basic metals.[29] Within those sectors, at 3 digits of the same classification higher than average values corresponded to Chemicals (351/352), Petroleum products (353/354), and Basic metals (371/372). This has to be compared with the outcome for 1973 where at 2 digits the highest productivities are the same as those identified in 1984. At 3 digits a change is found only for 355, Rubber products, which is also showing higher than average value added per worker.

Intending to complement census cross-sections with time series data, Table IV-5 refers to productivity indexes for the period

---

[28]For further discussion and references see Garcia de Fanelli, A.M., (1991), "Empleo femenino en la Argentina: de la modernización de los 60's a la crisis de los 80's", Desarrollo Economico, Number 123.

[29]Being a simple ratio of value added and employment, those productivity indexes reflect the effect of factors not included, mainly capital, for this reason they might also be used as a proxy for capital intensity.

1983/90 using indexes of production and employment at 3 digits of the ISIC (base year 1970). This data confirms the pattern of high value added per worker referred in Table II-4 (for Chemicals and Basic metals), to those sectors Textiles and Machinery were added. The 1991/92 data at 2 digits has used 1990 as the base year, then comparisons would be also affected by the change in weights.

With such a strong variability in production changes, as mentioned earlier, this becomes the main short run basis for changes in productivity, in some years reinforced by the strong trend in the reduction of employment. Concerning the relationship of productivity and production indexes, a statistical significant correlation was found in cross sections (involving 27 sectors of the ISIC at 3 digits) of selected growth (1983, 1986) and recession (1989, 1990) years, showing the key role played by production performance as exogenous variable of changes in productivity across industries. The same strong relationship was found, when the correlation was performed using the changes of productivity and production of the periods 1983-86 and 1987-90, instead of the isolated indexes for each year.

During the 80's, fluctuations in the level of productivity are seen in every branch of manufacturing, with 1989 showing the lowest point reached by the indexes, from which an increase started. Figures for 1991/92 represent an increase in productivity of 22% in two years, higher than average increase corresponded to Textiles (25%), Wood (55%), Non-metallic minerals (57%), and Machinery and

equipment (45%). Looking back at the 80's at two digits[30] (Table II-6) for the performance of those 1991/92 leaders in productivity; the growth period 1983-86 show their poor performance compared with the figure attained by Chemicals (16%), (the average was 10%), showing a difference in the sectorial sources of productivity in each growth period. In the recession period (1987-90) the fall in productivity indexes was the highest in Machinery (31%), compared to an average fall of 11%.

Summarizing, a declining trend was observed in employment since 1983, either in growth or recession years (Table II-6): (1983-86, -4.9%), (1987-90, -11%), and (1991-92, -4.6%). In all the periods above mentioned the sectors showing a higher than average decline in employment were Textiles and Machinery. In the last period the adjustment was strong for Basic metals (Iron and Steel) of -24%. The leading sectors were not the same along the 80's and early 90's. In the 1983-86 growth period, productivity increases of Chemicals (16%) and Foods (13%) were above the average rate. In the recession period higher than average declines corresponded to Machinery (-31%), Non-metallic minerals (-29%), Wood (-23%) and Textiles (-12%). In the next growth period (1991/92), the sectors with the stronger decline in the prior period registered the highest growth rates in output per worker.

As to the factor intensity of industrial activity, Table IV-7 compares the share of wages and salaries in value added and the

---

[30]This was possible by using 1984 employment data as weights to estimate productivity and employment changes at two digits.

capital intensity (horse power installed per employee) for census data of 1973 and 1984. Regarding the HP/E index, there is an increase in the average between census years. At two digits the index appears higher than average values in both years for Wood; Paper; Chemicals; Non-metallic minerals; and Basic metals. In all cases, except in Chemicals, showing a strong increase in 1984. At 3 digits (within those sectors), higher than average values are found (in both years) in 331, Wood products; 341, Paper products; 351, Basic chemicals; 353/354/355, Petroleum and rubber products; 369, Non-metallic products; 371/372, Basic metals (Iron and steel and Non-ferrous metals). Also here, strong increases were found in 1984 compared with 1973, except in Petroleum and rubber products.

Table II-7 also based on census data presents estimates of the share of wages and salaries in value added, which might be used as an indirect index of change in gross profitability. At two digits, the comparison shows an increase in Wood, Non-metallic minerals, Basic metals, Machinery and equipment; decreasing in Foods, Textiles, Paper and Chemicals. Intercensal data show strong changes in capital intensity (using HP as a proxy of capital), and of wage shares in value added; some of them with a negative association, as expected, others could not be properly discussed at this level of aggregation.

That increase in capital intensity requires some comments about the introduction and adaptation of new technologies along the industrialization process. After the 30's the impulse of the so called light industries was done using simple technics in small

units of production. Later on, progress was made towards the production of metal-mechanic and chemical goods which were using a fordist model in the developed world. Those sectors were supported by public enterprises as a further development of production for national defense. By the end of the 50's the development of automobiles, capital goods, and basic inputs (steel, paper, oil) required the management of more complex technologies and investments where those technics were embodied. The technological model was the outcome of adaptive adjustments by the local firms. The initiatives of the public sector were important, among them the technological institutes, in agriculture, and industry. The news concerning electronics and information, the transition from fordism to more flexible production schemes and the changes in domestic policies affected also the role of technology, reducing the scope for domestic firms regarding adaptation and human capital development within the plants.[31]

D.OWNERSHIP AND INVESTMENT PATTERNS

The analysis of investment patterns is based on data from a Survey of around 600 firms made by the ECLA office of Buenos Aires[32] for the period 1983-88. Table II-8 includes the basic

---

[31]For further discussion and references see Bisang, R., (February 1994), "Industrialización e incorporación del progreso técnico en la Argentina", Documento de Trabajo 14, Fundación Union Industrial Argentina.

[32]CEPAL, (Febrero 1993), "Las inversiones en la industria Argentina, El comportamiento heterogéneo de las principales empresas en una etapa de incertidumbre macroeconomica (1983-88)",

sectoral features: a high concentration is found in the Chemical industry (46%), especially in few activities explaining large part of this, the most important being Petroleum refineries with 24% followed by Basic chemicals (11%). With a smaller amount a high concentration is also found in Basic metals, (the Steel industry with 12%); similar shares were found in Processed foods, 1/4 of which explained by Vegetable oils; in Machinery and equipment 4.8% out of a total of 12% is explained by the Automobile industry. There is a clear dominance of projects related to intermediate goods (Chemicals, Basic metals and Cellulosic paste), followed by Automobiles and Food industries.

Regarding the composition of investments, the outstanding fact is the importance of the share of domestically produced Machinery which is around half of total Machinery except in Foods and Paper where the domestic share is important, and others like Textiles and Wood with a high imported proportion. The highest share in construction expenditures (of Pulp and paper) is related with the building of new plants as could be seen from Table II-9.

Table II-9 shows different aspects of the investment effort of the 80's, mostly related to the type of project and the importance of the industrial promotion system in sharing some of the costs. New plants were constructed mostly in Textiles, Paper and Chemicals, while high values corresponded to increased capacity especially in Chemicals, Non-metallic minerals, Basic metals,

---

Working Paper 49.

Machinery, Foods and Textiles. New equipment was also important in Foods and Textiles. The last column of this table shows the important role of the promotion system, with an average share of the 29% of the value of investment projects, involved primarily in Paper (61%), Basic metals (57%), Wood (56%), Textiles (40%) and Non-metallic minerals (36%).

Using as a measure of size the amount of sales, projects of smaller firms were biased towards new plants with a greater share of industrial promotion involvement, with larger producers being oriented to increase capacity of production.

Regarding ownership, in the last two decades the Argentine economy underwent important structural changes. Today the domestic economy is more open to international competition and to trade discriminatory arrangements, with an aggressive policy of privatization of public enterprises. The multinational corporations were important since early industrialization efforts, increasing their share in industrial GDP from less than 20% in the 50's to around 1/3 in the 70's. They were characterized by producing in larger plants with higher productivity and capital intensity than local firms; their technologies were a novelty in the domestic market, despite of the fact that some were not in the frontier. The regulatory framework for foreign enterprises changed since 1976, in the period 1976-1983, some privileged sectors, like financial activities and oil producers were introduced, but this was compensated by the exit of several others. Since 1989, investments in areas restricted in the past were allowed, like

defense, public services, energy, etc.. Regarding the privatization program, around 40% of net assets are in the hands of foreign firms. In the 80's multinational corporations exported in activities related to natural resources or to ISI with intra-corporative trade. Today, they increased the level of trade, as well as the intra-corporative share. It is known that the Mercosur agreement is among the priorities set by them.[33]

E.TRADE IN MANUFACTURES

Continuing the discussion of the resource content of trade started in chapter I, the analysis of trade in manufactures would be organized here according to, on the one hand, their closeness to Agriculture, as: Manufactures of agricultural origin, Manufactures of Non-agricultural origin and, on the other hand, Fuels.[34] Within those categories the analysis continues according to sectoral origin (ISIC 2 digits).

At a yearly basis strong declines in exports corresponded to growth years (1983, 1986, 1991), and high increases to recession years like 1985 or 1989, suggesting counter-cyclical behavior. This is so given the different rewards in the domestic and international markets, during growth years there is not only reduction of exports but also an increase in complementary imports

---

[33]For further discussion see Kosacoff, B. y Bezchinsky, G. (1993), "De la sustitución de imporaciones a la globalización. Las empresas transnacionales en la industria Argentina", in Kosacoff, B., Editor, (1993), op. cit..

[34]This is a slightly modified version of the classification made by the ECLAC office of Buenos Aires.

affecting the trade balance.

The share of manufacturing exports in total exports has fluctuated through the 80's, with extreme values of 53% (1983) and 82% (1989), being 74% in 1991. Table II-10 show that manufacturing exports in current dollars increased 70% in the period 1980-91, the highest increase for non-agricultural origin (92%), but still manufactures of agricultural origin are 59% of total manufacturing exports in 1991. Of this 81% is provided by Foods fluctuating around 80% since 1980, half of this was provided by exports of Vegetable oils in 1991. Regarding exports of non-agricultural origin, an increased proportion (vis-a-vis 1980) takes place in Chemicals up to 27% in 1991, a very strong increase in Basic Metals and a reduction of Machinery and equipment. Here the items involved were mainly Petrochemicals, Steel tubes, Machinery and Automobiles (including spare parts).

Table II-11 concerns the behavior of imports during the same period using the same classification used to analyze exports. The share of manufacturing imports in total imports has been higher than 80%, (89% in 1991). Table II-11 shows that manufacturing imports of non-agricultural origin is 86% of manufacturing imports in 1991, but still manufactures of agricultural origin are 10% of total manufacturing imports. Of this in 1991 43% is accounted for Foods (35% in 1980), and 31% by Textiles (24% in 1980), and Wood and Paper declining. Regarding imports of non-agricultural origin, what is taking place is an increased proportion of Chemicals up to 30% in 1991, with a declining share in Machinery and equipment of

54%, compared with 62% in 1980.

The combination of Tables II-10 and II-11 for the period 1980/91 leads to the computation of net exports by origin, the outcome is: positive values for manufactures of agricultural-origin (Foods and Textiles), and negative balances for those of non-agricultural origin (mainly Chemicals and Machinery).

TABLE II-1
ARGENTINA, GROWTH OF MANUFACTURING VALUE ADDED AT 1986 PRICES
(1980-91), (INDEX 1986=100), ISIC (2 AND 3 DIGITS),
FOR SELECTED YEARS

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
3	TOTAL INDUSTRY	105.6	97.1	100.0	89.7	100.3
31	FOOD, BEVERAGE & TOBACCO	89.1	89.9	100.0	94.3	105.7
32	TEXTILES & GARMENTS	91.6	92.9	100.0	89.7	94.7
33	WOOD AND FURNITURE	104.9	91.4	100.0	90.0	103.9
34	PAPER AND PRINTING	89.2	96.3	100.0	92.7	98.3
35	CHEMICALS	104.0	100.7	100.0	91.3	107.3
36	NON-METALLIC MINERALS	136.5	112.9	100.0	84.6	95.2
37	BASIC METALS	99.3	99.4	100.0	103.8	112.8
38	MACHINERY AND EQUIPMENT	129.8	100.1	100.0	81.6	89.7
39	MISCELLANEOUS PRODUCTS	105.6	97.1	100.0	89.7	100.3
311/12	FOOD PRODUCTS	86.1	92.1	100.0	101.5	113.3
313	BEVERAGES	97.9	83.6	100.0	70.2	88.6
314	TOBACCO	94.0	86.7	100.0	85.8	88.4
321	TEXTILES	90.6	90.9	100.0	91.3	103.4
322	GARMENTS	82.6	96.7	100.0	90.7	72.5
323	LEATHER PRODUCTS	94.8	88.5	100.0	103.3	102.8
324	FOOTWEAR	117.7	96.9	100.0	66.0	102.3
331	WOOD PRODUCTS	107.5	97.4	100.0	97.7	98.4
332	FURNITURE	101.0	82.2	100.0	78.2	112.4
341	PAPER PRODUCTS	77.1	90.0	100.0	93.6	113.7
342	PRINTING & PUBLISHING	98.8	101.2	100.0	92.0	86.1
351	BASIC CHEMICALS	67.3	91.5	100.0	109.5	110.3
352	OTHER CHEMICALS	121.8	110.7	100.0	69.4	97.6
353	PETROLEUM REFINERIES	115.8	103.7	100.0	100.0	115.8
354	PETROLEUM DERIVATIVES	86.6	90.9	100.0	129.1	125.8
355	RUBBER PRODUCTS	101.9	98.9	100.0	79.7	92.0
356	PLASTICS	57.3	73.9	100.0	67.9	86.7
361	POTTERY & CHINA	96.9	104.1	100.0	79.0	115.1
362	GLASS PRODUCTS	104.7	92.0	100.0	88.5	64.8
369	NON-METALLIC PRODUCTS	155.9	121.9	100.0	84.5	101.4
371	BASIC METALS,IRON/STEEL	104.2	104.9	100.0	104.1	115.2
372	NON-FERROUS METALS	84.0	82.1	100.0	102.8	105.5
381	METAL PRODUCTS	125.1	110.5	100.0	88.9	114.8
382	NON-ELECTRIC MACHINERY	124.6	98.7	100.0	88.5	106.5
383	ELECTRIC EQUIPMENT	112.9	98.5	100.0	71.7	58.8
384	TRANSPORT EQUIPMENT	145.5	93.2	100.0	77.1	76.8
385	PROFESSIONAL EQUIPMENT	140.3	106.8	100.0	88.6	112.3
390	MISCELLANEOUS	105.6	97.1	100.0	89.7	100.3

SOURCE: ANNEX TABLE A-4

TABLE II-2
ARGENTINA, MANUFACTURING COMPOSITION OF VALUE ADDED AT 1986 MARKET PRICES (1980-91), ISIC (2 AND 3 DIGITS), FOR SELECTED YEARS

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
3	TOTAL INDUSTRY	100.0	100.0	100.0	100.0	100.0
31	FOOD, BEVERAGE & TOBACCO	19.5	21.4	23.1	24.2	24.3
32	TEXTILES & GARMENTS	10.9	12.0	12.6	12.6	11.9
33	WOOD AND FURNITURE	2.4	2.3	2.4	2.4	2.5
34	PAPER AND PRINTING	4.3	5.0	5.1	5.2	5.0
35	CHEMICALS	24.2	25.5	24.6	25.0	26.3
36	NON-METALLIC MINERALS	5.7	5.1	4.4	4.2	4.2
37	BASIC METALS	3.5	3.8	3.7	4.3	4.1
38	MACHINERY AND EQUIPMENT	28.6	24.0	23.3	21.2	20.8
39	MISCELLANEOUS PRODUCTS	0.9	0.9	0.9	0.9	0.9
311/12	FOOD PRODUCTS	13.0	15.2	16.0	18.1	18.1
313	BEVERAGES	3.3	3.1	3.6	2.8	3.2
314	TOBACCO	3.1	3.1	3.5	3.3	3.0
321	TEXTILES	5.7	6.2	6.6	6.8	6.9
322	GARMENTS	2.7	3.4	3.4	3.5	2.5
323	LEATHER PRODUCTS	1.0	1.1	1.2	1.3	1.2
324	FOOTWEAR	1.4	1.3	1.3	1.0	1.3
331	WOOD PRODUCTS	1.5	1.5	1.5	1.6	1.4
332	FURNITURE	0.9	0.8	0.9	0.8	1.1
341	PAPER PRODUCTS	1.6	2.1	2.2	2.3	2.5
342	PRINTING & PUBLISHING	2.7	3.0	2.8	2.9	2.4
351	BASIC CHEMICALS	2.4	3.6	3.8	4.6	4.2
352	OTHER CHEMICALS	6.3	6.2	5.5	4.2	5.3
353	PETROLEUM REFINERIES	12.8	12.5	11.7	13.0	13.5
354	PETROLEUM DERIVATIVES	0.2	0.2	0.2	0.3	0.3
355	RUBBER PRODUCTS	1.5	1.6	1.5	1.4	1.4
356	PLASTICS	1.0	1.4	1.9	1.4	1.6
361	POTTERY & CHINA	0.6	0.6	0.6	0.5	0.7
362	GLASS PRODUCTS	1.0	0.9	1.0	1.0	0.6
369	NON-METALLIC PRODUCTS	4.2	3.6	2.8	2.7	2.9
371	BASIC METALS, IRON/STEEL	2.8	3.0	2.8	3.2	3.2
372	NON-FERROUS METALS	0.7	0.7	0.9	1.0	0.9
381	METAL PRODUCTS	7.3	7.0	6.1	6.1	7.0
382	NON-ELECTRIC MACHINERY	5.2	4.5	4.4	4.3	4.7
383	ELECTRIC EQUIPMENT	4.8	4.5	4.5	3.6	2.6
384	TRANSPORT EQUIPMENT	10.7	7.4	7.8	6.7	5.9
385	PROFESSICNAL EQUIPMENT	0.7	0.6	0.5	0.5	0.6
390	MISCELLANEOUS	0.9	0.9	0.9	0.9	0.9

SOURCE: ANNEX TABLE A-6

TABLE II-3

ARGENTINA, YEARLY GROWTH OF MANUFACTURING VALUE ADDED AT 1986 PRICES (1980-91), ISIC (2 AND 3 DIGITS), FOR SELECTED YEARS

ISIC	DESCRIPTION	1981	1983	1986	1989	1991
3	TOTAL INDUSTRY	-12.0	7.4	11.4	-7.3	11.7
31	FOOD, BEVERAGE & TOBACCO	-6.1	5.8	8.2	-2.2	11.0
32	TEXTILES & GARMENTS	-9.6	12.5	12.2	-2.8	15.2
33	WOOD AND FURNITURE	-17.2	20.2	15.2	-5.4	35.5
34	PAPER AND PRINTING	-10.5	16.5	13.8	-1.3	9.8
35	CHEMICALS	-5.9	4.3	16.2	-6.6	4.3
36	NON-METALLIC MINERALS	-14.4	2.9	22.7	-12.3	25.6
37	BASIC METALS	-18.6	10.3	27.9	-8.3	3.1
38	MACHINERY AND EQUIPMENT	-20.5	7.5	4.6	-15.9	18.5
39	MISCELLANEOUS PRODUCTS	-12.0	7.4	11.4	-7.3	11.7
311/12	FOOD PRODUCTS	-5.1	6.0	7.9	-1.4	9.9
313	BEVERAGES	-8.8	3.9	15.0	-9.8	26.7
314	TOBACCO	-7.4	6.3	2.9	0.7	1.2
321	TEXTILES	-12.5	11.7	20.9	-5.2	16.5
322	GARMENTS	-8.2	19.0	4.2	0.7	-3.4
323	LEATHER PRODUCTS	4.7	1.3	-4.3	8.3	17.6
324	FOOTWEAR	-11.1	9.8	11.1	-10.8	60.7
331	WOOD PRODUCTS	-25.3	22.7	6.9	-6.6	11.0
332	FURNITURE	-3.9	15.8	30.8	-3.1	92.4
341	PAPER PRODUCTS	-9.3	18.0	15.4	-6.3	22.6
342	PRINTING & PUBLISHING	-11.3	15.5	12.6	3.0	-0.9
351	BASIC CHEMICALS	-8.3	9.5	19.5	-2.4	-1.1
352	OTHER CHEMICALS	-3.3	-3.8	9.3	-28.4	20.2
353	PETROLEUM REFINERIES	-4.2	3.5	11.7	7.2	1.6
354	PETROLEUM DERIVATIVES	-10.8	12.2	5.4	10.5	25.4
355	RUBBER PRODUCTS	-31.9	30.0	35.0	-20.9	-10.3
356	PLASTICS	1.1	13.8	60.5	-27.0	8.4
361	POTTERY & CHINA	-22.6	22.4	25.9	-7.6	36.9
362	GLASS PRODUCTS	-11.8	0.0	44.9	-4.3	-30.3
369	NON-METALLIC PRODUCTS	-13.9	0.8	16.0	-15.7	48.9
371	BASIC METALS,IRON/STEEL	-18.8	12.5	28.0	-11.6	3.5
372	NON-FERROUS METALS	-17.7	2.3	27.3	4.4	1.8
381	METAL PRODUCTS	-10.6	-0.4	-2.4	-10.8	32.3
382	NON-ELECTRIC MACHINERY	-14.2	7.8	-7.9	-17.3	11.3
383	ELECTRIC EQUIPMENT	-10.2	0.7	5.2	-21.5	-2.3
384	TRANSPORT EQUIPMENT	-36.0	22.6	20.6	-15.8	19.2
385	PROFESSIONAL EQUIPMENT	-5.7	-5.0	-1.2	-18.9	37.6
390	MISCELLANEOUS	-12.0	7.4	11.4	-7.3	11.7

SOURCE: ANNEX TABLE A-7

TABLE II-4
ARGENTINA, COMPOSITION OF MANUFACTURING VALUE ADDED AND EMPLOYMENT, RELATIVE VALUE ADDED PER EMPLOYEE (INDUSTRIAL CENSUS 1973 AND 1985), ISIC (2 AND 3 DIGITS)

3	INDUSTRY	VA (1973) 100.0	E (1973) 100.0	VA/E (1973) 100.0	VA (1984) 100.0	E (1984) 100.0	VA/E (1984) 100.0
31	FOODS	20.5	20.3	100.9	24.4	24.7	98.8
32	TEXTILES	12.1	17.2	70.4	12.4	15.6	79.4
33	WOOD	2.5	4.8	53.2	2.0	4.6	43.9
34	PAPER	4.6	4.7	98.6	5.4	5.5	98.2
35	CHEMICALS	20.0	9.5	211.8	22.8	11.7	195.4
36	NON-MET.MINERALS	4.6	6.3	73.0	4.2	5.8	71.4
37	BASIC METALS	8.8	5.8	151.1	5.9	4.1	144.4
38	MACHINERY	26.2	30.6	85.8	22.5	27.4	82.2
39	MISCELLANEOUS	0.5	0.8	66.3	0.4	0.6	63.4
311	FOOD PRODUCTS	13.5	16.1	83.9	17.7	19.3	91.4
312	FOOD PRODUCTS	1.4	0.9	153.3	1.5	1.4	107.6
313	BEVERAGES	4.9	2.6	189.1	3.1	3.4	92.0
314	TOBACCO	0.7	0.7	96.6	2.1	0.5	392.6
321	TEXTILES	8.1	9.9	81.4	7.8	7.6	102.6
322	GARMENTS	2.4	4.1	59.3	2.6	4.3	61.1
323	LEATHER PRODUCTS	0.6	1.0	57.7	1.0	1.5	62.9
324	FOOTWEAR	1.1	2.2	47.4	1.0	2.2	47.1
331	WOOD PRODUCTS	1.7	3.0	55.2	1.3	3.0	43.1
332	FURNITURE	0.9	1.8	50.0	0.7	1.6	45.2
341	PAPER PRODUCTS	2.3	2.1	107.0	2.8	2.5	111.4
342	PRINTING & PUBL.	2.4	2.6	91.6	2.6	3.0	87.3
351	BASIC CHEMICALS	4.1	2.1	197.9	5.2	2.1	244.5
352	OTHER CHEMICALS	5.7	3.4	168.5	5.0	4.5	111.3
353	PETROLEUM REFIN.	6.2	0.6	1,018.9	8.0	0.7	1,155.4
354	PETROLEUM DERIV.	0.2	0.1	160.6	0.5	0.2	253.3
355	RUBBER PRODUCTS	2.3	1.5	153.9	1.4	1.5	95.0
356	PLASTICS	1.3	1.7	79.6	2.7	2.7	100.5
361	POTTERY & CHINA	0.6	0.8	76.9	0.8	0.9	84.4
362	GLASS PRODUCTS	1.0	1.2	79.8	0.8	1.0	78.0
369	NON-METALLIC PROD.	3.1	4.4	70.4	2.6	3.9	66.6
371	BASIC METALS,IRON	7.7	4.8	160.3	4.5	3.5	129.3
372	NON-FERROUS MET.	1.1	1.0	106.8	1.4	0.6	227.2
381	METAL PRODUCTS	5.8	7.5	77.9	6.3	8.3	75.8
382	NON-ELEC.MACHIN.	5.3	6.2	86.3	4.6	5.3	86.4
383	ELECTRICAL EQUIP.	3.9	4.1	96.1	3.5	3.7	95.8
384	TRANSPORT EQUIP.	10.6	12.2	87.0	7.7	9.5	81.3
385	PROFESSIONAL EQ.	0.5	0.6	86.4	0.3	0.6	61.6
390	MISCELLANEOUS	0.5	0.8	66.3	0.4	0.6	63.4

SOURCE: Own estimates, based on data from Instituto Nacional de Estadística y Censos, "Censo Nacional Económico", 1974 and 1985. VA, value added; E, employment.

TABLE II-5
ARGENTINA, MANUFACTURING PRODUCTION, EMPLOYMENT AND PRODUCTIVITY (INDEX 1970=100), (1983-1990), FOR SELECTED YEARS

ISIC	DESCRIPTION	1983 PROD.	1983 EMPL.	1983 PROD/ EMPL.	1986 PROD.	1986 EMPL.	1986 PROD/ EMPL.	1989 PROD.	1989 EMPL.	1989 PROD/ EMPL.
3	INDUSTRY	110.8	75.4	146.9	115.9	71.7	161.6	99.7	66.4	150.2
311/2	FOOD PRODUCTS	107.6	101.9	105.6	111.7	96.0	116.4	111.7	82.1	136.1
313	BEVERAGES	115.1	93.4	123.2	168.8	106.9	157.9	140.7	103.9	135.4
314	TOBACCO	109.1	79.7	136.9	127.0	76.4	166.2	113.0	69.9	161.7
321	TEXTILES	92.7	52.7	175.9	93.1	50.3	185.1	84.3	47.7	176.7
322	GARMENTS	53.0	54.5	97.2	44.1	47.3	93.2	34.3	41.2	83.3
323	LEATHER PRODUCTS	89.7	100.0	89.7	92.1	94.6	97.4	86.1	86.0	100.1
324	FOOTWEAR	36.2	42.8	84.6	32.2	37.5	85.9	21.8	30.1	72.4
331	WOOD PRODUCTS	64.7	79.6	81.3	60.1	74.3	80.9	44.8	62.8	71.3
332	FURNITURE	84.0	62.6	134.2	88.0	55.6	158.3	76.2	45.4	167.8
341	PAPER PRODUCTS	114.7	95.0	120.7	115.7	95.9	120.6	104.6	109.0	96.0
342	PRINTING & PUBLISHING	79.8	66.9	119.3	82.7	65.2	126.8	68.3	52.5	130.1
351	BASIC CHEMICALS	150.6	82.9	181.7	165.9	82.9	200.1	139.1	83.1	167.4
352	OTHER CHEMICALS	122.3	71.6	170.8	151.6	66.3	228.7	117.4	54.3	216.2
353	PETROLEUM REFINERIES	120.2	98.1	122.5	119.6	100.0	119.6	135.9	115.1	118.1
354	PETROLEUM DERIVATIVES	89.4	75.4	118.6	90.4	67.5	133.9	102.6	62.2	165.0
355	RUBBER PRODUCTS	142.4	104.0	136.9	141.0	102.6	137.4	123.3	95.7	128.8
356	PLASTICS	124.3	153.8	80.8	120.1	142.5	84.3	78.0	127.2	61.3
361	POTTERY & CHINA	79.0	73.8	107.0	67.4	78.5	85.9	60.5	73.1	82.8
362	GLASS PRODUCTS	88.3	64.7	136.5	78.8	48.9	161.1	73.0	53.4	136.7
369	NON-METALLIC PRODUCTS	99.4	75.8	131.1	86.5	65.4	132.3	67.7	90.9	74.5
371	BASIC METALS, IRON/STEEL	223.3	96.4	231.6	201.0	97.9	205.3	211.6	95.5	221.6
372	NON-FERROUS METALS	128.8	113.4	113.6	130.7	112.6	116.1	84.9	105.3	80.6
381	METAL PRODUCTS	123.8	75.4	164.2	124.3	67.7	183.6	74.8	65.9	113.5
382	NON-ELECTRIC MACHINERY	104.2	46.3	225.1	81.5	45.3	179.9	71.4	36.3	196.7
383	ELECTRIC EQUIPMENT	71.8	49.2	145.9	89.8	45.9	195.6	59.7	40.1	148.9
384	TRANSPORT EQUIPMENT	92.0	73.4	125.3	93.5	69.5	134.5	66.8	64.0	104.4
385	PROFESSIONAL EQUIPMENT	127.9	62.0	206.3	131.1	69.5	188.6	48.6	70.4	69.0

MANUFACTURING PRODUCTION, EMPLOYMENT AND PRODUCTIVITY (INDEX 1990=100), 1991 AND 1992

ISIC	DESCRIPTION	1991 PROD.	1991 EMPL.	1991 PROD/ EMPL.	1992 PROD.	1992 EMPL.	1992 PROD/ EMPL.
3	INDUSTRY	104.5	94.9	110.1	116.0	95.4	121.6
31	FOOD, BEVERAGE & TOBACCO	109.2	97.9	111.5	119.9	101.6	118.0
32	TEXTILES & GARMENTS	109.3	93.7	116.6	114.0	91.2	125.0
33	WOOD AND FURNITURE	147.0	99.9	147.1	170.6	110.2	154.8
34	PAPER AND PRINTING	91.2	95.0	96.0	108.8	100.1	108.7
35	CHEMICALS	101.8	98.5	103.4	107.2	96.8	110.7
36	NON-METALLIC MINERALS	120.9	91.4	132.3	144.5	92.1	156.9
37	BASIC METALS	88.8	90.1	98.6	83.4	75.6	110.3
38	MACHINERY AND EQUIPMENT	104.0	91.4	113.8	131.2	90.6	144.8
39	MISCELLANEOUS PRODUCTS	104.5	92.9	112.5	116.0	113.5	102.2

SOURCE: ANNEX TABLE A-8

TABLE II-6

ARGENTINA, INCREASE IN PRODUCTIVITY AND EMPLOYMENT, IN PERIODS OF GROWTH (1983-86, 1991-92) AND RECESSION (1987-90), 2 DIGITS ISIC

		(1983-86)		(1987-90)		(1991-92)	
		PROD/ EMPL.	EMPL.	PROD/ EMPL.	EMPL.	PROD/ EMPL.	EMPL.
3	INDUSTRY	10.0	-4.9	-11.1	-12.4	21.6	-4.6
31	FOODS	12.9	-3.0	10.4	-16.4	18.0	1.6
32	TEXTILES	2.4	-8.1	-12.0	-13.0	25.0	-8.8
33	WOOD	5.9	-8.2	-23.0	-23.7	54.8	10.2
34	PAPER	3.4	-1.0	-8.5	-7.9	8.7	.1
35	CHEMICALS	16.0	-4.8	-7.2	-12.2	10.7	-3.2
36	NON-MET.MINERALS	.6	-12.4	-29.1	16.3	56.9	-7.9
37	BASIC METALS	-9.4	1.2	-6.2	-5.3	10.3	-24.4
38	MACHINERY	6.7	-6.0	-30.5	-16.3	44.8	-9.4

SOURCE: Own estimates for 1983-86 and 1987-90, based on ANNEX TABLE A-8 and TABLE II-4 for employment weights; and TABLE II-5 for 1991-92.

TABLE II-7

ARGENTINA, SHARE OF WAGES IN VALUE ADDED AND CAPITAL INTENSITY (HP/EMPLOYMENT), (INDUSTRIAL CENSUS 1973 AND 1985), ISIC (2 AND 3 DIGITS)

		W/VA (1973)	HP/E (1973)	W/VA (1984)	HP/E (1984)
3	INDUSTRY	32.4	6.1	32.5	8.5
31	FOOD, BEVERAGE & TOBACCO	28.9	6.8	26.8	7.6
32	TEXTILES & GARMENTS	35.3	3.2	34.9	4.7
33	WOOD AND FURNITURE	36.5	8.1	41.3	9.9
34	PAPER AND PRINTING	36.3	6.8	35.7	12.7
35	CHEMICALS	21.3	10.4	20.3	10.1
36	NON-METALLIC MINERALS	37.6	7.9	42.2	13.1
37	BASIC METALS	28.4	6.8	37.6	24.2
38	MACHINERY AND EQUIPMENT	41.5	4.9	45.1	6.4
39	MISCELLANEOUS PRODUCTS	34.3	3.9	38.1	3.4
311	FOOD PRODUCTS	32.4	6.0	28.1	7.4
312	FOOD PRODUCTS	22.4	11.7	27.0	9.8
313	BEVERAGES	20.0	10.6	30.0	8.1
314	TOBACCO	38.1	2.8	10.0	4.8
321	TEXTILES	35.4	4.3	31.4	6.7
322	GARMENTS	31.7	0.9	37.1	1.0
323	LEATHER PRODUCTS	38.6	5.9	43.1	8.9
324	FOOTWEAR	41.1	1.7	47.9	2.0
331	WOOD PRODUCTS	32.9	9.6	42.1	11.4
332	FURNITURE	43.2	5.7	39.9	7.0
341	PAPER PRODUCTS	31.7	11.9	31.7	24.8
342	PRINTING & PUBLISHING	40.8	2.6	40.0	2.5
351	BASIC CHEMICALS	24.1	13.4	18.0	18.8
352	OTHER CHEMICALS	31.3	4.6	36.6	4.7
353	PETROLEUM REFINERIES	7.2	41.3	5.5	33.9
354	PETROLEUM DERIVATIVES	19.2	10.4	14.1	9.5
355	RUBBER PRODUCTS	24.2	10.7	43.5	9.5
356	PLASTICS	31.0	7.2	27.7	6.5
361	POTTERY & CHINA	44.4	3.4	38.4	5.7
362	GLASS PRODUCTS	40.4	3.4	50.6	6.6
369	NON-METALLIC PRODUCTS	35.5	9.9	40.7	16.6
371	BASIC METALS, IRON/STEEL	27.5	6.4	43.5	26.2
372	NON-FERROUS METALS	34.4	8.7	19.3	13.0
381	METAL PRODUCTS	37.1	5.2	41.5	7.0
382	NON-ELECTRICAL MACHINERY	39.7	6.0	40.3	6.2
383	ELECTRICAL EQUIPMENT	40.4	3.3	41.9	3.7
384	TRANSPORT EQUIPMENT	45.3	5.0	51.8	7.4
385	PROFESSIONAL EQUIPMENT	41.4	1.8	55.8	2.9
390	MISCELLANEOUS	34.3	3.9	38.1	3.4

SOURCE: Own estimates, based on Instituto Nacional de Estadística y Censos, "Censo Nacional Económico", 1974 and 1985. W, Wages and salaries; VA, value added; HP, horse power installed; E, employment.

TABLE II-8
FIXED INVESTMENTS IN MANUFACTURING, TOTALS AND SHARES OF THE PERIOD 1983-88 (SURVEY OF 567 FIRMS)

	VALUE (US$ MILL)	SHARE (%)	SHARE OF MACHINERY DOMESTIC	IMPORTED	CONSTRUC-TION
31 FOODS	1,190.9	12.5	33.7	13.4	25.2
32 TEXTILES	360.2	3.8	14.8	44.2	19.9
33 WOOD	31.0	0.3	23.1	38.3	17.9
34 PAPER	609.6	6.4	29.9	16.9	44.0
35 CHEMICALS	4,425.8	46.4	24.0	24.8	37.2
36 NON-MET. MINERALS	295.0	3.1	32.2	29.1	24.2
37 BASIC METALS	1,301.4	13.6	26.9	27.4	12.8
38 MACHINERY	1,162.0	12.2	38.6	30.7	21.9
39 MISCELLANEOUS	1.0	...	55.0	37.6	7.4
IND. CONSTRUCTIONS	164.7	1.7	55.6	8.1	21.2
TOTAL	9,541.4	100.0	28.2	24.5	16.3

PRINCIPAL SECTORS (5 Digits ISIC)

Petroleum refineries	24.3
Steel industry	12.2
Basic chemicals	10.6
Automobile industry	4.8
Cellulosic paste	3.9
Vegetable oils	3.4
Artificial Fibers	2.5
Other chemicals	2.0
Industrial constructions	1.7
Milk industry	1.7
TOTAL	67.1

SOURCE: Based on data provided in CEPAL (Febrero 1993), "Las inversiones en la industria Argentina, El comportamiento heterogéneo de las principales empresas en una etapa de incertidumbre macroeconomica (1983-88)", Working Paper 49.

TABLE II-9
PRINCIPAL TYPES OF INVESTMENT PROJECTS IN MANUFACTURING, TOTALS AND SHARES OF THE PERIOD 1983-88 (SURVEY OF 574 FIRMS)

	VALUE (US$MILL)	SHARE OF WHICH WAS NEW PLANT	INCREASED CAPACITY	NEW EQUIPMENT	PROMOTED
31 FOODS	902.3	5.5	33.0	27.1	12.9
32 TEXTILES	335.9	18.6	24.0	30.3	40.3
33 WOOD	22.7		11.6	18.1	55.6
34 PAPER	524.6	47.8	16.5	15.9	61.3
35 CHEMICALS	4,157.9	16.5	58.0	12.7	25.5
36 NON-MET. MINERALS	324.8		46.1	16.5	36.2
37 BASIC METALS	1,059.1		60.2	14.0	56.8
38 MACHINERY	1,131.5	1.8	46.1	17.4	14.7
39.MISCELLANEOUS & IND. CONSTRUCTIONS	165.3			41.8	1.6
TOTAL	8,624.0	12.4	48.6	16.6	29.4
SIZE OF FIRMS					
Small	605.3	55.3	14.0	15.3	71.4
Small-medium	960.5	12.7	25.1	29.3	35.9
Medium	934.2	9.0	33.6	27.3	30.6
Medium-large	2,072.1	19.6	56.1	12.2	32.7
Large	4,051.9	3.1	58.7	13.5	19.6

SOURCE: Based on data provided in CEPAL (Febrero 1993), "Las inversiones en la industria Argentina, El comportamiento heterogéneo de las principales empresas en una etapa de incertidumbre macroeconomica (1983-88)", Working Paper 49. Total sales in 1988 were used as a measure of size, in approximate million dollar values it would be: Small, less than 9.4; Small-medium, 9.4 and 25; Medium, 25 and 50; Medium-large, 50 and 125; Large, more than 125.

TABLE II-10

ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE & FUELS), (1980-1991), FOR SELECTED YEARS

COMPOSITION OF EXPORTS (percentage)

DESCRIPTION	1980	1983	1986	1989	1991
AGRICULTURAL ORIGIN	65.4	67.1	64.7	58.2	61.0
NON-AGRICULTURAL ORIGIN	27.9	24.2	31.4	37.6	31.6
FUELS	6.7	8.8	3.9	4.2	7.4
TOTAL	100.0	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

DESCRIPTION	1980	1983	1986	1989	1991
AGRICULTURAL ORIGIN	3,403	2,805	2,924	4,550	5,402
NON-AGRICULTURAL ORIGIN	1,455	1,012	1,419	2,941	2,799
FUELS	347	366	178	330	656
TOTAL	5,205	4,183	4,521	7,821	8,856

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	77.5	84.4	81.0	81.9	81.2
32	TEXTILES	22.1	15.0	17.9	15.6	17.5
33	WOOD	0.1	0.1	0.2	0.4	0.3
34	PAPER	0.3	0.6	1.0	2.1	1.0
	TOTAL	100.0	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	2,638	2,366	2,367	3,729	4,386
32	TEXTILES	750	420	522	710	948
33	WOOD	5	3	5	17	14
34	PAPER	10	16	29	95	54
	TOTAL	3,403	2,805	2,924	4,550	5,402

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	0.0	0.0	0.0	0.0	0.0
32	TEXTILES	9.6	2.6	2.8	4.5	3.4
33	WOOD	0.3	0.1	0.1	0.2	0.3
34	PAPER	3.8	2.0	1.7	2.0	2.1
35	CHEMICALS	22.5	34.8	24.4	26.3	26.9
36	NON-MET.MINERALS	2.0	1.3	1.6	2.6	2.9
37	BASIC METALS	19.6	27.0	30.4	39.3	29.2
38	MACHINERY	41.5	32.0	38.7	24.8	34.7
39	MISCELLANEOUS	0.8	0.1	0.2	0.3	0.4
	TOTAL	100.0	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	0	0	0	1	1
32	TEXTILES	140	27	40	132	96
33	WOOD	4	1	2	6	9
34	PAPER	55	20	24	59	59
35	CHEMICALS	327	352	346	772	752
36	NON.MET.MINERALS	28	13	23	76	82
37	BASIC METALS	285	274	432	1,157	816
38	MACHINERY	604	324	550	729	972
39	MISCELLANEOUS	11	2	2	9	12
	TOTAL	1,455	1,012	1,419	2,941	2,799

SOURCE: ANNEX TABLE A-9.

TABLE II-11
ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE AND FUELS), (1980-1991), FOR SELECTED YEARS

COMPOSITION OF IMPORTS (percentage)

DESCRIPTION	1980	1983	1986	1989	1991
AGRICULTURAL ORIGIN	10.3	7.1	8.3	5.0	9.7
NON-AGRICULTURAL ORIGIN	84.6	88.7	88.6	90.0	86.0
FUELS	5.1	4.2	3.1	5.1	4.3
TOTAL	100.0	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

DESCRIPTION	1980	1983	1986	1989	1991
AGRICULTURAL ORIGIN	932	270	323	177	714
NON-AGRICULTURAL ORIGIN	7,626	3,372	3,447	3,221	6,359
FUELS	461	159	122	181	321
TOTAL	9,019	3,801	3,892	3,580	7,395

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS), (1980-1991)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	34.5	28.0	39.5	44.6	43.3
32	TEXTILES	23.7	21.8	22.9	20.3	31.0
33	WOOD	19.5	20.8	15.2	14.5	7.1
34	PAPER	22.3	29.4	22.4	20.7	18.6
	TOTAL	100.0	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	322	76	128	79	310
32	TEXTILES	221	59	74	36	221
33	WOOD	182	56	49	26	51
34	PAPER	208	79	72	37	133
	TOTAL	932	270	323	177	715

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS), (1980-1991)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	0.1	0.0	0.0	0.0	0.2
32	TEXTILES	2.7	0.5	0.3	0.2	2.1
33	WOOD	0.2	0.0	0.0	0.1	0.2
34	PAPER	1.8	1.8	1.4	0.9	2.0
35	CHEMICALS	18.4	34.2	35.0	37.6	30.0
36	NON-MET.MINERALS	2.4	1.6	1.4	1.5	1.5
37	BASIC METALS	9.9	11.6	10.0	10.4	7.0
38	MACHINERY	62.2	49.7	51.1	48.6	54.3
39	MISCELLANEOUS	2.4	0.6	0.8	0.7	2.8
	TOTAL	100.0	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1983	1986	1989	1991
31	FOODS	4	0	0	0	16
32	TEXTILES	203	16	11	6	133
33	WOOD	12	1	1	2	11
34	PAPER	140	62	48	28	127
35	CHEMICALS	1,400	1,152	1,205	1,213	1,907
36	NON-MET.MINERALS	180	54	50	50	92
37	BASIC METALS	758	392	344	336	448
38	MACHINERY	4,747	1,675	1,760	1,565	3,450
39	MISCELLANEOUS	183	21	28	22	175
	TOTAL	7,626	3,372	3,447	3,221	6,359

SOURCE: ANNEX TABLE A-10.

III. INDUSTRIAL BRANCH PROFILES[35]

The purpose of this chapter is to provide evidence and issues of the relationship between industrial development and incentives. This is important due to the policy transition towards a less regulated economy started in recent years. The subjects concerned in those case studies are, among others,: trade orientation, technological patterns, scale of competitors, industrial organization, effect of recent reforms, and prospects. They are intended to be illustrative, at the sector and firm level, by looking at different dimensions of the impact of those transitions, which will help in having a systemic view of the process of restructuring going on in the economy.

The selected activities are among those which invested heavily in the mid 80's; then, an evaluation of their perception of future markets is implicit in the analysis. This is so except for the Farm machinery sector, which as a provider of capital goods to agriculture should have some relevance in a country with high importance of natural resource based agricultural activities.

Data on the situation of the main producing firms and plants used to prepare this description have been obtained from the sources indicated in each case, they have been updated through monitoring of information concerning the privatization process and the decisions and actions of the firms.

---

[35]This chapter was written in collaboration with R. Soifer. Given the time constraint no field work was done. Thus, discussions are based on secondary information and consultants experience.

A.AGRO-INDUSTRIES

MILK AND DAIRY PRODUCTS INDUSTRY

a.Resource base and past trends

i.The industry and the firms

The Argentine milk and dairy products industry should benefit from the country's natural-resources based comparative advantage, but it operates in the context of extreme distortions in the world markets stemming from subsidized production and trade by the European Community countries.

Production of milk and dairy products in Argentina today is largely oriented towards the internal market, evaluated recently at the level of 2,500 million dollars (M$)/year.[36] According to the same source, the average market volume for the 1980s was 1,500 M$ but it went down to 1,000 M$ in 1989, then recovering and surpassing all historical levels. On the other hand, export activity, even at its best years, has been traditionally low.

Industry sources generally report the activity of this sector in terms of amounts of milk processed to make different products; in this sense, it is reported that there are 700 firms in the industrial sector with 2,000 plants and that 20 firms process from 80% to 90% of the milk input to industry.[37] There are three main business areas, fluid milk (including yoghurts and other products),

---

[36]Perez Alonso, N., Ambito Financiero, June 4, 1993.

[37]Document CAA/06, "Estudio de competitividad Agropecuaria y Agroindustrial. Productos Lacteos", Parellada,G.; Maggi,C.; Blousson, R. and Guardini, E., SPE/SAGYP/IICA, Buenos Aires, October 1993.

cheese and ice-cream. Six firms account for 45% of the market;[38] the largest two of them have national ownership, cooperative in one case (Sancor) and by a domestic business group in the other (La Serenisima/ Mastellone). Those two concerns have a combined employment of 7,900 workers, while two other local groups (second tier firms) have 900 and 650 employees (Asociacion Union Tamberos-Milkaut, y Sucesores A. Williner), and two affiliates of multinational corporations (Nestle and Parmalat) have 550 and 520 workers;[39] the latter are however more specialized and have business and technological characteristics that make them important participants in the Argentine and regional market in spite of their smaller size. In fact two other foreign groups have also taken interesting positions recently, one buying a cheese-making firm,[40] and one entering the industrial ice-cream market also through a takeover of a traditional local firm.

The operation of these firms or groups involves not only running the industrial operations, but organizing and assuring the purchase and collection of fresh milk and running large and diversified distribution systems. Many firms, the largest as well as smaller ones, are multiplant, multiproduct operations, with overlapping lines of products but holding clearly differentiated leaderships in different segments of the markets (fluid milk,

---

[38]Mercado, December 1993.

[39]P. Alonso, op. cit..

[40]Infortambo, September 1992.

powder milk, cheese, butter).[41] The cost of the raw material (milk) is a large part of the cost of most products, but in different proportions: it is 77.9% of the price of butter, 61.7% in the case of soft cheese, 58.6% for medium hard cheese, 59.6% for bulk powder milk, and 42.5% in the case of hard cheese.[42]

Fresh milk is produced by the specialized farming sector but industry does concern itself not only with purchasing, collecting and keeping cold large amounts of fresh milk due for processing but with the production capabilities of farms; the main industrial producers have run in effect private agricultural extension services aimed at the primary producers.

The dairy farming sector concentration has increased steadily with technical progress; management of resources, pastures, supplements and feeding has improved and fewer farms, using smaller areas, maintain more cows and produce more milk with more productivity.[43] Efficiency measured by the amount of butyrous fat per unit area of land per year, has risen sharply recently in Argentina; there is however great dispersion of production rates and best farms are much more productive than lagging ones. Regarding costs, if cost in Argentina is taken as reference, unit cost is double in Brazil or the Netherlands, and three times higher

---

[41]Gutman, G. and Rebella, C.,"Subsistema Lacteo" in Agroindustrias en la Argentina, edited by Gutman, G. and Gatto, F., Buenos Aires, Centro Editor de America Latina, 1990.

[42]Document CAA/06, op. cit..

[43]Document CAA/06, op. cit..

in the US but lower than Argentina's in New Zealand, while Uruguay costs are 15% above Argentina's.[44]

Farmers' decisions about what to produce at any given time are related to relative prices of agricultural products (grain, beef, milk) rather than to the absolute price reached by milk. The recent increase in milk production in Argentina responds to high consumption rates in the population, and high demand and prices for milk (in terms of butyrous fat content) while other farming activities offer lower returns.[45]

Returning to the industrial sector itself, in money terms, and also in terms of use of milk, the largest subsector is the cheese industry, reaching 1,000 M$ market value at present;[46] it is difficult to state the total number of productive units, as some farms have attempted forward integration and there are many small firms processing milk; but only the three main producers have a tradition of organized planning and marketing. The two largest firms are supposed to account for 25% of cheese production, the two largest second-tier nationally owned firms are also showing a good performance in the cheese segment and one of the recent multinational entries is in fact an international leading cheese producer which took over a main local firm in the same specialty.[47]

---

[44]Document CAA/06, op. cit..

[45]Doc CAA/06, op. cit..

[46]P. Alonso, op. cit..

[47]Infortambo Sep. 1992 and Mercado, Dec 1993.

The orientation of the cheese industry has changed in the 1990s due to the fact that hard cheeses need longer production cycles and financial costs have discouraged their production; cheese manufacturers tend now to supply more soft and semisoft cheeses. On the other hand, hard cheeses are more tradable, as there is less price competition and also the US has allowed an import quota to Argentina.[48]

ii.Foreign trade

Regarding foreign trade, there is a general agreement that although in the past it did export, the Argentine milk products industry in recent decades has not developed business strategies for exporting, not making efforts to market differentiated products. Exports in recent times have responded to internal market variations and to promotion schemes and perhaps more recently to regional integration opportunities. Exports are commodities, not differentiated products; the main exports have been hard cheese (in bars) and powder milk. At times of higher level of exports, Brazil is the main destination, receiving almost 60% of shippings in 1990; other destinations are Algiers. US, Chile and Peru.[49]

Foreign sales have reached a maximum of 150 M$ in 1990 with almost no imports in the same years, but in later years the situation was completely reversed, high exports in 1989-1990 are explained by a sharp increase in international prices and the

---

[48]Doc. CAA/06, op. cit..

[49]Doc. CAA/06, op. cit..

depression of local consumption.[50] Therefore, the main characteristics of Argentine milk products exports are their low absolute and relative levels, and furthermore, their extreme variability. This is partly a consequence of international markets structure and price distortions, but it is also attributed to the low priority assigned by firms to exporting. Exports are marginal with reference to the internal market size.[51]

Generally speaking, there was an improved trade performance in the 1980s explained by low internal market consumption, cooperative systems (with the assistance of a special fund set specially to compensate for foreign subsidies), and also from the progressive reduction of export taxes. The export and import situation and figures were however reverted in 1991, including large imports from the industrial segment buying milk from the international market for local industrialization; these imports were partly due to internal increases in prices due to the impact of new economic policies.[52] It is said that imports were not larger due to a rise in international prices as East Europe demanded more milk, imports have fallen again in 1993.

iii.The technology

Regarding structure of production and processes, the sector of

---

[50]Gargiulo,G. "Analisis de Competitividad de Productos Agroindustriales en el Mercosur. Informe Final", Buenos Aires, September 1991.

[51]Factors promoting milk products exports are analyzed in Doc. CAA/06.

[52]Gargiulo, op. cit..

milk industrialization in Argentina produces practically all usual products of an advanced dairy products industry, processing fluid milk. This means that all industrialization stages are carried out in Argentina. It is however a different matter whether all or most industrial establishments utilize up to date technologies or whether production methods and scales are efficient. In fact, there is agreement that within the multiplant, multiproduct structure of the Argentine milk-products industry, it is possible to find marked heterogeneity in technology and production even among different plants of the same firm.

To our knowledge, there are no recent, up to date studies of milk products making technology in Argentina. The accepted view is that in the past larger firms had no great time lags with respect to technical change elsewhere in incorporating sophisticated and/or high productivity equipment or in adding new product lines. Larger firms have laboratories, and conduct product development activities, and some process development and equipment adaptation activities. This refers however to leading firms in various market segments, and it is not true for other firms in the same subsectors nor in fact for whole subsectors. Technology is at international level in yoghurts, fluid and powder milk and cream cheese but with very few exceptions it is obsolete in cheese making and at intermediate levels in butter making, or desserts production.[53] Technological incorporation has however taken place during the last

---

[53]Gutman,G.,Porta, F. and Calvo, E., "Situacion de la Industria Lactea en la Argentina", 1987, Gutman and Gatto, op. cit. and Doc. CAA/06, op. cit..

two decades, combining both fundamental changes in sterilization, in powder milk production, in gelification and separation processes, etc., with increases in the average size of plants, more automated processes, higher quality standards and procedures, development of multipack products (e.g. combinations of yoghurts with cereals in the same packaging), etc..

Some firms, in some cases multinational firms trying to expand in Argentina, but also local firms, have recently added plants or started projects, e.g. to produce protein and lactose from cheese whey (WPC) or for sterilization of solid products with the latest technology.[54] A stocks management technique of recent application is the transformation of milk into powder milk for storage from the high season to the low season to balance the supply along the year.[55] It is however important to note that part of the observed technical progress is indeed related to intense diversification and differentiation of products taking advantage of high income segments of the market. The question should however also be asked to what extent international distorted competition conditions would justify technical progress in Argentina's milk industries other than that oriented to capturing shares of segmented internal markets. The adequate strategy of domestic firms or multinational affiliates in Argentina will largely depend on the real possibility of the phasing out of dairy production subsidies in industrialized

---

[54]El Economista, April 9, August 8 and October 2, 1992.

[55]Infortambo, Dec. 1993.

countries that export their surplus.[56]

iv.The domestic market

The system of competition in the domestic milk products market has also regional aspects, as several large cities have their own supply zones and large firms, often cooperative, serving them. In fact the cooperative movements are very important agents operating in these markets, the largest national firm belongs to an association of cooperatives. Multinational corporations are not dominant participants in the production process in quantitative terms; one of them (Nestle) is a leader in powder milk and a recent entrant, Parmalat, after hiring a plant for initial production, has started its own investment programme to manufacture aseptic products and longlife milks, which do not require massive daily distribution schemes.[57]

Although in some views competition in the milk product markets is not perfect, the conclusions of some analysis are that there are no undesirable "price-fixing" consequences. One measurement starts from the estimate that 88% of milk that undergoes industrial transformation is processed by just 20 firms, and that such firms, operating as buyers of fresh milk from the farms, are regionally concentrated (they tend to buy within given areas). This makes local buying concentration higher than overall concentration, but

---

[56]See Gargiulo, op. cit. for a comparison of local costs, subsidies and export prices from industrialized countries and from Southern Hemisphere competitive, non-subsidizing producers.

[57]El Economista, Aug. 21, Sep. 4 and Oct. 2, 1992, and May 21, 1993.

prices are said not to be distorted due to that.[58]

v.Overall Effects of Recent Government Policies

One of the main policy changes since 1991 is deregulation with trade liberalization, but it does not seem to be the dominant one. According to most observers and studies the main impact of the policy changes has been a strong increase of about 20% in internal consumption;[59] also, the export tax was finally eliminated and a 5% tax rebate on exports was established (exports however practically ceased since the second half of 1991 as the internal market picked up). Imports increased, largely to supply raw materials to industry, but there was no decline in the price paid to primary producers as internal demand was high and international prices too. The same observers suggest that costs were reduced by the elimination of taxes such as the tax on bank operations or the export tax for financing the agricultural sector technological institute, and that some credits for small and medium firms as well as transport costs reductions due to transport deregulation (mostly relevant to foreign trade) also contributed to improving the profitability of the sector.[60]

The FOB export prices from subsidized sources are clearly lower than the internal prices in the area of origin of the exports; FOB export prices of products imported by Argentina were 1,600 dollars/ton for powder milk and the same for butter, while

---

[58]Doc. CAA/06, op.cit..

[59]Doc. CAA/06, op. cit..

[60]El Economista, June 19, 1992.

the internal market prices at the origin of the exports were 3,200 dollars/ton for powder milk and 4,120 dollars/ton for butter.[61] Local farmers and farmers associations felt that the attitudes of both the government that allowed those imports and the industry that bought powder milk from subsidized areas as an input, were unfair. In the end, the government established compensating duties on white cheese, semihard cheese and powder milk, all of them from the European Community.[62]

b.Constraints and prospects

Local and international firms located in Argentina must take their decisions in a context defined by the combination of local, Mercosur and international markets. International markets are difficult to tackle as competition from either the European system of production and protection or from low-cost producers in the Southern hemisphere is hard to overcome. Also, even assuming reduction of production and trade subsidies at international level, Argentina would lack differentiated products for the more sophisticated markets.

In the current situation, the relevant questions concern what are local (domestically owned) firms doing and what are multinational firms planning to do. Regarding the latter, already taking position or widening their former base in the Argentine market, it is a valid question to ask why are they doing that.

---

[61]El Economista, March 15, 1991.

[62]"Resolucion" 1203/92.

Answers have in fact been advanced related to the different possible views of the markets. Looking at the broadest picture, one hypothesis is that it is in the interest of such firms to develop operations in Argentina to be ready to tackle international markets from this low-cost country when eventually the international market is, in some sense, normalized (i.e. when European high cost production, lacking subsidies, is not competitive anymore).

In addition, the combination of excess demand in Brazil and the supply and cost situation in Argentina and Uruguay explains why multinational corporations established in Mercosur should locate at least certain stages of processing in Argentina (one must also believe that massive imports of powder milk for industrialization from subsidized suppliers cannot be forever an option for multinational affiliates or local firms established in Brazil). Recent studies state that larger Argentine firms have explicit strategies for Mercosur, including taking measures to assure themselves of local raw materials supplies, while medium-sized firms are also taking into account Mercosur in their investment plans.[63] In fact, reports in the local business press covering activity in the milk industry do not advance information confirming that impression, they have rather reported that the main Argentine firms "do not seem to have completed their definition of regional strategies".[64]

---

[63]Document CAA/06, op. cit..

[64]El Economista, June 19, 1992.

THE VEGETABLE OILS INDUSTRY

a.Resource base and past trends

i.Introduction

The importance of this branch in Argentine industry has increased mostly in the 1970s and 1980s, which was due to sharp increases in international demand for vegetable proteins for cattle and poultry feeding and to a deliberate policy to encourage industrial processing of locally produced raw materials in Argentina. The main instrument of such policy has been the setting of differential export taxes on raw materials exports and on exports of processed (in fact, semiprocessed) commodities.

One salient aspect of the recent strong development of this branch is the parallelism and interaction in industrial and agricultural innovation and growth. Thus, industrial production of vegetable oils in Argentina can be described in isolation, and just as a dynamic industrial branch, or as part of a "complex" or "subsystem" involving primary production, industrial processing, and commercialization; the latter involves management of information, trading, and operation of port facilities.

The close relation between agricultural and industrial expansion is underscored by the high participation of raw material value in industrial cost; raw materials value is more than 80% of the cost of bulk vegetable oil as produced for export by advanced "seed-crushing" plants; in Argentina according to one source variable industrial cost is reported to be 11%-12% of total cost

while participation of fixed and variable costs in unit cost is 18%.[65]

Experts' opinion is that for modern plants located anywhere industrial cost should be about 12 dollars per ton., while economic newspapers report it to be 18 to 20 dollars. In relative terms, the industrialization stage does not add much to the production value of the primary sector, but the fact that the volume of production involved is large implies that even with low unit value added, total industrial value added is significant. However, the same figures show that from the point of view of competitiveness, it is clear that given the participation of raw materials cost in total cost, this industry could not be as competitive as it is if the comparative advantage in raw materials production were not so strong. The exports of the "oleaginosas complex" have been the most dynamic of the decade and a half since the mid-1970s and the vegetable oil industry companies are among the largest industrial exporters. On the other hand, the branch is not a significant provider of jobs, as its industrial plants in Argentina follow a trend of high volume (large scale) production, high mechanization and automatization, high capital intensity and low employment.

ii.Resource base

The most important inputs for the vegetable oils industry are soybeans and sunflower seeds but also flax, peanuts and cotton

---

[65]Ciani, R., and colabs., (October 1993), "Estudio de competitividad agropecuaria y agroindustrial. Oleaginosas, aceites y harinas", Documento de trabajo CAA/03, Secretaría de Programación Económica.

seeds.

The increase in production value in industry is closely related to increases in agricultural production and in the agricultural product. Oil content of soybeans is around 18%. What is left after oil extraction is a "byproduct" representing 40 to 44%, in fact, although called "a byproduct", soybean meal is a product of very high protein content.

According to the "base 1970" national accounts (accounts at 1970 prices) in 1970 oil seeds had a participation of 9.7% in the agricultural product, which became 37% in 1989.[66] Using the base 1986 accounts, and comparing national accounts data for 1980-1981 and 1990-1991, value added in oil seeds agricultural production increased 223.2% in ten years (value added in soybeans increased 340.8%), while the share of oil seeds crops in the agricultural product increased from 13.3% to 31.2%. The share of just soybeans cultivation in the agricultural product increased from 7.7% to 24.5%.[67] Argentina in 20 years practically multiplied by 100 the size of the soybeans crop while multiplying as well by three and two, respectively, the crops of sunflower and flax, already important in Argentine agricultural production at the beginning of this expansion process.

---

[66]Gutman, G., "Agroindustria, tecnología y producción alimentaria", Desarrollo Económico No. 120, Jan.-March 1991.

[67]Obschatko, E., (1993), "Estudio de competitividad agropecuaria y agroindustrial. El complejo agroindustrial argentino", Documento de trabajo CAA/01, Secretaría de Programación Económica.

Introduction of soybeans cultivation was a fundamental turning point; combination of soybeans and wheat cultivation in the same year was possible because of the creation of "short-cycle" wheat varieties, but later on soybeans were grown also on their own. Production of soybeans in Argentina is similar in technology and efficiency to production in the US. The large increases in soybeans and also in sunflower production, changed the agricultural profile of the country. Part of the expansion of these crops was due to a new agricultural technological package, including hybrid seeds, agrochemicals, fertilizers, repeated cultivation instead of rotation of crops and cattle raising, etc.. Sunflower crops profitability gained substantially from the introduction of new hybrids, with more yield in cultivation and more fatty content in the seed.

Overall, the great importance of the resource base in the development and performance of this industry is undeniable. Even if the vegetable oils branch is indeed by itself an important subsector of Argentine food industry, its success and competitiveness is as well an extension of agricultural production favourable conditions and success; fast industrial development has certainly taken place, but, for products such as vegetable oils in which industrial value added is low in comparison to value of raw materials from the primary sector, comparative advantage depends mostly on natural conditions. This has even a negative side as in fact it depends on possibly excessive exploitation of land fertility by means of double cultivation of wheat and soybeans;

even soybeans cultivation by itself, if not practiced with adequate rotation with other agricultural and cattle raising activities, leads to acceleration of erosion; past methods of soybeans cultivation are not sustainable.

iii.Past trends

Average share of value of production of vegetable oils in the food industries total production for the period 1986-1989 was 11.9%[68]; the 1980-1988 increase of production value of vegetable oils was 153%. Regarding manufacturing value added at 1986 prices (index numbers, 1986=100), for branch ISIC 3115 (vegetable oils and fats), the 1980 level was 42.5 and the 1991 level was 137.7, an increase of 224%.[69] From 1980 to 1991 the share of manufacturing value added of ISIC 31 (food and drinks total) in the industrial sector increased from 19.5% to 24.3%, while the share of ISIC 311/312 with respect to total industry increased from 13.0% to 18.1% and the share of ISIC 3115 with respect to total industry in the same period increased from just 1.0% to 3.2%. In 1991 the share of ISIC 3115 value added in ISIC 311/312 value added was 17.6% (it was 11.4% at the time of the 1984 industrial census).

The share of oil exports in oil industrial production increased above 90%, and the participation of edible oils exports in industrial exports increased from 15.2% in 1980 to 32.7% in 1988; the value of exports was 796.6 million dollars in 1980 and

---

[68]Document CAA/01, op. cit..

[69]Annex Table A-4.

2,302.8 mill. dls. in 1988.[70]

The fast rates of growth and increases in participation just noted have an explanation in a sharp convergence of demand and supply aspects. There was an increase in world demand and prices due to the increase in European production of beef, poultry, eggs, milk (this was due to the stimulus offered by the Agricultural Common Policy of the EC to those activities) and very strong expansion of production in the US, and then in Brazil, and in Argentina, where now a large share of production is for the external market.

However, even if world market demand increased strongly in the period and conditions for commercialization were easy, it was Argentine government's policy that gave the decisive momentum to industrialized exports by means of maintaining differential export taxes for seeds, oils and byproducts, the tax on seeds being substantially higher. Under those conditions, growth of industrial processing (oil-seeds crushing) in the 1980s, at a rate of 14.8% per year, was faster than growth of agricultural production of the relevant grains, which showed a rate of 8.9% per year.[71]

iv.Industrial development and structure.

At the start of this fast development process, Argentina had a vegetable oils industry mostly oriented towards supplying refined oils to the internal market. The new orientation implied the development of an agro-industry complex oriented to bulk exports of

---

[70]Gutman, op. cit..

[71]Document CAA/03 op. cit..

crude (not refined) oils.

This sector was however different to others in the country as industrial promotion was not an important instrument in its development; as indicated before, the main policy instrument were the differential export taxes. The process of production increases was very intense at the raw materials level and in industry; where new plants and processes were incorporated, scales were increased and plants became automated. The period of overvaluation of the exchange rate at the beginning of the 1980s, saw the industrial expansion and oil production capacity increases. Thus the vegetable oils industry was in fact the main and perhaps only exception to the poor performance of most industrial branches in that period.

Most of the Argentine production of vegetable oils and byproducts is oriented to the external market; furthermore, any increase must come from the same source, as the local market is much smaller. There are very low prospects for selling more oils locally, on the other hand the production of poultry and hogs may demand more balanced foods based on byproducts of the oil industry. Regarding the internal market for vegetable oils and related products, it comprises the production of edible vegetable oils and the production of margerine, mayonnaise and food dressings.

Participation of soybeans in industrial processing increased from 1% to 70% in two decades, displacing the previously dominant oil seeds: sunflower, flax and cotton. The decrease in flax oil production was a consequence of a decrease in demand, while in the case of peanuts oil, what happened was that the primary sector

reoriented itself to edible varieties.[72]

Evolution of industrial capacity included an increase in the scale of production and a decrease in the total number of plants; growth of leading enterprises of the branch combined opening of new firms and plants with changes in dimension of some of the existing ones, and also closure or takeover of existing firms by either other existing firms or by new entrants.

A most important characteristic of the industrial facilities thus developed is that the type or level of industrial processing is largely limited to seed-crushing as oil is exported in bulk, in unrefined state. There was however a very important technological transition in the industrial plants with the diffusion of the solvents extraction process totally or partly replacing the technology of press or continuous-press extraction.

The industrial structure that developed involves largely a "multiplant" structure of firms. The investments outside the plants in commercialization and transport facilities were also very important: at the end of the 1980s an estimate was that 80% of the exports of the oils complex (oils and grains) passed through some 10 privately established ports, mostly on the Paraná river.[73]

Finally, an important characteristic of this branch is that national businessmen, as well as some national producers' cooperatives, have been very active in taking advantage of favourable development conditions in it. In 1984, local private

---

[72]Document CAA/03, op. cit..

[73]Document CAA/03, op. cit..

capital owned 76% of installed capacity, cooperatives owned 8% and foreign capital firms just 16%. It is however reported for the second half of the 1980s that smaller firms tended to disappear and foreign firms increased their importance by adding new plants. The type of foreign firm interested in such expansion is the firm trading in agricultural commodities and in the food industry products.[74]

Regarding the detailed structure of this industry, in 1991 there were 40 firms operating in it, running a total of 56 plants. From 1973 to 1984 the number of firms had decreased from 57 to 40 while the total number of plants had decreased from 60 to 56 since 1980 to 1991, with an increase from 7 to 16 plants in the segment of larger (over 28,000 tons/month) capacity and a decrease of 53 to 40 in the number of plants with capacity below that level. On the basis of a 6-day working week and eleven months activity per year, total installed capacity was 14.3 million tons/year;[75] in 1973, the theoretical industrial processing capacity was 3.7 mill. tons/year.[76]

It is important that as a whole this industry is relatively modern but it is not perfectly homogeneous. One type of differentiation is that there are now two well differentiated groups of plants in the industry: those that represent recent investment mostly for soybeans and sunflower seeds processing, and

---

[74]Gutman, op. cit..

[75]Document CAA/03, op. cit..

[76]Gutman, op. cit..

older plants processing flax. The new generation of plants belonging to the first group reach processing capacities of 1,500 tons of grain a day and include docking facilities for water transportation. The plants of the second group, smaller and mostly built before the 1970s, utilize basically the continuous press technology.[77] Other type of differences between plants is related to age and efficiency within similarly oriented groups of plants; such differences can in turn imply different process costs and, in tight market situations, the difference between making or not a profit.

The flax processing segment includes 16 older continuous-press plants, with monthly processing capacities below 8,000 tons (100 to 300 tons/day per plant). These plants are nationally owned. All plants in the other group, i.e. 40 plants, use the solvent-extraction technology, 16 combining press and solvents-based processing, and the other 24, only solvents based extraction. Such plants are generally multipurpose, they are prepared to switch between input grains according to their location, crops results, etc.. But firms also try to specialize; thus, 28 plants generally process the two main inputs, soybeans and sunflower seeds. Production of finished products (refined oils for domestic consumption) absorbs only a small proportion of overall production, but 20 plants have refining facilities.[78]

The edible oils market is more stable and involves more value

---

[77]Document CAA/03, op. cit..

[78]Document CAA/03, op. cit..

added products than bulk oil extraction. Regarding production for final consumption, the refining capacity for edible oils is over 60,000 tons/month, 80% belonging to the firms that own oilseeds crushing plants and 20% belonging to specialized refiners. The first group supplies 50% of the final domestic market. Concentration in this market has recently increased as the market leader firm has bought the plant and the trade brands of its main competitor.[79]

Seven firms of this branch are foreign owned and five among the national ownership firms are cooperatives. Concentration in the sector in terms of active installed capacity is as follows: the first four firms own 44% of such capacity and the first eight firms, 70%. Also, 9 firms owning a total of 19 plants are as well exporters of grain (cereals and oil-producing).[80]

Given its economic importance, the sector is not an important employer. Data on industry employment from an industry source, indicated at the end of 1992 that the participation of labour, including personnel doing manual work in the oldest plants, and administrative personnel in all plants, was very low in proportion to production value, estimating total branch employment at 10,000; as an example of what is going on with new investment it was mentioned that a brand new high production plant employs just 40 people.

b.Constraints and prospects

---

[79]El Economista, April 15, 1994.

[80]Document CAA/03, op. cit..

The vegetable oils industry has had a long period of very strong growth but in recent years it has encountered some difficulties. The main indicators are the low or negative profitability of the industry at least up to 1993. For example, in late 1992 it was reported that the sum of fixed and variable industrial costs in the industrial processing stage was 18 to 20 us$/ton, the price paid for a ton of oil/pellets was 205-206 us$/ton and the price of grain was 196-197 us$/ton.[81] The prices of grains, oils and pellets are determined in the international markets; the source mentions as causes for the negative profit per unit weight: the prices of the grains, and the subsidy war between the EC and the US, and the reduced differential in export (subsidies) in Argentina. Today, the differential between taxes on agricultural exports and rebates paid to industrial exporters is currently 6% (3.5% export tax and 2.5% export rebate). Earlier, the differential was obtained between export taxes applied to both primary and industrialized exports.

The questions related to foreign subsidies and profitability are very important regarding the sector's viability, but there is another important opposition of views regarding precisely the alleged subsidization of industry by the primary sector; the question of the differential taxes (subsidies) is the subject of a very strong debate between representatives of the agricultural producers and of the industrial sector.

The situation is therefore complex, as there are many factors

---

[81]El Economista, October 30, 1992.

ranging from international market distortions to technical efficiency that have in recent years discouraged processing and encouraged raw materials exports, but it must also be kept in mind that at the time being, the international frame of reference has started to change; the recent completion of GATT's Uruguay Round includes limitations on the further expansion of cultivation in Europe as well as a progressive reduction of the annual volumes of subsidized sales by the US. This is seen as the beginning of a change in the international trade and production framework in which, perhaps after some further rationalization of production or closure of the uneconomic plants, investment in Argentina will resume.

B.TEXTILES AND CLOTHING

THE TEXTILE INDUSTRY

a.Resource base and past trends

i.Resource base

The strong point about the Argentine textile resource base is the availability of the most important natural fibers, cotton and wool, while the segment of synthetic fibers is considered weak, in spite of the advances in the chemical and petrochemical industries. The country is one of the main wool exporting countries, although as such it is subject to the troubles that have recently made competition in those markets exceedingly difficult.

Regarding cotton, Argentina is one of the countries in which its use had a strong revival after the dominance of synthetic

fibers. Argentina is a cotton producer, and has developed its own varieties through the National Agricultural Technology Institute; the merit of such research was that it allowed to develop varieties apt for cultivation in the country, which had very good yields in primary production. Such varieties, although not totally competitive in quality with the best long-fibre varieties available internationally, supply a quite good input for local industrialization and also generate unprocessed exports.

ii.Past trends

After starting the decade of the 30's with 83% of imports in consumption of goods such as cotton based manufactures, the import substitution started, to further accelerate with World War II, continuing into the 1950s to 1970s with variations in the rate of growth, but with positive rates. This was followed by a trade liberalization period of the late 1970s; the recovery after 1983 and further crisis and liberalization afterwards, the outcome was an overall decline or at best a very limited growth in the last 15 or 20 years.[82]

The current trade liberalization takes place at a time in which the branch itself has been for several decades the ground in which newly industrializing countries (initially substituting imports and then exporting) and older industrialized countries compete. The two main elements in the changes of external conditions in recent times were the development of very intense

---

[82]FITA, Revista Textil, Suplemento especial Innova 88, "La Industria Textil Argentina", Buenos Aires 1988.

international competition, from countries that at least initially had very low labour costs, and the very important changes in productive technologies, generated in the most advanced countries, increasing the capital intensity of textile production by a factor of two or three.

The total value of production of the textiles and garments sector in Argentina is estimated to be about 4,000 million dollars. Regarding relative importance of stages of production and types of goods, on the basis of 1984 census data, spinning, weaving and manufacture of garments concentrate about 60% of textile manufacturing value added in Argentina.[83] Weaving is the most important of those activities, followed by production of clothes and spinning. Consumption of textile products in Argentina is, 70% for clothing, 20% for household goods, and 10% as an input for the industrial production of other sectors; the general trend is that in countries with a higher degree of development industrial use tends to have larger participation.[84]

On the basis of the 1980-1991 indices based on 1986 prices, with 1986 as 100, for ISIC 321 and 322, value added for 1980 was respectively 90.6 (for ISIC 321, textiles and apparel not including clothes) and 82.3 for ISIC 322 (clothing); for 1989, respectively, 91.3 y 90.7; and for 1991, 103.4 y 72.5. This shows that ISIC 321

---

[83]IEERAL, "La Industria Textil en Argentina y Brasil", Córdoba 1991.

[84]FITA, op. cit..

grew from 1980 to 1986, fell in 1989, but recovered and surpassed past performance in 1991; while ISIC 322 had a similar evolution up to 1989, but after that date it did not recover as ISIC 321, and as it went on contracting, the 1991 product level is much lower than for 1980.[85]

Given the previously shown data, it is interesting to use the industrial census data, i.e. the data for 1973 and 1984, to look for some indication of what was the evolution of the sector. The evolution 1973-1984 shows for the whole textile and garments industry a decrease in the number of plants from 14,012 to 9,148 and a decline in employment from 173,217 to 141,064, with an increase of installed power (measured in HP) from 512,454 to 645,039.[86] Number of plants declined in all three of the main segments (spinning, weaving and, most intensely, in clothing) while employment declined almost by half in spinning and 30% in weaving (employment in clothing actually increased marginally). Installed power increased in all three segments, more strongly so in weaving (30%).

Data for 1987 from one of the manufacturers' associations[87] supply an estimate of total employment and its breakdown as follows: all textile activities, including made-up textiles but excluding clothing, in 1987 employed 82,000 workers. The breakdown of this figure was as follows, 57,000 workers were involved in

---

[85]Annex Table A-4.

[86]IEERAL, op. cit..

[87]FITA, op. cit..

spinning and fabrics production including finishing, 15,000 in knitting, 3,500 in made-up textiles (excluding clothing), 1,100 rugs and tapices, 900 cordage and 3,800, miscellaneous productions. Clothing employed 38,000, and production of synthetic fibers, 4,000 workers, therefore the total number of workers in the textile industries in the broadest sense, were 120,000.

In 1970 Argentine spinning plants had 1,070,756 spindles, in 1978 1,145,562, in 1983, 901,291. Also, the number of rotors (newly available open-end spinning technology) increased from 1976 to 1983 from 3,250 to 23,338; given that it is accepted that one rotor replaces six spindles, it may be said that there was a lower decrease in productive capacity than that indicated by the reduction in the number of spindles. It is worth noting that between industrial censuses there was a marked increase in installed power per worker, while the number of spindles/worker, increased from 64 to 110, the average product per worker, increased 82%; and the average product per active spindle, had a 20% increase. These data suggest that there was an increase in productivity related to some level of modernization in at least some segments of the industry.[88]

Also, from one Census to the next (1973 to 1984), in yarn production there was a fall of 27% in the number of plants and 45% in the number of workers ; from 466 plants with 40,714 workers to 339 plants with 21,257 workers. This could possibly imply large productivity increases or large reductions in production, this

---

[88]IEERAL, op. cit..

cannot be determined as available production indices lump together spinning and weaving. During the years 1984-1989 the production of yarn averaged 160,000 tons/year; more than half was carded cotton, other production included combed cotton, cotton mixed with other fibers, synthetic fibers and wool. Only 13,000 tons were exported.[89]

The information on the weaving segment is scarce. From 1976 to 1981 the total number of looms changed from 18,800 to 19,100. However, the Argentine textile industry reached then a participation of 16% of shuttle-less looms, while Federal Germany, Italy and (S) Korea, had 11%, 14%, 2%. Production of fabrics follows the proportions and participations already shown for yarns. The average production 1984-1989 was 148,000 tons, without very large variations. Value added in weaving gained participation in the total of the textile industry; however number of plants fell between censuses from 1355 to 775 (43%) while number of workers fell from 29,366 to 20,917, or 30%.

In clothing, in the period between censuses ther was a decrease in the number of plants (from 7887 to 5437), and in value added. There was however an increase, although slight, in the number of workers.

From 1976 to 1989, Argentine textile exports increased at 5% annually while imports increased at 6.9%. Total textile exports, i.e. including unprocessed raw materials, from 1976 to 1989, had oscillations but were never below a minimum level of approximately

---

[89]IEERAL, op. cit..

240 million us$; highest exported amounts were 507M$ in 1988, and 47M$ either in 1978 or 1980. Physical volume of exports had high values of 279,000 tons. in 1979 and 243,000 tons. in 1988. However, the main component of those exports has been raw materials; in value terms, raw materials exports have been on average 254 million dollars per year, what represents, for the whole period, 72% of total exports.[90]

Overall growth rate for exports of textile manufactures over the period 1976-1988 was 10%, but there were several very different stages: In the period 1976-1978 sales increased and reached an annual average of 96 mill us$. From 1979 to 1984, the amounts exported decreased and the average exports were 77 million. Finally, after 1984 (to 1988) there was a clear increase to an average of 142 mill us$/year. From 1986 to 1988 the level of exports of manufactures was between 170/190 Mill. us$, the highest levels of the period 1976-1988. Exports of manufactured textile products over the period 1976-1988 had the following structure: wool "tops", 38%; fabrics,24%; yarns, 21%; and made-up textiles 18%. More recent data are as follows: exports of textile manufactures increased until 1990 reaching the level of 203 million us$ but decreased from that year on, falling to 110 million in 1992. Thus manufactured textile exports increased three times from 1986 to 1990 to fall practically by half from 1990 to 1992.[91]

Textile imports peaked in 1980-1981 at 420 million us$, but in

---

[90]IERRAL, op. cit..

[91]Pagina 12, Suplement, July 25, 1993.

1989 they were just 73 million us$.[92] Manufactured textile imports increased over the 1976-1988 period at the rate of 11% per year, with a marked difference between the years before and after 1984; the 1982-84 average was 72 million us$, while the 1984-1988 average was 37 million us$, or approximately 50% lower.[93] In the 1990s manufactured textile imports had rapid growth, for one of the available sources they increased to 320 million us$ in 1991 and to 630 million us$ estimated for 1992.[94] The sector therefore developed a negative trade balance of 176 Million us$ in 1991 and 520 million us$ in 1992. According to manufacturers association estimates, 1991 imports were 360 million us$, and their breakdown was as follows (in millions of us$): 110.7 garments, 148.8 fabrics, 55 yarns and 45 raw materials. The main worry of producers regarding those figures was the increase of higher value added imports.

The evolution of the clothing exports and imports is particularly interesting, as they show two strong import peaks in the early 1980s and 1990s with an intermediate period of a positive export performance, i.e. a total reversal of performance as conditions also had a reversal. In 1980 and 1981 imports of clothes were over 150 m$ in each year, along the 1980s the level decreased to a few tens of million dollars per year, and in 1991-1992 imports again jumped to over 80 million us$ and 240 million us$

---

[92]IERRAL, op. cit..

[93]IEERRAL, op. cit..

[94]Pagina 12, Suplement, July 25, 1993.

respectively. Movements in the export account were not so sharp, the peak was in 1989 with 61 million us$ and the evolution both during the previous increase and the decline that followed was smooth. Factors assisting the good performance in clothing trade of those years were temporary admission of materials of better quality, design and cost, and allegedly good quality of Argentine products. The decline in exports in 1991-1992 can be partly explained by adverse conditions but also by the increase in internal demand.[95] According to initial data for 1994, the situation does not show signs of improvement. Comparison of first quarter imports data for 1993-1994 indicates a reduction of 24% in imports of raw materials, indicating perhaps a decline in processing; imports of yarn increased by 61% but absolute value has been just 19.8 M$; Woven materials, 68.7M$ or 36% increase; made up textiles excluding clothing 9.6M$ or 38%; clothes, 61M$ or21%; total imports first quarter 1994, 177 M$ or a global 28% increase.[96]

b.Constraints and prospects

In the preceding section of this analysis, the textile and garments sector was described as a well established branch of Argentine industry with a story of at least some degree of transformation and adaptation during successive phases of its development. It is time now to consider in depth the more recent impacts and change, and, for the industry as a whole as well as for

---

[95]IEERAL, op. cit., and Prensa Economica, July 1993.

[96]Ambito Financiero, April 25, 1994.

its main segments, what are the expectations regarding their adaptation and survival capacity.

According to industry sources, considering the total textiles and garments market, the shares reached by imports were, in 1991, 15%, in 1992 30%, and estimated of 50% in 1993. The sources were China, Taiwan, Korea, Malaysia, Pakistan, Brazil. Brazil was an exporter to third countries but reoriented exports towards Argentina. This publication argued that "most imported products are at dumping prices" and that "at the same time the EC sets quotas for the imports of Argentine yarns, fabrics and wool tops, and the US established restrictions to Argentina on exports such as slacks for ladies. Argentina had to accept quotas, under the threat of increased import duties."[97] Part of the general explanation of the wave of imports is that there are large surpluses in the world market that were partly reoriented towards the newly open Argentine market; also, that there are imports of used clothes, sometimes just unsold new clothes exported to Argentina as used. One important aspect to take into account however is that to some extent the market provided space for both local and imported production. Internal Argentine demand increased 6% in 1991 and 12% in 1992. For 1993 was expected to remain the same or decline. Also, importers established high mark-ups that reduced the harshness of competition for local producers.

The trade unions also denounce imports as having a strong

---

[97]MIA Bulletin No.18 July 1993.

negative effect on employment.[98] According to textile trade union officials from June 1st. 1992 to July 30, 1993, there had been 6,476 layoffs and about 8,000 cases of reduced work-hours, "suspensiones", elimination of overtime, etc.. In the perception of the union, the small firms were been forced to close, the medium sized reduce personnel to continue their operation, and the largest start restructuring processes to continue in the market.

In mid-1993 given the impact of the trade liberalization policy, the Argentine Government took the first of several steps towards selectively increasing the protection of the local textile and garments industry. The first step was Resolution 811 of the Ministry of Economy, establishing minimum specific duties for 198 positions of the tariff nomenclador; i.e. the instrument was designed to be applied only in the cases in which the ad-valorem duty on the declared import value were lower than the new specific rate. This decision was explained in terms that after a certain degree of market penetration by imports, the internal price would not fall any more, therefore there was no point in encouraging further imports that would damage the local industry with no benefit for the consumer.[99] Other sources indicated that the way in which the special duty was calculated was to make it equivalent to an 11% for textiles proper, and 15% for garments.[100] In December 1993, Resolution 1554 of the Ministry of Economy raised

---

[98]Clarín, October 17, 1993.

[99]Clarín, July 31,1993.

[100]El Economista, Aug. 6, 1993.

protection again and in January 1994 the duty on shirts was increased.

Having taken notice of producers and trade unions' reactions, which had to be expected in the context of import competition in a very large and heterogenous industry, it is convenient to summarize the views of professional observers who have looked at the situation of the industry.

Looking at yarns, a distinction must be drawn according to type of material: cotton, wool, synthetic and artificial fibers. Argentina has adequate raw materials production for the cotton yarn factories. Experts' opinion on the future of yarn production however is divided between those who expect this advantage, combined with good technology to ensure a certain level of competitiveness, and those considering the Argentine industry in that particular segment as lacking in scale. Moreover, that the costs of energy in Argentina are too high to sustain competition from the Brazilian producers with lower cost of energy. In any case, it must be noted that those experts who consider this costs asymmetry very important, suggest that size of this industry segment will be reduced in Argentina through restructuring.

The production of wool yarns in Argentina shares the problem of competition from synthetic fibers with similar industries of other wool producing countries. The problems are said to be compounded in the short term by sales of stocks held by Australia and New Zealand. Also, this segment is reported to not having updated its equipment. On the positive side, the close example of

Uruguay, where a group of firms has specialized in high quality woolen materials production successfully competing in the international market, is mentioned as showing a line to follow by Argentine producers as well.

The matter of production of synthetic yarns seems to be the one "out of discussion", i.e. the local cost of raw materials compared to international produuction is said to put severely into question any chances of survival for this type of production.

Considering the weaving segments, the views are that cotton textiles should be in a good position as it has recently concentrated investment; but, even the large local plants are considered low-scale in comparison to those in other countries. This segment is also troubled by high energy cost. On the other hand, it is a segment in which some large firms operate, and observers think these firms should be in a position to adapt to the new conditions, and that Argentine cotton textiles are in a relatively better competitive position than synthetic fiber textiles.

Regarding production of clothes, those observers are somewhat optimistic than when they analyze spinning and weaving industries, as they state very clearly that in the low quality or low price levels, Argentine may not be competitive at all, but in better quality segments and/or in differentiated products, firms have fairly good chances to survive.

Summarizing, solutions proposed in very general terms for Argentine textile industries tend to emphasize natural resource

base (cotton and wool) as well as differentiated productions based on the level of quality and of training already reached by this sector facing a market that although closed has been to some extent demanding.[101] The apparently agreed view on synthetic yarns is that that market is already lost to Asian producing conditions and to the effects of dumping. Regarding fabrics, some producers are establishing alliances or mergers with suppliers or with commercial firms (including some from Brazil) to improve their chances in the market.[102]

C.PULP AND PAPER

PULP AND PAPER SECTOR

a.Resource base and past trends

i.Introduction

The pulp and paper sector is a natural resource based sector; the main input has been traditionally the wood from natural forests but production is now becoming increasingly based on implanted-forests wood; due to its natural conditions Argentina is one of the countries in a position to develop a competitive forests base on the basis of growth of trees much quicker than growth at traditional Northern Hemisphere supplying countries.

This sort of development requires however large investments in forestation and in large scale industrial processing at the pulp-making level and at the paper and other final products making

---

[101]Clarín, Oct. 10 1993.

[102]El Economista, October 15, 1993.

level. Traditional international trade has as suppliers the Scandinavian countries and the U.S., joined recently by Brazil. The natural comparative advantages situation in the four Mercosur countries creates the possibility of all of them becoming low-cost producers, what would in the long-term shift emphasis from a situation in which problems or opportunities stemming from intrarregional trade would be critical, to a situation of regional exports to the rest of the world and intra-Mercosur trade between equally competitive producers. At the moment, however, Brazil is the country in the region with larger scale production and more international trade experience.

Economies of scale are important in this sector and construction of larger plants at times of good prices contributes to creation of excess supply capacity that together with general cyclical variations in international economic activity leads in turn to low prices periods. The current situation in world trade is a low price situation.

Technology and equipment for investment are available in the market; specialized international consulting firms are capable of developing projects for investors. Investment cost is high and includes a large component of costs of development of infrastructure and of plant erection and installation of equipment, which cannot be recovered in the case of sale of the plant equipment. One form of investment consists though in the upgrading or modernization of large existing pieces of equipment.

ii.Past trends

Pulp consumption in Argentina has increased from 464,000 tons in 1980 to 633,000 tons in 1991, while production has increased in the same period from 338,000 tons to 667,000 tons; the surplus production is exported. Regarding the final products, paper and paperboard, in the same period consumption increased from 933,000 tons to 1,117,000 tons and production increased from 705,000 tons to 963,000 tons.[103] The country is thus a net importer of paper and paperboard in spite of a marked increase in production. Regarding the evolution in the period 1991-1993, production in Argentina increased in 1992 but decreased in 1993 in spite of the government's decision to curtail imports of some products after receiving strong complaints about their import prices from Argentine producers.[104]

iii.Foreign trade

Argentina is a participant in the sector's international trade at the level of 0.25% of world trade in 1988. In the 1980s exports increased at least ten-fold; in 1990 value of exports was 166M$ and imports 61.7 M$. Exports included long fiber white kraft cellulose, some types of writing and printing papers, cardboards and papers for packaging.[105]

Trade in pulp (cellulose) had strong variations in the 1980s,

---

[103]UNIDO, "Medium-term Scenarios for Industrial Restructuring: The pulp and Paper Subsector", Mercosur Series Report A.1, August 1993, Table 1.

[104]Ambito Financiero, Jan. 26, 1994.

[105]IEERAL, "La industria de Celulosa y Papel en Argentina y en Brasil", Cordoba (Argentina), 1991.

with a reduction in imports volume as a large pulp plant started production; furthermore, exports increased rapidly. In 1980 there had been no cellulose exports, and 68.4 M$ imports; value of exports in 1990 was 62.7 M$ against imports for 9.5M$. Trade in paper had as well a positive change from 1980 to 1990, as exports increased from 11.6 M$ to 103.5 M$, while imports for 52.2 M$ were lower than imports for 183.3 M$ in 1980.[106]

In 1990, the composition of final products exports was 30% printing and writing, 25% paper and cardboard for packaging, 20% newsprint and 15% tissues and papers for home uses. Imports included 30% paper for printing, 20% waterproof paper, and 4% newsprint. The marked overall decrease in paper imports from 1975 to 1990 is related to newsprint import substitution; In 1990 imports of all types of paper except newsprint started to increase and in the first half of 1991 imports were worth 44M$, close to the total imports of 1990. The increase in physical volume of exports between 1980 and 1990 was from 4,800 tons to 135,000 tons; some analyses have put emphasis in the changes in the internal market conditions as an explanation for paper exports.[107]

iv.The industry

Regarding industrial structure, production of cellulose is carried out at 27 plants in 21 firms, mostly for their own

---

[106]IEERAL, op.cit..

[107]Working Paper on Paper Exports, Research Project on Manufactured Exports, IDB/Di Tella, 1988.

consumption.[108] Total capacity is reported to be 948,200 tons/year but there are great differences in scale and presumably in efficiency among them. The eight largest plants, each one of them capable of producing 35,000 tons/year or more (including the largest, Alto Parana, with a capacity of 240,000 tons/year) account for 90% of total capacity; furthermore, just six of them, accounting for 65% of capacity, are considered well equipped, with good processes and good product quality.[109] On the other hand the average age of pulp-making equipment has decreased because of some plant closures and the opening of the large new plants of Papel Prensa, Alto Parana and Papel del Tucuman.

The final products segment of the industry includes production of newsprint, printing and writing papers and papers and boards for packaging. Production plants were very different in integration, size, age of equipment and quality of production. Very few were rated as having a high productive capacity, efficient operation, good equipment and processes and adequate quality.[110] Development of the sector in Argentina has been based on many small plants near the urban markets, while the current trend is to have larger integrated plants near the raw materials source.

Given the possibility of a strategy of exports to third countries for Argentina as well as for all Mercosur countries, it

---

[108]IEERAL, op. cit..

[109]IEERAL, op. cit., quoting BANADE, "Perfil Industrial. Manufactura de la Madera", 1987.

[110]IEERAL, op. cit..

is worth mentioning that for international observers even the Brazilian structure is considered not adequate; the overall Mercosur situation is described as dominated by many small mills and small paper machines, and the mills as old vintage and undercapitalized. The same source indicates though that "industry leaders in various market segments are growing in size and in operating efficiency". It is important to notice that the weaknesses of the productive structure, whether at Mercosur or at country level, operate against taking advantage of the basic comparative advantages. Generally speaking, South America is a low cost softwood fibre producer, and for hardwood pulpwood Brazil is also a low cost producer; delivered pulpwood dollar costs are quite similar between Mercosur countries. Furthermore, these shared advantages are expected to increase in the coming two decades, as genetic advances increase the yield of the plantations and more mechanization in woods is introduced.[111]

The analysis of Mercosur industrial costs (in the sense of costs of materials, factors, energy) leads to the conclusion that most costs are reasonable by international standards and comparable between countries.[112] Some national costs are however out of line, e.g. energy costs in the case of Argentina, and social security and other wage-related costs in all countries as their amounts are compared to U.S. similar costs (thus the wages are lower in Mercosur countries than in the U.S. but the overall cost

---

[111]UNIDO, op. cit..

[112]See UNIDO, op. cit., table 8.

of hiring labour is not that much lower). A comparison of competitive factors based on ratings in a 1 to 10 scale, puts Argentina in the 7-8 range (although with a rating 5 for newsprint) in the category of natural resources factors; in technical management and know-how, Argentina is rated below the international competitors class; while Argentina has a 9 rating for pulp but just 4 or 5 in any other category.[113] It is very clear that the combination of a generally poor industrial structure, some management shortcomings, and certain excessive factor and production costs, makes Argentine paper industry much less competitive than it could be.

b.Constraints and prospects

The current situation and restructuring efforts in the Argentine paper industry must be placed in the context of excess supply/low demand in the international market and also a large decrease in internal consumption in Brazil in 1991. In Argentina in 1991 there has been an increase in consumption at the same time that imports were made easier by general liberalization of trade, the level of exchange rate overvaluation and tariff preferences awarded to Brazilian products. Exports have become at the same time more difficult, largely for similar reasons and increase in internal costs. The effect on internal prices of import penetration is moderate, the fall in prices has been 10%, but in a situation of rising costs profitability is made lower or negative; several medium sized firms are reported to have closed, other firms have

[113]UNIDO, op. cit., table 12.

interrupted production of some products, etc..

There are very few indications of what improvements are effectively bein' implemented in the Argentine paper industry; there are indications though that some important companies are beginning to get out of deep and long standing problems (often after changing ownership or in the process of doing so); in the case of one of the large companies, Ledesma, a very succint reference in the financial newspapers places it in the group of firms that have succeeded in adapting to the new context without major trauma.[114]

The view from the perspective of the regional studies is that in all Mercosur countries "adjustment moves" in the pulp and paper sector are underway, most apparently among the industry leaders but sometimes with the lead of smaller firms; and, also, that some capacity is outmoded and should be curtailed. Looking for some indication of how does this general statement apply to Argentine industry, we find the same source supplies a comment to the effect that "pulp and paper subsector adjustment-related hardships were found to pose greater challenges to Argentina than to the other partners...no easy solutions were identified".[115] A special case is the Alto Parana softwood pulp project, which has an appropriate design and has produced and exported pulp for about a decade but is changing hands as well, apparently because of problems having arised in the final product firms that

---

[114]Ambito Financiero, Sep 8, 1993).

[115]UNIDO, op. cit..

own equity in the pulp-making enterprise; also, two large scale newsprint projects have encountered difficulties in the implementation stage.[116]

The firm that has been for a long time the main paper-making firm of Argentina, Celulosa, has had substantial problems for almost twenty years and it is now under the control of a group affiliated to Citicorp, the U.S. bank. In the 1970s Celulosa was the main group in the pulp and paper sector, having as well a very good record in securing the ample benefits of the promotional systems; Celulosa was the owner of Celulosa Puerto Piray, a project now finished but yet to start production, and it owned 50% of the Alto Parana project besides some other expansion projects at affiliate firms. The firm however experienced problems with the 1979-1982 trade liberalization and the subsequent crisis in the economy as well as from the decline of demand in the economy, financial difficulties, and differences and conflicts within its management ranks.[117]

The Puerto Piray plant is yet 42% owned by Celulosa while the rest of the shares are in the hands of Citibank and other shareholders (but Celulosa itself is under control of Citicorp) and the project is reported to be under review; apparently some international consultants are preparing a plan to start production

---

[116]UNIDO, op. cit..

[117]Schvarzer,J., "Expansion, Maduracion y Perspectivas de las Ramas Basicas de procesos en la Industria Argentina", Desarrollo Economico, Vol. 33, No 131, Oct-Dec 1993.

in a modular way.[118] It is also reported that the project would require an additional 100M$ investment and that Citicorp has decided it requires an international firm to operate it.[119]

One case of firm in difficulties seems to be the second largest producer, Massuh. Apparently this firm has been the subject of an appraisal generating recommendations for incremental investments and operating improvements to increase efficiency; such recommendations were reported to be under review while financing for the required investment was still pending.[120]

The Alto Parana plant is in the hands of Citicorp and of a "bankers' club" formed by creditors of Massuh, and they are reported to have agreed to first make improvements in the plant and then trying to sell it for a profit.[121] At the beginning of 1994, however, reference to Massuh was once more made in the press , as the Banco de la Nacion, state-owned and in charge of the remaining business of the closed Development Bank, has become a partner in Massuh; the report concludes that the Massuh family now owns 58% of the firm, and that the Continental, Chemical and Nacion banks together, own 35% of the firm.[122]

In the cases of other firms it is convenient to describe some recent events, a financial group managing US funds, has bought two

---

[118]Prensa Economica, op. cit..

[119]El Economista, July 7, 1993.

[120]UNIDO, op.cit..

[121]El Economista, July 7, 1993.

[122]Pagina 12, January 8, 1994.

midsize plants and has made some unspecified agreement with a third one; Witcel, the special papers operation of the Cellulose group, has been sold in two stages to foreign owners (50% at a time).[123] Another important event is the sale (taking place at the time of writing) of Papel del Tucuman, a modern bagasse-based plant with a difficult history.[124]

A final point of probably great importance is that the government has already been induced to cut competitive imports. The government's goal seems to be to allow an overall 20% penetration of the local market by total imports. Given the available data on production capacity to replace such curtailed imports by local production, analysts suggest that this decision will mostly benefit three firms, Celulosa, Massuh and Ledesma.[125]

The previously presented tentative conclusion that the industry is now in a phase of redistribution of assets while improvements and other real investments are yet to come, seems to be reinforced by such reports on denationalization and takeovers by financial creditors. Another aspect of the same reality is the fact that there are no projects under execution, and that even those large projects which had been put forward until now were just pulp-making operations, as no investors had shown interest in

---

[123]Cases reported in A. Financiero, September 8, 1993.

[124]El Economista and other newspapers reports and advertisements.

[125]El Economista, July 8, 1993 and January 7, 1994.

investing at the paper-making stage; in any case the pulp-making new projects are as well indefinitely delayed.[126]

D.PETROCHEMICALS, RUBBER PRODUCTS

PETROCHEMICAL INDUSTRY

a.Resource base and past trends

i.Introduction

Petrochemical production in Argentina is based on local natural resources. The country produces the oil it requires and has reserves of natural gas large enough to consider exporting it as fuel. Petrochemicals production requires approximately 4% to 5% of Argentine hydrocarbons consumption. The industry had a tentative start in the 1940s, and a more ample but disorganized and based on very smalls plants development in the 1960s. Supply of basic products (inputs for downstream plants) and the production of a larger number of final goods in plants of more adequate scale were developed in the 1970s and 1980s.

Sector development at different stages of its evolution has been accomplished with the participation of foreign firms, State capital, and later, with an important role of national private groups. The current situation is that local groups are the most important private agents in the sector while the State has begun to sell the holdings it has in it. Currently the process of privatization takes place at the same time that the main local groups already involved in petrochemical production find themselves

---

[126]Schvarzer, op. cit..

in financial trouble, and the sector as a whole must adapt to changes in regulations and in the economic context, all of that at a time of quite low international prices. The international market is said to be feeling the effects of recession in some of the industrialized countries and overcapacity in Asia, and prices are expected to remain low until perhaps 1995.[127]

The international context has helped shaping the development of the Argentine petrochemical sector. The first "oil shock " led to a high prices "mark-up" policy at the international petrochemical companies but the "second shock" led to a restructuring process in which advanced countries reduced production of basic and commodity products to concentrate in higher value added products, hence developing countries possessing the relevant raw materials found a space in the production of petrochemical commodities, and Latin America increased its participation in production.[128] The trend started reversing itself when oil prices fell after 1986.

ii.The industry

In Argentina until 1970 the size of plants being erected was adapted to (low) local demand rather than to minimum economic scale parameters. One consequence of that was that their production capacities were overtaken by demand during the 1970s; the only

---

[127]Lopez, A.,"Ajuste Estructural y Estrategias Empresarias en la Industria Petroquimica Argentina", Desarrollo Economico, Vol 33, No. 132. Jan-March 1994.

[128]Ramal,M., "Polimeros plasticos y anhidridos", BID/Di Tella Project on Manufactured Exports, 1988.

products for which this did not happen were those requiring smaller investments implying more easy entry for new producers. Eventually projects adapted to increased internal demand, as well as to requirements of minimum scale, incorporated in the prerequisites for obtaining the benefits of promotion regimes, hence since the second half of the 1970s new plants were built at much more adequate scales; the size of the internal market had reached the point in which it could support minimum economic scale plants.

Also, at the time in which availability of inputs was limited, private multinational companies advanced plans for establishing two "petrochemical complexes" to supply economically scarce raw materials (they received the name of "polos", indicating their potential for generating development around them). The Argentine state decided to take up such construction itself, and in 1970 and 1971 the construction of one olefine-based complex (Petroquimica Bahia Blanca) and of one aromatics-based complex (Petroquimica General Mosconi at Ensenada) were approved. State and private firms were to have different levels of participation in ownership of basic or intermediate product plants, and in "satellite" plants producing final products in each one of the complexes. Project implementations for plants corresponding to different production stages (basic, intermediate or final products) were however very poorly coordinated; as a consequence the ethylene plant at Bahia Blanca, erected in 1977, did not have ethane supplies until 1981, nor did it have operative downstream producers to buy its ethylene when ethane supplies from a separating plant were made available

and ethylene could be produced. As for the industrial utilization of the ethylene it started to produce, the planned satellite plants were even more delayed but initially unplanned polyethylene facilities were established by private producers (one of the new plants was in fact a floating state-of-the-art plant bought abroad and brought by sea to operate at a coastal location). Both at this "polo" and at the Ensenada complex exports were due to imbalance developed.[129]

Promotional regimes and incentives were used to foster sector development, but possibly the most important incentive was the feedstock pricing regulations implying a strong subsidy for production, as most promotional regimes for the sector assured feedstock supply at low prices for industrial transformation. In 1984 prices paid by the industry for petrochemical inputs were between one third and one half of prices paid by the industry in industrialized countries.[130] In 1986 and after the international and retention values for naphta changed relative positions in some years, but the price paid by the petrochemical industry was still lower and had a subsidy element in it.[131]

---

[129]Ramal op. cit.; Bekerman,M. "La Industria Petroquimica en Argentina y Brasil. Posibilidades de lograr una Integracion Sectorial, 1991; Gerchunoff,P. "Caso 5: la Petroquimica" in Las Privatizaciones en la Argentina, edited by Gerchunoff,P. Instituto T. Di Tella, Buenos Aires, 1992; Chudnovsky,D., Porta,F. and Lopez,A., "Ajuste estructural y Estrategias Empresariales en la Argentina: un Estudio de los Sectores Petroquimicos y de Maquinas Herramientas", Buenos Aires, 1992.

[130]See Bekerman, op. cit. table 11.

[131]Data from Ramal,M., "Industria Petroquimica. Polimeros y Acidos Oxigenados. Informe Final", BID/Di Tella, 1989.

However, the main point about the subsidized prices was perhaps not their existence but the fact that the low costs were not passed along the value-added chain to the final consumer or to promoting final products exports, but were often appropriated at the start of the chain.[132] Some examples are that Petroquimica General Mosconi exported its basic products at international price based on the subsidies while charging much higher prices in the internal market; and Petroquimica Bahia Blanca after 1984 established a cost and mark-up contract with its customers so that it sold ethylene at prices above the international price to them (after 1987 this was changed to a different contract system and the price became close to international price).[133]

The influence of the feedstock prices system can be seen both when it was in operation and when it was discontinued in the economic reforms process. The overall profile of the sector improved considerably in the 1980s as many new investments, largely by nationally controlled private firms, were made (the latest additions to capacity were made in 1990 and 1992) but a whole portfolio of large investment proposals is currently frozen, as changes in the economic regulations developed and the overall international sector situation has become more complex.

iii.Production and foreign trade

The Argentine petrochemical sector is at present a producer of

---

[132]Givogri,C., "La Productividad del Capital", IEERAL,Cordoba, 1987, quoted by Lopez, op.cit..

[133]Lopez, op. cit..

over two and a half million tons of basic, intermediate and final petrochemical goods; sector growth was at the rate of 6.3% per year from 1970 to 1988,[134] capacity in 1991 was rated at 3,400,000 tons/year but there have been plant closures since these estimates were made.

The following table[135] shows that during the 1980-1990 period production of intermediate and final products increased more than production of basics, but in all cases the increases were quite important. Production and ratios of exports to production in parenthesis (unit of productions, tons):

Year/Products	Basic	Intermediate	Final
1980	527,598	315,558	329,316
	(35%)	(18%)	(4%)
1990	948,590	802,369	798,114
	(19%)	(20%)	(28%)

The relative weight of basic, intermediate and final production underwent changes as the productive structure of the sector evolved, firstly by adding capacity in basic plants and later through the commisioning of final product plants. The story of petrochemical exports is more related to internal circumstances and problems than to the planned exploitation of comparative advantage. As suggested before, plants became larger just because capacity for an expanded internal market was added; lack of

---

[134]Bekerman, op. cit..

[135]Data from Chudnovsky et al., op. cit., tables 2-1 to 2-3.

coordination as well as internal market recessions created situations in which there were no customers for production facilities operating at various stages of production; in this context, the feedstock price subsidy and/or price discrimination between the internal and the external market, besides the fact that plants were already operating at more efficient scales, made exports possible.

Data on participation of exports in total production presented above indicate that in the early 1980s there was a bias in exports towards the export of basic products (35% of production was exported) with very low participation of final products (4% exported); this was the outcome of opening the basic products plants before the final product "satellite" plants at the petrochemical complexes. In 1990, a more balanced production structure allowed final product exports to be proportionately higher (28% export orientation) than basic product exports (19%) or intermediate product exports (20%). Also, relations between exports and imports at any level of production were different. For example, for basic products, exports in both 1981 and 1990 were much higher than imports, in intermediates, exports and imports were of approximately the same order of magnitude, and in final products exports were much lower than imports in 1981 but were slightly higher than imports in 1990.[136]

iv.Technological Profile and Scales of Production

---

[136]See Lopez, op. cit. table 6.

In Argentina, petrochemical industry plants in operation belong to different generations corresponding to different cycles in investment; recent closures may be changing that state of affairs, but nominal reported capacity for certain products used to include plants of the 1960s (small and possibly technologically obsolete) together with plants of the 1970s to early 1990s.

From the point of view of what types or levels of processes are operated in Argentina, it is clear from the "polos" or complexes strategies, that there were meant to be integrated production families for olefine-based and aromatic-based products; besides many other processes involved in making other basic, intermediate and final goods in plants not integrated to the complexes. Technical change has involved the incorporation of better and larger plants during the investment periods of the 1970s and 1980s, as well as partial modernization of plants.[137]

The overall dimension of Argentine petrochemical industry is not large, it is similar to just one of the existing Brazilian complexes. Local plants are however comparatively better than during the early years, scales are more adequate, plants are better interrelated and capacities are more balanced. In some views, many plants are now at (the lower end of) the efficient scale range and "do not impose excessive penalties on efficiency"; it is interesting that larger scale for these plants was just due to the fact that the internal market had grown large enough, and that

---

[137]See Lopez, op. cit. for a detailed discussion of technological strategies of petrochemical firms.

official requirements on scale had been included as part of the conditions to receive promotional incentives for investment.

Data on actual Argentine plants and reference values on minimal economic scale,[138] were examined to try to determine if there is a pattern in scale or age (as a proxy of possible technology generation), for different productive capacities. The tentative conclusions were that only for a few products existing plants are all economic scale plants, for the remaining products (plants) there is an heterogeneous situation, where plants of different ages coexist.

As indicated before, the time at which investments were made is a rather important factor in the scale (and presumably the degree of technological updateness or obsolescence) of the plants. On the basis of the listing of firms, scales and dates of commisioning them it was also determined that out of 40 Argentine plants commisioned before 1974, 34 have scales below the minimum accepted international dimension, while out of 22 plants that started operation after 1974, 16 have scales that are in the international range, and just six have scales below minimum required scale.[139]

v.Industrial organization

Under the first set of promotional measures that worked in the 1960s in the direction of inducing foreign companies to invest in

---

[138]As presented in Chudnovsky et al., op. cit, table 2-9, and Lopez, op. cit..

[139]This analysis was developed in Lopez, op. cit..

plants in the first petrochemical investment wave, mostly it was foreign firms that entered production; totally national groups or firms in which national groups had a controlling interest were later more active as investors in new capacity than foreign firms, and during the decade 1980-1990 the structure of ownership of the petrochemical industry became more oriented towards national ownership. Expansion from 1981 to 1988 involved investments for 1,200 M$ made by 12 firms or groups. Only two of those economic agents were fully foreign owned while 8 out of 12 were at the time under national control.[140] At the current time of privatizations the question may be asked whether the same groups will advance to the control of former state-owned assets. The experience so far is that during privatization of minority shares of mixed property firms in which the government held 30% equities, no firms except those already holding the other 70% ownership showed interest in buying the State's part.

vi. Incentives, input prices and sector development

The Argentine state has supported development of the petrochemical sector in many ways. The factor that is considered to have been the single most important stimulus to the development of the petrochemical sector in Argentina, is the government's policy regarding prices of raw materials. As Argentina has good national supplies of oil and gas which were controlled by State firms, it was possible for the government to give advantages to the petrochemical sector through the supply of feedstocks at low

[140]Chudnovsky et al., op. cit..

prices.

The State was also share-holder in the "complexes' and in at least one other firm outside them, Petroquimica Rio Tercero. another role for the state was to restrict imports to protect the development of the sector as a whole. Furthermore, the State established a regime of exemption and/or postponement of payment of different taxes, and exemption from payment of import duties on imported capital goods for the sector, at the same time that State-owned banks provided credit and guarantees for private investors.[141]

As explained before, the feedstock subsidies were considered the most important form of assistance to the sector, but the advantages were not passed forward along the production chain. The reason was that under high protection of petrochemical goods, and low competition in the internal market (most product markets were monopolies or oligopolies),[142] it was possible for producers to charge prices higher than international prices at practically all stages.

Protection was slowly reduced after 1984, starting by reducing non-tariff protection and then the tariffs, mostly on final goods. But price discrimination continued to exist, as firms charged higher prices in the domestic market than for export. For a sample of 19 products, it was found that in 1987 eight of them had a

---

[141]Gerchunoff, op. cit..

[142]See Gerchunoff et al. op. cit. table 3, p. 401.

higher price in the internal market than for export, this shows discrimination in some, not all products. However, in the year 1990, 20 products had all of them an export price below the domestic market price.[143]

As a consequence of the structure of protection, competition, and price formation just described, prices paid by producers along the chain and by other Argentine producers requiring petrochemical industry products as inputs for their industries, were higher than international ones and in fact even after considerable trade liberalization they continued to be so. It is interesting that at the same time the sector had become an important exporter and that the sector organizations discussed the viability of exports emphasizing the great sensitivity of such exports to feedstock prices.[144]

b.Constraints and prospects

Changes in the conditions of operation and profitability of the industry may be of two types: changes in context and changes originating in deliberate reform. The fall in international prices was important, regarding reforms, the main areas are the trade liberalization, the privatization process, and the elimination of all special advantages regarding inputs of raw materials.

The tariff was set at 5% for basic products and 13% for final goods; dispersion was reduced. At the same time, and as in other

---

[143]Chudnovsky et al., op. cit..

[144]Instituto Petroquimico Argentino, "Materias Primas. Su gravitacion en el Desarrollo petroquimico Nacional", Buenos Aires, 1989.

sectors, the industry reached price maintenance agreements with the government; in the international market, prices were decreasing. Regarding privatization, state holdings in the industry were, (a) in the Petroquimica Bahia Blanca complex, the Government owned a majority share in P. Bahia Blanca itself and minority shares in other four plants. The minority shares of those satellite plants, were to the private companies that owned the majority shares of those plants. The sale of the main plant, i.e. the ethylene plant, has not yet been done. (b) In the case of Petroquimica General Mosconi the solution has been simpler, YPF was a creditor of the Mosconi main plant and has gained complete ownership through capitalization of such debt.[145] (c) The government also sold a 39% share it had in Petroquimica Rio Tercero.[146] Elimination of advantages regarding raw materials for the industry. In terms of the "Economic Emergency" law, and the oil industry deregulation decisions, all special regimes oriented to the supply of petrochemical raw materials in special or privileged conditions were discontinued. Prices are to be agreed through negotiations between suppliers and users and the oil or gas companies have now no obligation to give priority in supply to the petrochemical industry.

Under the new conditions, imports concentrated in final goods, changing the market shares of imports and local production in a

---

[145]Clarin, January 10, 1994 and Lopez, op. cit..

[146]Ministry of Economics, Report on Privatizations, September 1993.

condition of higher consumption. Overall financial condition of local companies has become critical. Investments and investment plans have also been negatively affected, in 1990 two investments were completed, at Mosconi, a project for production based on olefines, and at Resinfor for methanol production; while in 1992 Petroken (a firm with Shell and Ipako as partners) completed a plant for polypropylene.[147] But no new announcements were made.

The government has taken several actions to alleviate the situation of producers. It has established a quota for high-density polyethylene from Brazil through establishing a higher tariff for imports above 14,655 tons.; also the government has acted on PVC, establishing antidumping duties and reference prices for imports from Mexico and the U.S..[148] Finally the government controlled Bahia Blanca plant has reduced the price of ethylene from 411 $/ton to 375 $/ton. This has two effects, it reduces costs for the now totally private satellite firms making polyethylene and reduces the sale price for privatization of the main plant. The situation in the petrochemical complex is difficult to evaluate; on the one hand, investments in the sector in the 1970s and 1980s have been significant, plants built in the last 15 years have rather appropriate scales, and many among them have accumulated production, management, and international marketing experience; on the other hand, today they face uncertainties at a time of

---

[147]Chudnovsky et al. op. cit..

[148]Ambito Financiero, November 10, 1993 and January 5, 1994, and El Economista, January 7, 1994.

increased competition and deteriorated financial situations.

THE TIRES INDUSTRY

a.Past trends

i.Introduction

The existence and evolution of a tires industry in Argentina has been related, first, to the early build-up in the country of a significant stock of imported motor vehicles (453,900 in 1930); and, after 1960, to the steady growth of such stock as a newly created local automobile industry started shipping several tens and then hundreds of thousands cars per year, while yet other industries such as the agricultural machinery and tractor industries, the motorcycle and scooter industry and the bus and truck building industries also contributed to the large increase in the number of vehicles requiring tires.[149]

It is important that the build up in the number of vehicles, besides creating demand for tires for the new units, expands the replacement market, twice larger in fact now than the market created by the regular supplies to the vehicle industry. In 1960 the total vehicles stock was 865,500 units; in spite of some years of poor performance by the automobile industry that figure increased to more than five million at the end of the 1980s and is now growing at a rate of some 400,000 units per year (now including imports) just in the light vehicle segment (cars, pick-ups). By

---

[145]Movimiento Industrial Argentino (MIA) Bulletin No. 14, March 1994.

some estimates production of tires in 1993 was expected to reach practically 6,500,000 units.

Up to the late 1980s, estimates of local supply of tires indicated that the local tire industry supplied 96% of the total demand for such products. Production is carried out by four plants, three of them belonging to affiliates of multinational corporations (Firestone, Good Year and Pirelli) and one belonging to an Argentine diversified business group (Fate). The range of products seems reasonably up to date, as steel radial tires have been in production since 1982 and there is as well production of many special tires as for tractors, self-propelled machinery, etc.. Total employment in the sector was 7,000 in 1979 , 5,500 in 1990 , and is 6,000 now.[150]

Over the last decade and a half, the tires market has undergone strong oscillations in Argentina, but all four producers stayed until now in the market. The main question however seems to be whether there is room in the market for four efficient plants; on the other hand, that sort of question tends to be forgotten when the market recovers, at least, that is what has happened in the past. Furthermore, there is now a new element to take into account, the economic integration agreements between Argentina and Brazil, which could be used by the multinational affiliates to supply the Argentine market from their existing, reportedly much larger plants located in Brazil.

---

[150]Bulletin Ministry of Economy; Unión Industrial Argentina Yearbook; Ambito Financiero, Aug 31, 1993.

ii.Past Trends

Manufacturers' association statistics show that in 1968 total production was above 2,500,000 units, 60% of which were for automobiles, 15% for trucks and 10% for tractors. Production increased strongly up to 1979, reaching then a high point of 5,600,000 units. However, production volumes after that date oscillated between that level (in 1988 and in 1992 production was again practically 5,600,000) and of 3,723,000 in 1982, 3,900,000 in 1985, and 4,740,000 in 1991.[151] The breakdown for 1992 by product (by type of vehicle using the tire), was as follows: for automobiles, 3,845,000 tires (68.3%), for pick-up trucks or vans, 858,000 (15.2%), for trucks/lorries, 662,000 (11.8%), for tractors (front wheel), 203,000 (3.6%) and for tractors (rear wheel) 60,000 (1.1%); total, 5,627,000. Comparing both groups of data, it is found that after 24 years the main differences are in a moderate increase in participation of automobile tires, with a loss of share of tractor tires.

Exports contributed in some years to the compensation of internal market decreases but the sector did not become an industrial exporter with a performance comparable to that of other branches of Argentine industry. In the second half of 1993 industry sources forecast production of 6,000,000 to 6,500,000 units in that year (this would represent at least a 25% recovery on 1989 figures). Leadership in production value is held by the national capital company but in fact projected market shares for 1993 of all

[151]MIA Bulletin No. 14, March 1994.

four producers were within a narrow range, around 25% (the largest share corresponded to the national firm Fate with 26.8% and the lowest to Pirelli with 23.1%). Value of total production is 350M$ and replacement sales represent 70% of the market. Imported tires supply now 25% of the market.[152] The level of exports for 1991 and 1992 was in the range of 450,000 to 550,000 units while the level of imports in 1992 was close to 1,500,000 units. The multinational firms conduct intrafirm exchange with the Brazilian affiliates.

On the basis of data reported at the firm level, exports for Firestone, Fate and Good Year in 1992 and 1993 were respectively 4.1 M$ and 12.1M$, 7.3M$ and 10.1M$, and 1.1M$ and 7.2M$. Total exports for 1992 were therefore 12.5M$ and for 1993 29.4M$.[153] One of the multinational firms reported that participation of imported goods in its 1991 and 1992 local sales, had been respectively 21% and 16%, while its ratios of export sales to total sales in the same two years had been 14% and 6%.

In spite of increased sales, the situation of the industry concerning profits is allegedly not good. Industry representatives say the firms obtain profit rates of 1% or 2%, and that they had collective losses since the 1989 hyperinflation; however the specialized press finds such statements not consistent with the strong increases in sales. The costs of labor and energy and the increase in competition may explain such apparent contradiction. After import liberalization unit prices of locally produced car

---

[152]Ambito Financiero, Aug. 31, 1993.

[153]Data from Mercado, April 1994.

tires have fallen from 120/140 dollars to 70/80 dollars while some imports are even cheaper.

iii.Regional integration and trade liberalization

It is clear that the global performance of the Argentine tire industry is currently in line with the historical record but the circumstances and therefore certain parameters have changed due to the regional integration and generalized import liberalization policy; alleged low profitability could be one of the signs, while statements from industry managers that at least one if not two of the existing plants are redundant,[154] indicate that the situation is in fact unstable (observers believe that total production of the existing plants could in fact be 30% higher). Future market growth based on the continuing expansion of the total national vehicle fleet (leading to sales of new tires as original equipment, and expansion of the stock of vehicles on the road that require replacement tires) will be limited, as the large increases in vehicle production of the period 1991-1993 should give way to much more moderate rates of growth and slower growth of original equipment tires sales. The replacement market will follow that trend eventually too.

In order to understand the unstable situation in the sector, it is convenient to review: the process of trade liberalization, whether by effect of regional economic integration (as it evolved in terms of the superposition of the first bilateral Argentina-Brasil agreements in 1987 and the Mercosur Treaty afterwards), or

---

[154]El Economista, January 18, 1991.

resulting from general trade liberalization; the agreements between enterprises that this brought about; and the range of responses of the various firms to the new situation, including both industrial restructuring and lobbying responses.

Economic integration with Brazil in this branch started after 1987, date of the first bilateral trade agreement (Partial Agreement No. 1 of LAIA (Latin America Integration Association). At first, the view in Argentina was that after 25 years of trade deficit with Brazil in these products the agreement would be beneficial for the country;[155] disagreements between firms located in Argentina about the implementation of specific mechanisms for trade however soon arose and in fact, those disagreements have continued until now, as the four firms in the sector have divergent interests according to whether they are companies with regional affiliates or local firms with no regional partners.

Friction apparently arose as multinationals with affiliates in both Argentina and Brazil tried to accelerate the integration timetable; the fact that there was an integration process going on before the start of the Mercosur agreement (1991), may explain however why such firms expected to continue the sectorial integration process at a faster pace than the general Mercosur process. Also, the economic press reports stressed that the financial position of the multinational affiliates in Argentina was extremely bad at the time. The local capital firm opposed such move beyond certain limits to which it had initially agreed.

---

[155]El Cronista Comercial, Aug. 1 1988.

Furthermore, as import penetration took profits away from local production, in 1993 that same firm succesfully promoted a Government decision based on a safeguard procedure to limit imports.

b.Constraints and prospects

Firms in the sector did not limit their reactions to the new situation to lobbying activities, at least some of them revised and tried to improve their operations, taking at the same time advantage of partial trade liberalization and integration as it evolved.

A general analysis of branch and firms restructuring should take into account the age, scale and technology of plants, and the comparison with the Brazilian counterparts; this information is however only partly available.

Regarding scale of plant, some 1988 comparisons showed that while the local capital firm had then a capacity of 4,000 tires/day, the Good Year plants in the USA had capacities ranging from 5,500 to 61,000 tires a day, and the USA Firestone plants, had capacities of 18,000 to 27,000 tires/day. Given that currently reported production levels at the individual firm level in Argentina show that no large capacity expansions have taken place since then, it follows that all local plants are yet several times smaller than most USA plants; it has also been said that any of the multinational affiliates operating in Brazil, has a production capacity superior to the whole demand of the Argentine market.

Whether the different firms have or have not tried to improve

production methods and overall productivity is a matter of debate. Versions from the side of the multinationals imply that all of them have taken measures to improve their product allocation and their productivity, including cutting down the number of products, taking advantage of intrafirm specialization within Mercosur, a rational response to integration. Foreign firm representatives have also implied that the national firm had not made the required adjustments, while the foreign firms were taking the new integration scenario seriously.

It seems however important to mention that monitoring of announcements and information about developments in this sector has not detected any investment in new plants or in large modernization projects by any firm in recent years. In fact, a local business newspaper indicated in 1991 that the national firm's plant was technically superior to any of the plants of the multinationals, adding to this the information that one of the multinationals had given up a plan for modernization in Argentina, going to the extreme of shipping new equipment that was already in the Buenos Aires port for modernization of the Argentine subsidiary back to its Mexican affiliate;[156] earlier reports about the same firm stated that at the time of the bilateral agreement Argentina-Brazil, it had closed the radial tires fabrication line in Argentina.

There are no visible prospects of any multinational firm locating its main regional plant in Argentina, and it would

---

[156]El Economista, Jan. 18 1991.

probably be too risky for the national capital firm to attempt a very large expansion in the present setting. It is important to notice that in theory, given the market integration process, the Argentine plant could just expand its capacity in Argentina to reduce costs and be more competitive in the common market at large, but in practice it would have to solve all the problems of penetration of a large market with a strong nationalistic tradition such as the Brazilian one.

In that sense, and regarding the question of scale and efficiency, it may be interesting to analyze to what extent a process of specialization, reduction of number of lines per plant, and selection of products requiring different manpower inputs, shorter production runs, or application of new organizational principles, can compensate the absolute size factor, without requiring very large and risky new investments. If such were the case the role of Argentine plants could be redefined in that direction.

E.BUILDING MATERIALS

THE CEMENT INDUSTRY

a.Past trends

Given its low unit value and the long distance to markets, cement is largely a non-tradable good for Argentina; therefore, exports are limited and imports are not a threat to local production, what limits the effects of recent trade liberalization in what this industry is concerned. In the case of cement, even if

imports are not leading to a contraction and/or restructuring of activity, there are indications of changes related to local competition and to technological changes. This goes together with increases in concentration and in foreign participation, the latter not so much in ownership but in direct management, minority participation, and supply of managerial resources and technology to local plants, by multinational firms. After purchase of a smaller firm that had a market share of 9%, a major nationally owned firm (Loma Negra) controls approximately 55% of the market, while two more firms, so far independent and with a joint participation of about 30%, have come under the management of a European group specialized in these products. This may lead to a situation of increasingly concentrated oligopoly in a market isolated from foreign competition, at a time in which it seems very likely that government policy will promote an increase in construction activity. This through support to housing projects and initiatives in infrastructure sectors (in the latter the construction activity itself has been transferred to private operators and construction firms but the government is expected to promote the projects).

The number of active cement plants in Argentina in 1990 was 15; other five plants were not in operation. Total yearly value of production of this branch can be estimated as 600 million dollars. Industrial sector estimates place the total installed capacity at 12 million tons/year, but this estimate must surely be revised in terms of age and efficiency of plants and/or of processing units within plants or firms. In any case, as production levels have

varied a lot, highest real production in the 1980s and early 1990s has been just over 6.5 million tons in 1981, close to that figure in 1987-1988 and again probably close to 6 million tons in 1994, as January 1994; while, on the other hand, production in 1990 was only 3.6 million tons and in 1991 4 million tons, although recovering to 5 million in 1992 and to 5.5 million in 1993.[157]

The latest data seem to define a sustained growth phase still going on and, according to intentions attributed to the Government involving the encouragement of construction, likely to be intensified. On the basis of such data, and given the estimate of 12 million tons installed capacity, it can be seen that capacity utilization has varied between a maximum of 65% and a minimum of 30% in the decade. What this probably means from the industrial point of view is that certain obsolete units never operate.[158]

Demand for cement is dependent on the activity in public works and in private investment, home building, etc., the oscillations of which explain large oscillations of production during the critical 1980s years, characterized by recession and lack of housing credit. The level of activity of the year 1990 was the lowest in 25 years of the industry. The earlier periods of higher activity in construction, which generated very good business for the large

---

[157]Movimiento Industrial Argentino, Bulletin No.3, Feb. 1992, MIA Bull. No.18, July 1993; Ambito Financiero, March 15, 1994.

[158]In one case it is known that 70 year old furnaces were recently used to produce lime rather than cement; plant owner's statement, Ambito Financiero, August 14, 1992.

contractors and their suppliers, were followed by a sharp decline in public works and by the first phase of privatization of public services, during which the new companies did not make large investments. It was the private buildings' construction sector that under the latest stabilization plan showed improvement reflected in the cement sector recovery. In the five year period 1986-1990, 79% of cement production was absorbed by the private construction market, 17% by public works and 4% by exports.

b.Constraints and prospects

Cement plants have large fixed costs and indivisibilities; but labor cost is also high, in the case of one main firm it was reported that the wage bill constituted 30% of the cost. On the subject of competition, the deputy manager of a leading portland cement firm states that product differentiation is very unlikely as there are standards that cannot be changed.[159] Furthermore, he adds, the costs of fuel and energy and manpower are similar for all firms: competition is then related to nearness, service, delivery in time; the transport cost is very high.

In 1990 just seven firms were active in the production of portland type cement. The leading firm had a market share of practically 46% (measured in physical terms); there were two firms with shares of 15%-16% each one and the rest were at or below 9% each; the interfirm linkages that led to the increase in concentration referred to above, were the purchase of the fourth firm (9% of the market) by the market leader, and the reported

---

[159]MIA Bulletin No.3.

coming of the second and third firms under management by one single foreign firm. Thus, even with practically no danger from imports, and therefore no signs of large scale restructuring in the industry due to that cause, individual firms have taken certain initiatives, some in the direction of expansion and product line integration by acquisition (the leading firm, Loma Negra), and other through technical and administrative modernization with external credit and/or receiving technical assistance from a Swiss firm of this branch, with extensive experience as a multinational producer.

Thus, Loma Negra bought the fourth ranked firm, taking its controlling position in the industry to 55%, at the same time that through that purchase they acquired the leading position in a specialized variety of cement, masonry cement, as the purchased firm was the leader in that segment. Another advantage for the buyer was that the firm taken over had added a state-of-the-art processing unit in 1991 while four out of seven main units of Loma Negra were 70 years old, and just three of them were modern units,[160] hence the addition of another brand new unit strengthened the productive profile of the leading firm.

The second firm (J. Minetti) has recently improved its productivity significantly, as shown by its 1993 balance sheet, in which reported sales have increased from 1992 to 1993 from 77 million dollars to almost 94 million dls. while costs have remained constant.[161] This firm had financed modernization investments with

---

[160]Ambito Financiero, August 14, 1992.

[161]Ambito Financiero, April 8, 1994.

the IFC, and local stock-market analysts have reported it has increased production capacity and upgraded its technology.[162] This firm seems to have come to join forces with number three, in a way that will now be explained.

In 1991 and 1992, the third ranking firm (Corcemar) had losses attributed to stable prices for cement and increases in the costs of energy and in wages, its wage bill was reported to be 30% of total cost. This is as well a firm with high financial costs from debt arising from a modernization plan carried out 10 years ago. The response to this situation by Corcemar was to sign a cooperation agreement with a Swiss-origin multinational cement producer, that would take responsibility for its industrial, administrative and technical reorganization, geared to reduction of costs and better utilization of the technology already incorporated at the local firm. To this end the foreign group has already provided a new general manager and a technical manager who should bring Corcemar to an international cost level and improved competitiveness. The local firm would pay a fee for the services received from the Swiss firm. The latter in turn was prepared to take an 8% to 10% share in the firm's capital through subscription of new shares to finance new investment in improvements of production technology defined by the new management team.[163] Furthermore, Corcemar, now under foreign management, has apparently approached Minetti (No. 2 firm) which then sold a share of its

---

[162]El Economista, September 25 1992.

[163]El Economista, May 7, 1993.

ownership to the foreign firm. This combination would create a more powerful second competitor under a common management in the Argentine cement market, starting from a 30% market share if their shares are counted together.[164]

The explanation of this evolution offered by industry observers is that currently the ability to supply technological advances gives great leverage to those international firms with R&D capacity; it is said that this has led to strong foreign entry in countries such as Chile and Spain, where sector concentration has therefore increased strongly.[165] If this is so, an interesting question in the Argentine case is what are the technological and competitive assets of the current national market leader to compete with this active combination of national and foreign firms described.

THE CERAMIC TILE INDUSTRY

a.Past trends

Ceramic tiles are to some extent traded, and in Argentina there is experience of both imports and exports of those products. There are imports both from neighboring countries and from industrialized European countries, corresponding to different ranges of quality and unit value; but the penetration of imports has not brought about an impact similar to that observed in other more sensitive sectors.

---

[164]Ambito Financiero, March 29, 1994.

[165]Ambito Financiero, March 28, 1994.

Production of ceramic tiles for floors and walls (paving tiles and wall tiles) is a 250 to 300 million us$ industry in Argentina;[166] Five firms supply 95% of this demand; imports are increasing, lower cost tiles are imported from Brazil and Uruguay, and higher end designs and products from Italy and Spain. The three largest local firms supply 65% to 70% of the market. The resource base is at least adequate, and reportedly very good in some regions of the country.

There are two markets for tiles sales, the new construction market and the replacement or home renewal market. Both are tied to the level of economic activity, the first one through investments in new construction and housing, the other through the spending possibilities of individual home owners. Construction activity has increased with the present stabilization program. Recent discussion of government's intention to launch plans for promotion of housing are a positive signal for this industry.

Due to marketing needs, firms currently produce many different types and designs of ceramic tiles, and keep expanding the product line. Some firms also produce roof tiles, or glazed tiles. There are differentiation possibilities in designs and forms or sizes, and some firms' strategies aim at exploiting niches even if it implies competing with high end imports.

One of the leading firms, San Lorenzo, was owned by European

---

[166]A 1992 estimate is, production of 39 million square meters (value 200 M$, per year), El Economista, Sep. 11, 1992. Another estimate is 28 million square meters (240M$ value), in 1993, Panorama, Nov 1993.

investors, linked to European firms but reported to have acted in a private capacity since their 1986 purchase of the firm. Performance of this firm in the internal market after such purchase was however quite weak, allegedly due to decreased demand and new competition of firms created with industrial promotion backing.[167] The firm therefore expanded strongly its export activity, but according to industry observers it did not undertake a technical modernization. It is interesting however that its owners sold recently 55% of the equity to the Belgian group Eternit (through Chilean affiliates of the latter), but only after a deep reorganization process was carried out conducted by its then 100% owner. Also, before buying San Lorenzo, the Eternit group bought one of the competitive new provincial firms and has other operations in Argentina, as it diversifies away from asbestos-made materials. San Lorenzo is now buying Italian designs for product line improvement. Another leading firm, Zanón, exports 25% of its production, selling abroad 80% of its floor tiles production and 20% of its wall tiles production.[168]

b.Constraints and prospects

Three leading firms, San Lorenzo and Zanón already mentioned, and Cerro Negro, sell some 200M$ a year worth of their goods while other firms supply perhaps 30% of a near 300 M$ market. It is reported that one of the other competitors, so far with a very low market share, is a former partner of Zanón; this new entrant is

---

[167]El Economista, April 16 1993 and Clarín, October 19, 1992.

[168]Panorama, November 1993.

reported to expect achieving a large market share and has made investments geared to that goal. If that is the case, and imports increase their pressure, competition in the sector may become quite intense.

F.BASIC METALS

STEEL INDUSTRY

a.Past trends

i.Introduction[169]

The first large Argentine integrated industrial capability in steelmaking was established in 1961 by the Argentine State when demand of steel by private rolling mills was already at the level of 800,000 tons/year. The highest level of steel consumption in the country was 4,654,000 tons in 1975. State intervention was supported by a 1947 national plan established by law (Plan Siderurgico Nacional) and the period of State intervention was closed with privatizations in the 1990s. During the intervening period development of the sector was supported by financial incentives, purchase of steel products by the State (allegedly at

[169]The first part of this case study of the Argentine steel industry is partially based on, Soifer,R. "La Industria Siderurgica", in "Apertura, Productividad y Desarrollo Tecnologico en las Industrias Petroquimica, Siderurgica, Automotriz y de Maquinas Herramienta en la Argentina", Documento de Trabajo No. 116, Banco Interamericano de Desarrollo, March 1992; a valuable source was as well Bisang, R., "Factores de Competitividad de la Siderurgia Argentina", in "Proceso de Industrializacion y Dinamica Exportadora. Las experiencias de las industrias aceitera y Siderurgica en la Argentina", Documento de Trabajo 32, CEPAL, Oficina de Buenos Aires, October 1992.

prices much higher than the international price), regulation and control of imports by the Direction of Military Industries, State support and guarantees for steel firms borrowing from multilateral lending institutions, export incentives, and low gas tariffs.[170] Direct government participation included the development of the small integrated steelworks at Zapla since 1945, and the large facilities of Somisa, where a first blast furnace (BF) was erected in 1961 and a second BF in 1974. From that moment on, additions to reduction capacity were made only by the private sector, as each one of two main private firms established direct reduction (DR) facilities in the late 1970s. Steelmaking and final steel products manufacturing were since then mainly based on domestic pig-iron or sponge-iron, whether at the State-run integrated Zapla and Somisa, at the private integrated steelworks, or independent semi-integrated or final product makers, largely buying their inputs from Somisa.

ii.The industry and the firms

The industrial structure, scale and operations of today's Argentine steel industry have not been substantially modified by the changes in public policy (including privatization of the two State-owned steelworks) taking place in the early 1990s. Perhaps the only exception is the new role of the now privatized small steel plant in Zapla, now oriented to the production of special steels. Today, as in the 1980s, Argentine steelmaking capacity, is

---

[170]For a summary of goverment's assistance to the steel sector, see Bisang op. cit., table 21.

practically accounted for by four integrated operations (integrated from reduction to final products making), organized around the already mentioned reduction facilities, plus the contribution of one semi-integrated (steelmaking and final products, no ore reduction) facility, plus rather smaller, specialized, independent, rolling mills.

Given the fact that they represent most of Argentina's steel making capabilities, and that there is a large degree of coincidence between firm data and subsector data, it is convenient to present a description of the four "operations" already mentioned, before presenting the sector quantitative data. The main core of Argentine industry today consists of three business groups, in control of four operations involving six main plants. The three groups are Techint, Aceros Zapla and Acindar; the four "operations" are: the two Techint ones (the "flat products" operation, now known as SIDERAR and a seamless tubes operation, SIDERCA); the Zapla operation (one plant, with a strong bias towards special steels); and the Acindar operation (two main plants, one for diverse products usually referred to as "non-flat" products and including billets, bars, reinforcement steel, wire, etc., and one specialized in special steel products.

The productive facilities belonging to the groups and operations described, are as follows:

-the Zapla works include a small, charcoal blast furnace and an oxygen steel plant; recently privatized, it is now ready to produce 130,000 tons per year, 50% of which will consist of special steels.

A French group holds majority equity ownership in Zapla and supplies technology and management.

-the Acindar operation has its own direct reduction facility (it is one of the two DR facilities mentioned above) and of course steelmaking capacity and rolling mills, commodity production being attached to the same works where the DR facility is located while special steels production takes place at another plant.

-The Techint seamless tubes production facilities are integrated in a single plant, belonging to Siderca, a Techint group firm. Siderca has the second of the two DR installations already mentioned; seamless tubes production is carried out at a large, modern specialized facility and the products are largely exported.

-The remainig "operation" under the name of Siderar (a new firm created after privatization through a merger of former Propulsora and former Somisa- the latter in fact first privatized under the name Aceros Parana), where cold- and hot-rolled flat products and tinplate are now produced. In fact, the old Somisa, the large integrated plant based on two blast furnaces, had capacity for making both hot-rolled and cold-rolled products and the former Propulsora was restricted to cold-rolling, buying the input, hot-rolled coils, from Somisa. Today's merger of the privatized Somisa and the former Propulsora integrates under one ownership and management two activities that were already strongly linked by supply relations. It should also be mentioned that Siderar has 80% Techint ownership and two Brazilian minority partners (one an iron-ore mining company, and the other a steel firm also

specializing in flat products) and a Chilean minority partner, and that Acindar has also bought a small participation in Siderar.

ii.Capacity and production

Actual production of established steel plants is mainly the result of the combination of two factors: the existence of important process capabilities that should operate without interruption, and the effects of international prices and of local economic conditions and levels of activity, on steel demand and on the profitability of operations. When analyzing the sector it is therefore convenient to look both at the more stable figures relating to capacity and those indicating actual production (utilization of such capacity). In doing so it is also convenient to present data for at least two main stages of steelmaking, the reduction stage (iron ore to pig-iron or to sponge-iron) and the steelmaking stage, where the use of scrap as an input allows for production of steel being larger than production of iron at the previous stage.

Reduction capacity in Argentina is near four million tons/year, corresponding to the two large blast furnaces, one small BF and two DR facilities. For the country as a whole there is an absolute level of theoretical capacity at 4 mln. tons and a more realistic level at two and a half mln. tons.[171] Due to this process of closing down and starting again the blast furnaces, in

---

[171]This discussion is not merely a rhetorical exercise, as one BF was actually shut down and reopened during the 1980s (also, Zapla had four BFs, and all of them were closed and now just one has been rehabilitated).

1990, reduction capacity was 3,919,000 tons/year and in 1993 2,746,000 tons/year,[172] while at the beginning of the decade it was the same as in 1993 (the point is that the "increase" in production capacity in the 1980s was not the result of new investment but of activating/ deactivated capacity.

In steelmaking, capacities for 1990 and 1993 were 5,103,000 and 3,933,000 tons/year,[173] both larger than reduction capacity in the same year, but following the same trend; again, each figure represents the sum of all capacities of different level of efficiency being operational at the time.

Total production, employment, and production per worker at selected years (production in thousands tons) were as follows:[174]

	Steel	Rolled Prods.	Workers	Productivity	
				Steel	Rolled Prods.
1980	2,702	2,653	36,786	73	72
1990	3,636	3,083	30,730	118	100
1991	2,972	2,815	21,629	137	130

Available estimates for 1992 and 1993 are not being quoted

---

[172]Gerchunoff,P., Bozzala,C. and Sanguinetti,J., "Privatizacion, apertura y concentracion. El Caso del Sector Siderurgico Argentino", Instituto Torcuato Di Tella, Buenos Aires, 1993.

[173]Gerchunoff et al., op. cit..

[174]Data from CIS, Centro de Industriales Siderurgicos, as quoted in Movimiento Industrial Argentino (MIA), Bulletin No. 20, September 1993.

explicitly as the sources are not the same and the series would lack continuity, but after careful screening of available estimates it seems possible to indicate the following: (a), production decreased sharply again in 1992, in spite of increased consumption, and just recovered in 1993. Local supply of final products increased in 1993 compared with 1992; in 1993 imports fell after anti-dumping cases were won by local producers, and more specifically imports from Brazil fell strongly; (b), labour was further reduced, possibly below 20,000 workers.

Considering the 1975-1993 evolution as a whole, the outstanding changes turn out to be the fall in employment and the increases in average productivity, corresponding to closure of plants and production rationalization, modernization of plants and a very large reduction in employment.

iii.Foreign trade

Regarding trade, as available institutional statistics lump together imports of raw materials, intermediate products and final products, the sector as a whole appears more or less always in deficit, but in response to changes in local and international markets, the sign of the trade balance may change, e.g., in 1989 imports of 276 M$ (million dollars) were lower than exports of 971 M$, and the trade balance was positive, 695M$; while in 1992 the figures were, imports 684M$, exports 456M$, and trade balance negative, 228M$.[175]

This example is enough to show that trade responds with wide

[175]MIA Bulletin, op. cit..

variations to short-term changes in certain variables, as well as to more fundamental variables. The sign of the trade balance, including all groups of materials and products is however much more often negative than positive.

Production for the local market tends to stay around 60% of total production; exports were 36% of production in 1978, just 15.48% in 1980 and above 50% in 1989-1990.[176] Current distribution of exports by destination is 30% to Latin America (but no sales made to Brazil), 40% to Asia and the rest distributed between Europe, the U.S. and partly Africa.[177] The really competitive, internationally oriented production is the production of seamless tubes, although in fact exports started time ago in an unplanned fashion. After that start, as the plant was modernized and integrated (the DR facility) exports became more and more the central aspect of that operation, increasing threefold in 1978 and again twofold in 1980.[178] Today that plant exports more than 80% of its production and accounts for 15% of world trade in seamless tubes for oil exploration and drilling.

iv.Technological profile

Production of steel in Argentina includes all stages from reduction to final products shipped to the metalworking industries, oil drilling activities, etc.. We have already described the main facilities at various steelworks; it is worth adding that about 75%

---

[176]Soifer, op. cit. and Bisang, op. cit..

[177]MIA, op. cit..

[178]Soifer, op. cit..

of production is done by continuous casting, and that firms have been active in technological updating and in the introduction of advanced production management methods. Specialization and service have also been given close attention, e.g. the special steels plants produce according to specifications and agreements with the automobile makers, and the flat products plant has incorporated pre-painted and covered products. At least two of the plants have already obtained quality system certifications following ISO 9000 rules. As a tentative evaluation (based on some existing studies, firms' announcements, specialized press articles and interviews, etc.), the sector seems well up to date in product technologies and in processes, having had access to technical information and training at Japanese and Brazilian plants; on the other hand, actual productivity, however improved, is yet behind the productivity of the most efficient producers of the world.

v.The domestic market

Argentine steel production capacity today is approximately matched to local demand; the seamless tubes plant is the only plant with a large export capacity. Argentine's capacity is well below 1% of world's capacity and it is perhaps 10% of Brazilian capacity. It seems important to remember that Argentina is a member of Mercosur together with Brazil, a strong exporter, posessing more numerous and larger firms and plants than Argentina. The important question seems to be whether the Argentine plants are appropriate to compete at home and perhaps abroad with their Brazilian counterparts, not whether there is competition in the Argentine

market (which would be impossible if plants want to be of an economic scale).

The domestic competitive situation may be seen as follows: Argentina has just one producer in flat products, and one producer in seamless tubes, and some more diversity in "non-flat" and special steel products. Only imports may create competition in flat products (as it happened in 1992) and in seamless tubes (where it is most unlikely to happen, as local oil companies are not buying and the local production is internationally competitive). Competition in rolling-mill products depends on specialization and efficiency of the remaining independent plants in view of the increased role of Acindar; no detailed data are available to discuss the level of segmentation, differentiation and competition in that area. Regarding the past record and recent changes in international competition, the main point seems to be that under regulated conditions, imports were yet allowed at all levels (raw materials to final products) according to the needs of the internal market and local supply capacity; while after deregulation and privatization, there was import penetration of 30% in flat products and 10% in "non-flat" products in 1992. This situation was partially reverted in 1993 through changes in marketing and supply strategies of local firms and through Government anti-dumping intervention.

b.Constraints and prospects

According to industry's sources, after deregulation and partial privatization in oil and gas, and in electric power, prices

of steel industry inputs have remained high. Continuing recession in Europe and Japan, even if accompanied by recovery in the U.S., has kept prices depressed and/or extremely sensitive to purchases or withdrawals from the market by large new buyers like China.[179] Overall trade environment is characterized by aggresive selling and pricing or plain dumping. Main local firms have accumulated very large losses in 1990-1992; in doubt about 1993.[180] The Argentine State has withdrawn from production and does not guarantee convenient gas or energy prices to firms. On the other hand, it has eventually reacted against some imports.

The strategies of the firms are described briefly in what follows. Aceros Zapla, the smallest and physically remotest firm, has invested 30 M$ in revamping operations after privatization. The firm aims at reaching a 50% share of the national special steels market, while they have already exported large foundry products (30 tons weight) to Chile.[181] Acindar has announced a 100 M$ investment plan strictly in steelmaking, to be supported by the IFC, aiming at introducing more advanced products and at improving costs, quality and service, and including increasing quality and productivity in a welded tubes plant, increasing control and precision in the fabricating processes of its rolling mills, and

---

[179]Business Week, January 10, 1994.

[180]Clarin April 18 1993 and Ambito Financiero July 2 1993, based on firms' financial reports.

[181]Data on Zapla steelworks are from firm's information releases and El Economista, November 5, 1993 and Ambito Financiero, December 12, 1993.

partially shifting production to specialty steels in its main commodity plant.[182]

Regarding the flat products markets, the Techint group controls SIDERAR, the firm emerging from consolidation after privatization, now combining reduction, steelmaking and hot and cold rolling of flat products (at the former Somisa state plant) and cold rolling capacity at its formerly own Propulsora plant. The firm's investments in 1993 were 100M$ and according to the firm's information releases current investment programmes amount to 365M$. The investment programme is aimed at modernization and installation of new equipment in four locations of SIDERAR's activities, the two main steelmaking and rolling mills and two other finishing and service plants.[183] The same group controlling SIDERAR owns as well SIDERCA, the seamless tubes producer, which exports regularly 80% of its production. (Techint also owns now 23.6% of TAMSA, a Mexican similar plant, and is in charge of managing its operation). As of SIDERCA, low international prices due to low oil prices have been a factor of recent reported losses and it is working on further technical and organizational

---

[182]Information on Acindar was obtained from El Economista, April 16 and 23, July 8 and October 1st., 1993, Clarin January 8, 1993 and Mercado, September 1993, as well as from the firm's own advertisements announcing its quality system ISO certification.

[183]Information on the privatization of Somisa, on Aceros Parana and on Siderar, gathered from Ambito Financiero, June 16 and December 1st, 1993, El Economista May 21 and July 23, 1993, Panorama July 1993, and Clarin, January 16, 1994).

improvements.[184]

G.MACHINERY, TRANSPORT EQUIPMENT

FARM MACHINERY SECTOR

a.Past trends

i.Introduction

The farm machinery sector is a capital goods sectors directly linked to the productive activities related to Argentina's natural comparative advantages. Demand for agricultural machinery is a derived demand and therefore influenced by all quantitative and qualitative shifts in the main activity's performance and orientation.

Demand for agricultural equipment has origin both in the "pampas" productive areas, where cattle raising and cultivation of cereals and oilseeds alternate according to prices and profitability (as well as to technical rotation of agriculture and cattle in successive years on the same land), and in the peripheral or regional areas, where more diversified agricultural production takes place. Purchasers of equipment are farm owners themselves, or independent contractors of land tilling or harvesting services, or, more recently, ad-hoc groupings or associations of land owners who have started machinery-sharing practices. The current stock of agricultural equipment in use is said to be too old and already

---

[184]Information on Siderca and on the Tamsa operation, from the firm's annual report, from quarterly financial summaries published in the financial press, and from El Economista, June 6, July 7 and November 19, 1993.

used far beyond its theoretical lifespan.[185]

One source of qualitative changes in demand is the onset of major technical changes in agriculture, such as the double cultivation of wheat and soybeans, stronger land conservation trends, 'direct seeding' or 'no-tilling-no plowing' (no ground breaking) agriculture, the more systematic utilization of pastures with collection and storage of grass or fodder for feeding the cattle, etc.; each one of these trends increases or creates demand for certain types of equipment. Also, there is in fact a wider, conceptual change taking place now in Argentine agriculture in the sense of a more planned management of land resources and agricultural inputs, such as the supply of different feeds to cattle or dairy animals according to technical and economic conditions, time of the year, etc.; farmers who change their decision-making habits and manage more rationally their production systems tend to demand new and better, more specialized equipment, from the domestic industry or from importers of foreign equipment.

Some demand shifts are relatively easily taken care of by industry, because they only involve shifts of machinery production between well known, classical implements, requiring only the

---

[185]References to economic behaviour of the agricultural producers and to its consequences for the activity in the capital goods sector, as well as responses from agricultural equipment manufacturers to demand variations and to general economic context variations, are presented and discussed at length in various agricultural and agrobusiness monthly publications; for a yearly review of the condition and performance of machinery industries, conducted through individual interviews to industrial producers of agricultural equipment, see the "Panorama Industrial" section, La Chacra magazine, July 1992 and July 1993.

typical workshop flexibility of the metalworking industry, without almost any product engineering efforts. Other changes imply more fundamental innovation, whether by copy of more advanced or qualitatively different foreign equipment, or in some cases through research and development contracts with specialized units of the National Institute for Agricultural Technology.

As a general background for the analysis of this capital goods sector it is therefore useful to remember that demand for its products can be unstable (long cycles variations, shorter term variations, marked seasonality along the year, and shifts in the types of products); qualitatively demanding, (as farmers want the latest improvements even when their purchases are scarce and companies lack profits to finance product development); and also sensitive to the availability and cost of finance for the farmers.[186] It is also true that at any time, even at times of crisis or of forced adaptation to new contexts, some farmers are more skilled than others to adapt to changes in the conditions of their own business, and quite often as soon as they can afford it they replace old equipment. It is also true that shifts in demand and profitability from one agricultural product to another (different crops, dairy, beef) create bursts of new demand that makes some capital goods firms suddenly prosperous. The current

---

[186]For a discussion of the influence of agricultural credit (non-indexed loans) under inflation, as a factor in strong agricultural equipment demand in Argentina until 1977, see Huici, N., "La industria de Maquinaria Agricola en Argentina" in "La Agricultura Pampeana. Transformaciones Productivas y Sociales, Buenos Aires, FCE-IICA-CISEA, 1988.

situation in the farm equipment sector has a mixture of many of these elements, but with an added twist: as trade has been liberalized, some of the types of machines required as a consequence of new, recent trends in agriculture, are purchased from abroad, what creates additional problems for the local machinery producers.

ii.Sector trends.

Current estimated value of production of farm machinery is approximately 400 million dollars (M$) not including tractors. The products of this industry are harvesters and several families of agricultural implements, such as implements for plowing and tilling, implements for planting, seeding and fertilizing, harrows, rollers, pulverizers, cultivators, weeders, haying equipment, sprayers and dusters, equipment for moving, storing and treating grain, etc.. Tractors in Argentina are produced by a few firms, the main ones foreign-owned, and are generally not included in more specific farm machinery analyses.[187] Tractors are the technologically more complex goods, followed by harvesters; among those goods broadly known as implements there are as well machines and equipment of certain complexity, as different types of sowing/seeding machines, motor-driven spraying equipment, etc..

The machinery sector (in the sense defined) had 15,800 workers

---

[187]We may indicate in passing that production of tractors is far lower now than what it was in the 1970s and even in some years of the 1980s; the negative trends in production of farm machinery that will be discussed below are largely paralleled by trends in the tractors sector.

in 1984.[188] In 1992 the manufacturers association estimated that the level of employment was about 12,000 workers and more recent reports claim that employment has continued falling rapidly.[189] There are no production data covering the whole of the 1980s; in the case of harvesters and other equipment, the number of units sold may have fallen in time because of a shift to larger, more productive units, but nevertheless it is clear that production levels were extremely unstable, as production in 1983 was 1,115 units and in 1984, 1,222 units, falling to 260 units in 1987, climbing to 1,120 units in 1990 and falling again to 760 units in 1991.[190] Manufacturers association estimates for capacity utilization are 35% to 40% in the 1980s and about 55%-60% in recent years due to higher grain prices raising the farmers' income and availability of funds (not to improved credit facilities).[191] Latest estimates from the same source for different types of equipment suggest that in the period 1991 to 1993 the trend has been positive for production of some types of equipment such as cultivators and sprayers and dusters and negative for harvesters and seeding/sowing machines.

Up to date data are thus in fact quite scarce but enough to

---

[188]Delgobbo, A., "Las empresas de implementos agricolas del sur de Cordoba y Santa Fe frente al proceso de apertura e integracion subregional", Documento de Trabajo CFI-CEPAL No. 33, Buenos Aires, 1993.

[189]See Bulletins No. 6 (May 1992) and No. 16 (May 1993) of MIA, Movimiento Industrial Argentino.

[190]Data reported in El Economista economic weekly.

[191]MIA Bulletin , No.6, May 1992.

give opportunity for some comparisons with earlier periods of sector development. For example, the highest level recorded of annual sales of domestically manufactured harvesters was 3,205 units in 1961 and total sales levels (including a small number of imported units) was well over 2,000 units for all years from 1960 to 1965. From 1966 to 1975 local production and sales were between 1,000 units on a very bad year and 1,890 units in the best year, going above 2,000 units again for the years 1976 to 1978.[192] [193]

In other words, there are very large falls in average production from the 1960s and 1970s to the 1980s and then again from the 1980s to the 1990s, while there are also subsidiary variations shown by the more recent data. The point is that during the early times of the industry demand from the farming sector was sustained not just by presumably better performance in the sector but by a generous credit system that disappeared after the 1977 financial reforms. So, that what we see now as the machinery sector is already a reduced version of what it then was. In that context, events such as further losses of markets to recent imports contribute indeed to further deterioration but the problem of the Argentine farm machinery industry seems to involve older and broader questions. The capital goods sector of some proven productive capability and with the advantage of being in very close touch with the requirements of the efficient local agricultural

---

[192]Data for tractor sales indicate that sales reached the level of 20,000 units as far back as 1974 and were over 22,000 in 1977.

[193]See Huici op. cit..

sector, has problems related both to the lack of investment in agriculture and its own increasing lack of competitiveness. Fxports by the Argentine farm machinery sector are currently estimated at 4% to 5% of sales but have been much higher in the 1970s ; average yearly amount exported from 1988 to 1990 was 11 (M$).[194]

iii.The industry

Production of agricultural machinery in Argentina comprises all basic and metalworking processes, i.e. this is not an assembly but an integrated industry, although some firms have started recently to incorporate some foreign components. Product technology is an area of constant innovation; as explained before, agricultural producers buy sparsely, but when they do they insist of updatedness of equipment (this is to some extent the effect of exposure to imports since the 1970s, and again the exposure to imports and more frequent travel abroad and diffusion of technical information in recent years). Process and organization technologies are not equally up to date; a recent study of a sample of 26 implements producers indicates that even when productive equipment in the workshops was partially renewed, this did not entail significant changes in production organization.[195]

The farm machinery industry is not geographically centralized, many plants are located in medium-sized cities in the main agricultural provinces. Ownership is largely by foreign

---

[194]Delgobbo, op. cit..

[195]Delgobbo, op. cit..

multinationals in the tractor sector while the main remaining producer of harvesters is since 1992 also owned by a foreign tractors-producing firm. Most other equipment and implement producers are national, but a trend has lately appeared involving Argentine firms making agreements with or obtaining technology from Brazilian producers. Brazilian firms are suppliers of imports of sowing machines (sowing/seeding machines and harvesters are the main machinery imported besides tractors) and are much larger than Argentine counterparts. Argentine firms seem to be in a stronger position than Brazilian ones only in equipment related to cattle raising, such as haymaking or grass and forage packing equipment, but even in these cases they have the need of a Brazilian partner to sell in Brazil.[196]

Current competitive imports are reported to be making important inroads in harvesters and sowing/seeding equipment (as well as in tractors); also, imports are thought not to have had even more growth just due to the weakness of internal demand. Unfortunately no concrete data have been released and comments about imports mostly come from local producers and association representatives interviewed by agricultural magazines or specialized sections of newspapers. The main sources of imports of sowing machines is Brazil and imports of larger harvesting machines are brought in from the U.S. and Brazil by multinational

---

[196]See "Brasil en Pergamino", La Chacra, May 1992, and Delgobbo op. cit..

corporations.[197]

b.Constraints and prospects

As suggested by the Introduction, analysis of the change of regime and its consequences should be placed in context by referring to the long-term evolution of the sector. The decline in this sector started in the 1970s as credit for investment in agricultural machinery practically disappeared (and debt was indexed) and it also suffered the consequences of all structural or cyclical changes in profitability leading to decline of investment by the agricultural sector, whether related to changes in international trade and prices, to government policies, or to technological change.

Some of the possible effects of this long term trend may be obsolescence of its technical base, lack of consolidation of its product engineering capability and possibly a strong lag in process technology and in organization of production. It would be interesting to know if other competitive agricultural producers, like Australia and New Zealand, rely exclusively on foreign equipment and/or foreign designs and technology for domestically produced equipment, or if they have established strong linkages between their agriculture and healthy agricultural capital goods industries.

In recent years, imports of equipment were made cheaper by tariff reductions and exchange rate overvaluation, and those

---

[197]Delgobbo, op. cit..

farmers who make some investment in spite of poor profitability are attracted to buy competitive foreign equipment. Furthermore, Argentine machine producers added to their problems by agreeing to include their products in the "Common List" of imports negotiated with Brazil at the beginning of the then bilateral market integration process, without expecting their competitive position would eventually deteriorate so intensely.[198] They also complain that the government, aiming at keeping import taxes for capital goods at zero level, has promised local producers a special refund of 15% on capital goods sold locally, but that the government agencies are not making such payments.[199] The industry representatives have reported in May 1993 that many firms were closing, or enforcing suspensions of workers on the basis of low demand; at this stage they claim employment fell in a matter of months from 12,000 to between 9,000 and 10,000; when production is kept at a steady level, stocks increase due to the lack of sales.[200]

Regarding the response of the farm equipment sector to the current context, no comprehensive survey or study is available; in any case, no structured reconversion schemes or investment programmes at the sector level seem to have been announced. This does not rule out individual actions by some firms, perhaps helped

---

[198]Stated by the President of the agricultural equipment manufacturers association, La Nacion, Aug 8, 1992.

[199]"Panorama Industrial", op. cit..

[200]MIA Bulletin No. 16, May 1993.

by specific increases in the demand of the particular products or on the basis of a long-term firm's policy. Such firms may introduce new products, reorganize production, etc.. In fact, some sources maintain that a restructuring process is going on, in which many small firms close, some other firms seek associations with Brazilian firms, and some large firms are modifying their older and heavy structures through complex and difficult transformation processes,[201] but these are of course broad statements that may be inaccurate or biased even if they come from knowledgeable observers.

AUTOMOBILE INDUSTRY

a.Past trends

i.The industry

In Argentina there have been examples of automobile assembly and manufacture before 1959, but the Argentine automobile industry as an aggregate of vehicle-making and parts-making firms, was in effect established under a promotion regime dating from that year; current production includes automobiles, trucks, pickups and buses (complete vehicles and their parts).[202]

---

[201]Comment published in the Dinamica Rural magazine in 1992.

[202]For the history and comprehensive analyses of the sector, see Sourrouille,J.V., Transnacionales en America Latina. El complejo automotor en Argentina, Editorial Nueva Imagen, Mexico, 1980, and Soifer, R.J.,"La industria automotriz y de autopartes" in "Apertura, productividad y desarrollo tecnologico en las industrias petroquimica, siderurgica, automotriz y de maquinas herramienta en la Argentina", Documento de Trabajo No. 116, Banco Interamericano de Desarrollo, March 1992.

Production was in 1980 281,793 units; its general trend for the decade was negative and in 1990 it was just below 100,000 units. Due to the combination of economic recovery and a special promotion regime that largely exempted the sector from trade liberalization, production recovered in 1992 to 262,000 units and went on to reach over 340,000 units in 1993, the highest level of production ever in the sector. Production in 1991 had been close to 140,000 units (114,000 cars, close to 19,000 pick-ups or more generally, "utility vehicles", and close to 6,000 trucks and buses). In 1992 production of cars was 220,000 and for "utility vehicles" over 31,000; while in 1993 the figures were 287,000 and 44,000. Production of trucks and buses was over 10,000 in 1992 and 11,000 in 1993. Most units of all types produced were sold in the internal market but close to 30,000 units were exported. Individual firms' production levels were 150,000 units, 94,000 units and 88,000 units. The car model with the largest sales, sold 42,000 units, the longest annual run ever for the Argentine industry.[203]

The automobile parts production is also reported to have increased significantly since April 1991, the starting date for the application of current economic policies, to January 1994;[204] there are however complaints from the part-makers about not obtaining the full benefits of the recovery, at least in comparison

---

[203]Data are from January 1994 releases from the manufacturers's association, as reported in the press on January 15 1994 and January 28, 1994.

[204]La Nacion January 21, 1994 and Ambito Financiero, January 25, 1994.

with the benefits obtained by the automobile manufacturers. Current regulations admit a higher imported content in cars than in the past, and final-product makers find it is to their advantage to reduce the local content of the vehicles they manufacture. Lower local content put more market power in the hands of the final product makers and (possibly), while some parts makers opted for reducing their prices and profits, other, higher-cost firms, just gave up the original parts market.[205]

Employment in the final product plants (automobile assemblers, who also produce part of their components in-house) came down from near 39,000 to less than 18,000 from 1980 to 1990; currently employment is reported to have increased again to 25,000. Employment at part-making companies was 37,000 in 1980 and approximately 23,000 in 1990.[206] Industrial Census data show employment at vehicle-making firms falling from 37,000 to 22,000 from 1973 to 1984, and employment in component-making plants staying relatively constant at the level of around 48,000 in the same period, and estimating it then fell to reach a level of 35,800 in 1989.[207] According to this second set of data, companies making final products either closed, or reduced employment sharply

---

[205]More detailed discussion of the situation and performance of parts-makers is presented later on.

[206]Data from Annual Reports of ADEFA, the association of automobile manufacturers, and from ADEFA, "Situacion y Perspectivas de la Industria Automotriz, Buenos Aires, 1991.

[207]See Kosacoff,B., Todesca,J. and Vispo,A., "La transformacion de la Industria Automotriz Argentina. Su Integracion con Brasil", CEPAL, Buenos Aires, June 1991.

during the critical period of the end of the 1970s-beginning of the 1980s, while the-parts making companies made their "adjustment" later, between 1984 and 1989.

ii.Foreign trade

The Argentine automobile industry has been mostly, almost exclusively, domestic-market oriented. The largest number of product units exported in any year before the current arrangements for regional trade were established, was 15,443 in 1974. Final production in 1980 as well as in 1989 was 98% oriented to the domestic market; estimates for 1990 suggest 5% was sold abroad, to neighbouring markets. In 1993, the record production year, some 30,000 vehicles were exported, mostly to Brazil, to comply with "compensated" trade regulations, this represented far less than the quantity of units imported.

According to reports and releases from the vehicle manufacturers association, in terms of value, total exports of the automobile industry in 1980 were 108 M$, of which 21 M$ were for finished vehicles and 87 M$ for parts and for knocked-down units. In 1990 exports were 166M$ of which 25M$ were for finished cars and KD kits and 141 M$ for parts and assemblies. Total exports in the years 1991 to 1993 were respectively 243M$, 450M$ and between 800M$ and 900M$.[208]

The highest number of units imported under current regulations

---

[208]Estimates for 1991-1993 exports and export compensation deficits, from press interview, Secretary of Industry, January 23, 1994, and interview to the manufacturers association president, Ambito Financiero, December 27, 1993.

was 100,000 units in 1992; it was 70,000 units in 1993. Imports were made in 1992 by car producers themselves, who imported 68,000 units at a preferential tariff rate by importers (traders), who imported 30,000 units at the highest level of taxes, and by private (individual) importers who imported 18,000 cars at an intermediate rate. Imported cars were thus 38% of total sales, as exports were very low. Imports in 1993 were 19% of local sales of 380,000 cars (340,000 were produced, 70,000 were imported and 30,000 were exported). Car assemblers practically did not import finished units in 1993, and now criticize strongly the allowance for individuals, which is based on importing the same brands and models that the final producers make in Argentina or import to Argentina.[209]

iii.Industrial organization.

The Argentine market today accomodates three main automobile makers plus three main truck makers and some producers of buses. When the first promotional measures were introduced in 1959, 23 assembly and production companies applied and not less than 18 or 19 started production.[210] When Argentina started its 1976-1983 liberalization experience, only seven of those companies existed, and several more closed or merged during that period or shortly afterwards. As a consequence of several exits, plus the arrival of one multinational firm that was not present at the beginning, and

---

[209]Estimates of numbers of units imported in 1992 and 1993 and their breakdowns, from Negocios, September 1993 and from roundtable on the automobile industry, as published in Pagina 12 Economic Supplement, August 22, 1993.

[210]Sourrouille, op. cit..

the development of nationally owned groups that made partnerships with foreign producers, automobile makers in Argentina at the end of the 1980s were three firms, involving five international makes of cars: Renault, making its own cars and other vehicles; Sevel, Argentine group, associated with Fiat and simultaneously licensee of Peugeot; and Autolatina, a partnership created in Brazil by Volkswagen and Ford, with a branch in Argentina, making some models of those same cars. Truck and bus making is carried out by Scania, by a local group making Fiat-Iveco vehicles, by Mercedes-Benz, and by several other smaller firms, mostly locally owned firms, specializing in building buses, or some small trucks.[211]

The latest development regarding main group ownership was the purchase of a controlling interest in the Argentine Renault, now CIADEA, by a private Argentine-Brazilian group of component manufacturers and a stockbroker's house; managerial control of the Argentine former Renault industrial operation seems to be held by the new society's Argentine partners.[212]

The large groups own as well important component and engine making plants and have made in recent years substantial investments in them. Sevel is a partner with Fiat in an engine plant with 55% control by Fiat; the Autolatina group has a state-of-the-art plant to manufacture transmission components and assemblies; Mercedes-Benz and Scania have plants for the production of gear-boxes and other parts; all such Argentine affiliate plants

---

[211]Soifer, op. cit..

[212]Prensa Economica, January 1994.

have an strategic meaning in the economic logic of these groups as they operate within the Argentina-Brazil agreements and the Mercosur agreements.

The development of this sector in Argentina took place on the basis of strong protection and with the benefits of various promotion schemes and export incentives in the general context of industrial import substitution concepts. Given the relatively small size of the Argentine market, and even if partial rationalization took place over the years (with periods of higher intensity under some forms of trade liberalization in the late 1970s), the question of appropriate scale is still only partially solved at best. The current arrangements however are a great improvement on the situation of the late 1980s, when total production fell to one third of the highest levels achieved before, while the number of models was not similarly reduced. In 1973 the maximum and average runs for production of a given model were 20,000 and 5,300; in 1989-1990, after many firms had disappeared and the market was less than half the market of the early 1970s, the maximum and average production runs were 17,000 and 3,500, respectively.[213]

b.Constraints and propects

i.The 1980's

In our analysis we shall concentrate in the new process of regional integration and trade liberalization that started in 1987 in the private sector (merger of affiliates of transnational corporations in Argentina and Brazil in 1987) and from 1988 at the

[213]Kosacoff, op. cit..

level of country to country and subregional agreements.

In 1987 the Ford and Volkswagen affiliates of Argentina and Brazil were merged in a new firm named Autolatina with management in Brazil. Brazil and Argentina had started as well a broad bilateral process of progressive economic integration through a basic Economic Complementation Agreement) (ACE No. 14) and specialized complementary agreements called "protocolos"; the governments of the two nations established in April 1988 the "Protocolo 21" to the ACE 14 agreement to define objectives for the motor vehicle industry and rules for the exchange of its products in the bilateral area (imports from any origin were at the time practically prohibited in both countries). The Annexes to the Protocolo 21 established reciprocal export allowances for finished vehicles for 1989 and 1990 as well as a Common List of components that could be traded, but in fact none of these measures was applied until the two countries, joined by Uruguay and Paraguay, signed the Mercosur treaty in 1991, committing themselves to the start of a common market on January 1st 1995.[214]

About the performance in the second half of the 1980's, the Protocolo 21 mentioned above was the governments' first large contribution to making the change in outlook based on regional exchanges possible. Firms with operations in both countries were the ones to adapt faster to the new trend, with investments in Argentina of 200M$ in a state-of-the-art transmission components plant in one case, and with investments in transmissions and car

[214]Soifer, op. cit..

engines production for at least 90M$ in another.[215]

Trade data for components and engines for the years after 1985 show in the case of Argentina a trend towards quantitatively higher exports and concentration of exports in those components, a trend that is yet more visible in the case of exports to Brazil.[216] In other terms, a trend towards Argentine specialization in large components and mechanical subassemblies apt to be produced with local qualified manpower in new economic scale plants (sometimes however in plants transplanted from Brazil) seemed to be taking hold.

One final comment on these arrangements and developments of the late 1980s, is that although they have as a characteristic the specialization of Argentina in the production of certain main vehicle component parts and subassemblies, there is little or nothing in them to improve the position of independent part makers; it is largely full affiliates of the vehicle-making companies or such companies themselves that produce and exchange the complex, advanced components and engines involved.

ii.The 1990's

The main difference between the regime of Decree 2677 and other measures is that in Decree 2677 the government made explicit demands that firms should present to the government "reconversion"

---

[215]El Economista June 23 and 29, 1993, La Nacion, November 11, 1993, and Soifer op. cit..

[216]See Kosacoff, op. cit., specially section II and Tables 3, 4 and 15.

plans for restructuring production, product mix and model lines and even to negotiate with their headquarters or partners and licensors abroad, the simultaneous launching of new world models in Argentina and the country of origin of the model. In exchange for this, firms were to receive important advantages in trade, implying in effect guarantees of profitability through dominance of the import business.

The Decree 2677 regulations are in general valid until 1999, as GATT rules will be strictly followed in the year 2000 and after. But in many cases the new rules are explicitly specified only for the 1992-1994 period, as from January 1, 1995 the Mercosur rules, as agreed in the meantime by the member Countries, should apply. Besides establishing a complex trade system with differential rights and advantages for different agents (most prominent among them the firms already included in the roster of vehicle-makers), the new regulations determine the degree of national integration through an increase in the allowed value of imported components to 40% (as an average in the first years, and later model by model); they establish that each automobile maker must balance its foreign trade in value terms, through different forms of compensation of value of imports with value of exports and with part of the amounts invested; and last but not least, introduces the concept of "reconversion" as firms taking advantage of the new regulations must put forward credible investment and restructuring plans for government approval and monitoring.

The trade regime in effect defines four categories of

importers: the incumbent local producing firms, other foreign producers not having industrial activity in Argentina, the locally operating automobile traders and importers, and private individuals. Both locally established firms and foreign located automobile producers can import parts and vehicles paying low duties, i.e. paying a 2% rate plus extra taxes as the statistics tax in the case of locally established producers, and 18% plus any extra taxes for the international producers not producing in Argentina; but in order to do so they must compensate imports with exports. Locally established producers that make reconversons investments may as well add to the exports amount in the compensation account, 30% of the amounts invested in their plants. Therefore, local producers may add together as compensation exports the value of their own finished vehicle exports (in which case every exported dollar will be counted as 1.20 dollars); (plus) the value of vehicle components they themselves manufacture, and of dies for production, that they may export; (plus) the value of exports of components made by independent producers arranged for by the final product makers; plus 30% of the amounts invested in improvement or expansion programmes. Final product makers must give 25% participation to products made by independent component makers in their exports. Imports from Brazil made under Protocolo 21 may be added to imports made under the new regime if the total firm's import-export trade is balanced.

To be entitled to enjoy the benefits of the new regime, the Argentine final product (vehicle) makers must prepare and obtain

approval of restructuring plans. Such "reconversion" plans should specify investments to be made by the firm, and should commit the firm to achieving ostensible reductions in variety of models, and to start launching new world models in Argentina at the same time their international owners or licensors do elsewhere in the world.

In order to bring into the country vehicles of their production paying the special tax (higher than the tax on imports of manufacturers but lower than for yet other importers), foreign producers not producing in Argentina may compensate by sourcing components for international use or trade from local producers of components; after 1994 the tax they will pay will be the agreed Mercosur tax.

From 1992 to 1994 independent traders, not engaged locally in production, may apply for import permits within quotas of 8%, 9% and 10% of each year's local production, paying a basic 22% import tax plus the statistics, etc., tax, plus a premium offered by them in the bidding process (prospective importers are awarded import rights if the premium they offer to pay is among the highest offered). Finally, individuals may import by themselves vehicles either produced in the country or imported by the locally active producers, paying just 22% tax plus any general taxes (e.g. the statistics tax that all goods pay).

An agreement reached by the representatives of the government, the industry and the workers in the first half of 1993 established the remaining quotas for imports from Brazil, and a limited wage increases schedule, as well as a continuation of the 1991 agreement

to keep prices constant in the local market, while at the same time the prices are higher than international levels, especially compared with Japanese cars.

iii.The independent component makers in the new strategy

As it was explained before, the vehicle makers of Argentina came up in the 1980s with an strategy of adding large, specialized capacity to their productive organizations. So that they could produce chosen complex components and subassemblies which were meant to be their means of exchange in intrafirm trade with other affiliate or related companies. This did not provide any relief to independent component makers, who faced during the 1980s a falling and irregular demand. Decree 2677/91 determined that after January 1st 1992, the "terminales" should include at least 25% parts bought from independent producers in their "compensated exchange" trade flow.

The result of this evolution for independent component makers is that they have tended to become more heterogeneous as a producing group, as many have opted for serving the less demanding domestic replacement market, although there are as well a few success stories in the development of exports to the international "aftermarket", incorporating equipment and technology to that effect.[217]

A very high local integration of components has been the

---

[217]Kosacoff, op. cit; Moori Koenig,V. and Yoguel, G., "Competitividad de las PYMES autopartistas en el nuevo escenario de apertura e integracion subregional", Documento de Trabajo CFI-CEPAL no. 30, Buenos Aires, September 1992.

result of a shift in the automobile regime regulations in 1971, not necessarily well received by the "terminales".[218] They have many times suggested that the high cost problems of vehicles in Argentina were due to inefficiencies at the part-making segment of the industry, and have obtained a gradual reduction of the compulsory local parts integration levels, either directly or through the "compensated exchange" rules. Another point made about independent component producers, is that during the current recovery the parts-making segment of the industry has been a bottleneck in supplies that has delayed delivery of finished vehicles. The decisions of the "terminales" to get the best from this conflictive relation have included concentrating the use of imported parts in newer models, leaving to local makers the supply of parts for highly integrated older models to keep the overall average local integration at the prescribed levels.

The independent parts-making sector is yet a conglomerate of foreign owned or foreign licensed firms, and nationally owned firms, some of them supplying in increasing proportions the spare parts market (some of them, selling as well to the international "aftermarket"); a recent important trend is as well that Brazilian component-makers, generally larger and sometimes significantly more advanced in technology and in organizational improvements than their Argentine counterparts, have acquired control of key independent Argentine firms.

iv.The prospects of the programme for reconversion of 1991

---

[218]Sourrouille op. cit..

One interesting aspect of the operation of the regime is that it is so far an arrangement between the government of Argentina and firms already making cars and heavier vehicles of European and U.S. origin in Argentina; possible industrial participation of Japanese firms is under study by some of them but will apparently be restricted to the range of special vehicles or trucks.[219] In fact the important question is not just if the Argentine market and feasible Argentine participation in Mercosur and in international markets can sustain current and newly entering firms, but whether it can sustain economically even all firms already operating in it. On the other hand, the combination of specialization in main components making, lower general local content and more participation of assembly operations, may help achieving economies in more flexible plants or through other means.

According to industry sources, effective investment in 1992 was 140M$ and in 1993, 240M$, a total of 380 M$ in two years.[220] This refers to real (past) investment, not to commitments made to comply with government guidelines. However, one question that always arises in relation to this sector is the breakdown between very specific expenses for production of the new models, such as tooling, dies, special machines or hoisting equipment, and investment for the general improvement of productive capacity; the former one is usually most important in this industry, but it also

---

[219]Ambito financiero, August 20, 1993, Panorama, November 1993, El Economista, December 3, 1993.

[220]Statement by the president of the manufacturers association, Ambito Financiero, December 27, 1993.

implies some of the latter. Expenses for new models are high and to a large extent, they cannot be recovered. Total investment commitment by the firms in the context of decree 2677/91 is 1,600 M$ for the period 1991-1999. Investment already made for 380M$ is almost 25% of the total committed amount. It would be interesting to have an independent assessment whether this amount is good enough for a serious reconversion.

ANNEX

ANNEX TABLE A-1
CURRENT ACCOUNT, TERMS OF TRADE AND TRADE POLICY (1980-92)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
GOODS (1)	-2519	-287	2287	3331	3523	4582	2128	540	3810	5374	8275	3703	-2637
Exports	8021	9143	7624	7836	8107	8396	6852	6360	9134	9573	12354	11978	12235
Imports	10540	9430	5337	4505	4584	3814	4724	5820	5324	4199	4079	8275	14872
REAL SERVICES (1)	-740	-705	43	-400	-205	-231	-573	-285	-255	-265	-321	-902	-1118
FINANCIAL SERV.(1)	-1532	-3700	-4719	-5408	-5712	-5304	-4416	-4485	-5127	-6422	-6122	-5634	-4574
Interest (net)	-948	-2965	-4403	-4983	-5273	-4879	-3934	-3927	-4467	-5758	-5487	-4829	-3739
Others	-584	-735	-316	-425	-439	-425	-482	-558	-660	-664	-635	-805	-835
CURRENT ACCOUNT (1)	-4768	-4714	-2358	-2461	-2391	-953	-2859	-4238	-1572	-1305	1903	-2804	-8361
TRADE SHARES (2)	11.6	14.3	15.6	14.9	12.4	18.0	14.5	15.5	15.7	19.7	15.0	13.8	14.7
GDP GROWTH (3)	103.5	97.5	94.5	98.0	99.8	93.2	100.0	102.6	100.7	94.4	94.5	102.9	111.8
TERMS OF TRADE													
Domestic (4)	94.7	86.5	101.6	104.9	99.5	74.6	100.0	96.9	89.9	92.6	81.9	74.4	83.7
Foreign (5)	137.6	147.3	123.7	123.8	135.8	116.0	100.0	99.9	110.5	110.3	104.5	104.5	105.4
EXCHANGE RATES													
Real (6)	39.5	47.9	82.4	97.4	90.8	105.7	100.0	103.0	98.3	133.1	90.1	67.1	62.6
Real (7)	46.2	51.8	83.9	93.6	80.7	89.4	100.0	110.6	109.5	146.6	107.1	80.0	76.9
TRADE POLICY													
Relative (8)	68.8	58.7	82.2	84.7	73.3	64.4	100.0	97.0	81.4	84.0	78.4	71.2	79.4

SOURCE: Own estimates based on data from Central Bank and ECLA. In Diaz Alejandro, C.F. (1981) "Tipo de cambio y terminos de intercambio en la Republica Argentina 1913-1976, CEMA a similar comparison was intended here.Based on official statistics of the Central Bank, the Statistical Institute and ECLA. (1) Millions of current dollars; (2) Share of exports plus imports to GDP; (3) Index 1986=100; (4) WPI for Agriculture divided by WPI for Industry, with a 1986 base ; (5) Index of relative (exports/ imports) unit prices of trade; (6) (RER) Average nominal exchange rates times US CPI divided by the average of Argentine's WPI and CPI (Central Bank); (7) (RER) based on a basket of currencies (Central Bank); (8) relative implicit protection index [(4)/(5)].

ANNEX TABLE A-2
COMPOSITION OF GLOBAL SUPPLY AND DEMAND AT 1986 MARKET PRICES
(As percentage of GDP)

DESCRIPTION	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
GLOBAL SUPPLY	111.9	111.6	106.9	106.2	106.3	105.9	106.3	107.0	106.3	105.5	105.5	108.4	112.6
GDP AT MARKET PRICES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
IMPORTS	11.9	11.6	6.9	6.2	6.3	5.9	6.3	7.0	6.3	5.5	5.5	8.4	12.6
GLOBAL DEMAND	111.9	111.6	106.9	106.2	106.3	105.9	106.3	107.0	106.3	105.5	105.5	108.4	112.6
CONSUMPTION (1)	78.3	80.2	78.1	78.4	79.9	79.8	80.7	79.7	77.5	79.3	78.9	81.6	83.2
GROSS DOMESTIC INVESTMENT	26.6	23.6	20.4	19.5	18.5	16.3	17.5	19.5	19.5	15.7	14.2	16.3	19.6
EXPORTS	7.0	7.8	8.4	8.3	7.9	9.8	8.2	7.7	9.3	10.5	12.5	10.5	9.7
GDP AT MARKET PRICES (2)	10.3	9.7	9.4	9.8	10.0	9.3	10.0	10.2	10.0	9.4	9.4	10.3	11.2
INDEX 1986=100	103.5	97.5	94.5	98.0	99.8	93.2	100.0	102.6	100.7	94.4	94.5	102.9	111.8

(1) Since 1989 includes changes in inventories.
(2) Millions of Pesos in 1986 prices.

SOURCE: Banco Central de la República Argentina (April 1993),
"Estimaciones anuales de la oferta y demanda globales, periodo 1980-1992".

ANNEX TABLE A-3
COMPOSITION OF GROSS DOMESTIC PRODUCT
(Percentage)

DESCRIPTION	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
GDP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PRODUCTION OF GOODS	46.7	45.2	45.6	46.0	45.3	44.5	45.2	45.4	45.4	43.9	44.8	45.1	44.7
AGRICULTURE	6.9	7.6	8.3	8.1	7.9	8.4	7.8	7.4	8.3	8.0	8.9	8.5	7.8
MINING	2.2	2.3	2.4	2.3	2.3	2.3	2.0	2.1	2.3	2.5	2.7	2.3	2.3
MANUFACTURING	28.0	26.1	26.3	27.2	27.4	26.4	27.4	27.2	26.4	26.1	26.6	27.4	27.0
ELECTRICITY	1.5	1.6	1.7	1.8	1.9	2.0	2.0	2.0	1.9	1.9	2.1	2.0	1.9
CONSTRUCTION	8.1	7.6	7.1	6.7	5.9	5.3	6.0	6.7	6.6	5.3	4.5	5.0	5.6
PRODUCTION OF SERV.	52.8	54.8	55.2	54.4	54.7	55.7	54.8	54.3	54.3	56.0	55.7	54.8	54.4
COMMERCE	17.8	17.1	16.3	16.5	16.9	16.5	16.3	16.0	15.9	15.3	15.5	16.6	16.7
TRANSPORT	4.0	4.0	4.3	4.2	4.4	4.7	4.7	4.7	4.8	5.3	5.0	4.8	5.0
FINANCE	14.2	16.1	16.0	15.3	14.9	15.3	15.2	15.0	14.9	15.3	15.0	15.1	15.7
SERVICES	16.7	17.6	18.6	18.4	18.4	19.1	18.6	18.6	18.7	20.2	20.2	18.3	17.0
PLUS: IMPORT TARIFFS LESS FINANCIAL SERVICES	0.5	0.0	-0.9	-0.5	0.0	-0.1	0.0	0.3	0.3	0.1	-0.5	0.0	1.0

SOURCE: Banco Central de la República Argentina (April 1993),
"Estimaciones anuales de la oferta y demanda globales, periodo 1980-1992".

ANNEX TABLE A-4
ARGENTINA GROWTH OF MANUFACTURING VALUE ADDED AT 1986 PRICES (1980-91), (INDEX 1986=100), ISIC (2 AND 3 DIGITS), FOR SELECTED YEARS

ISIC	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
3	105.6	92.9	90.4	97.1	99.7	89.8	100.0	101.8	96.8	89.7	89.8	100.3
31	89.1	83.7	85.0	89.9	95.1	92.5	100.0	100.2	96.4	94.3	95.2	105.7
311/12	86.1	81.7	86.8	92.1	95.4	92.7	100.0	102.6	103.0	101.5	103.1	113.3
3111	100.3	102.2	94.5	88.9	91.1	93.6	100.0	107.2	103.4	97.3	98.6	100.1
3115	42.5	33.9	48.8	64.2	75.9	85.5	100.0	95.6	111.2	104.2	125.5	137.7
3117	90.7	89.4	90.9	100.5	101.3	101.1	100.0	102.5	105.5	114.8	108.6	111.7
3118	137.9	130.0	136.3	123.3	127.8	104.4	100.0	96.7	100.9	89.9	111.1	114.6
OTHERS	82.0	75.0	84.9	93.2	94.9	87.5	100.0	104.3	98.3	97.3	91.4	111.0
313	97.9	89.3	80.4	83.6	91.8	87.0	100.0	95.2	77.8	70.2	69.9	88.6
314	94.0	87.1	81.6	86.7	97.5	97.2	100.0	94.4	85.2	85.8	84.9	88.4
32	91.6	82.8	82.6	92.9	98.5	89.1	100.0	91.8	92.2	89.7	82.3	94.7
321	90.6	79.3	81.3	90.9	96.7	82.7	100.0	94.1	96.4	91.3	88.7	103.4
3211	74.4	64.7	75.0	88.3	94.0	81.5	100.0	93.8	100.5	94.4	96.0	106.2
OTHERS	120.1	105.9	92.9	95.5	101.5	85.0	100.0	94.6	88.8	85.8	75.5	98.3
322	82.6	75.8	81.3	96.7	105.1	95.9	100.0	93.4	90.1	90.7	75.0	72.5
323	94.8	99.2	87.4	88.5	89.3	104.5	100.0	95.3	95.4	103.3	87.4	102.8
324	117.7	104.7	88.2	96.9	98.3	90.0	100.0	72.2	74.0	66.0	63.7	102.3
33	104.9	86.9	76.1	91.4	91.2	86.8	100.0	97.1	95.2	90.0	76.7	103.9
331	107.5	80.3	79.4	97.4	97.2	93.6	100.0	103.8	104.6	97.7	88.6	98.4
332	101.0	97.0	71.0	82.2	81.9	76.4	100.0	86.9	80.7	78.2	58.4	112.4
34	89.2	79.8	82.6	96.3	96.3	87.8	100.0	103.7	94.0	92.7	89.5	98.3
341	77.1	69.9	76.3	90.0	93.0	86.6	100.0	107.2	99.9	93.6	92.7	113.7
342	98.8	87.6	87.6	101.2	98.9	88.8	100.0	101.0	89.3	92.0	86.9	86.1
35	104.0	97.9	96.5	100.7	98.5	86.1	100.0	100.7	97.7	91.3	102.8	107.3
351	67.3	61.8	83.5	91.5	95.3	83.7	100.0	110.5	112.2	109.5	111.5	110.3
3511	77.4	76.4	96.1	104.4	102.7	94.4	100.0	109.5	112.5	106.5	108.0	103.6
OTHERS	54.3	42.8	67.3	74.8	85.6	69.8	100.0	111.7	111.8	113.3	116.2	119.1
352	121.8	117.7	115.1	110.7	99.6	91.5	100.0	100.3	97.0	69.4	81.1	97.6
353	115.8	111.0	100.2	103.7	100.8	89.5	100.0	96.5	93.4	100.0	113.9	115.8
354	86.6	77.2	81.0	90.9	93.6	94.9	100.0	115.3	116.9	129.1	160.4	125.8
355	101.9	69.4	76.1	98.9	108.1	74.1	100.0	93.7	100.7	79.7	102.6	92.0
356	57.3	57.9	64.9	73.9	80.8	62.3	100.0	112.9	93.1	67.9	80.0	86.7
36	136.5	116.8	109.7	112.9	100.8	81.5	100.0	109.8	96.5	84.6	75.8	95.2
361	96.9	75.0	85.1	104.1	101.5	79.4	100.0	98.3	85.5	79.0	84.1	115.1
362	104.7	92.3	91.9	92.0	98.1	69.0	100.0	116.6	92.5	88.5	93.0	64.8
369	155.9	134.2	121.0	121.9	101.7	86.2	100.0	109.9	100.3	84.5	68.1	101.4
37	99.3	80.8	90.1	99.4	100.1	78.2	100.0	110.6	113.1	103.8	109.5	112.8
371	104.2	84.5	93.2	104.9	102.4	78.1	100.0	111.9	117.8	104.1	111.3	115.2
372	84.0	69.2	80.3	82.1	92.9	78.6	100.0	106.5	98.5	102.8	103.7	105.5
38	129.8	103.2	93.2	100.1	107.4	95.6	100.0	106.9	97.0	81.6	75.8	89.7
381	125.1	111.8	110.9	110.5	109.0	102.4	100.0	100.4	99.6	88.9	86.8	114.8
382	124.6	106.9	91.6	98.7	106.1	108.6	100.0	104.9	107.1	88.5	95.7	106.5
383	112.9	101.4	97.8	98.5	104.3	95.0	100.0	107.4	91.4	71.7	60.2	58.8
384	145.5	93.2	76.0	93.2	107.7	82.9	100.0	112.5	91.6	77.1	64.4	76.8
3843	152.3	91.0	72.3	92.6	109.4	80.1	100.0	114.4	90.2	73.7	61.9	77.6
OTHERS	109.9	104.9	95.6	96.2	98.7	97.7	100.0	102.3	98.7	95.1	77.9	72.5
385	140.3	132.3	112.3	106.8	118.2	101.2	100.0	113.1	109.3	88.6	81.6	112.3
39	105.6	92.9	90.4	97.1	99.7	89.8	100.0	101.8	96.8	89.7	89.8	100.3

SOURCE: CEPAL (December 1991) "Proyecto Revisión de las Cuentas Nacionales y de la Distribución del Ingreso", CENTRAL BANK and INDEC.

ANNEX TABLE A-5
PRODUCTION LEVELS OF A SELECTED GROUP OF PRODUCTS (1986-1992)

ISIC 1992	GROUP OF PRODUCTS	UNIT OF MEASUREMENT	1986	1987	1988	1989	1990	1991
3111	Slaughtering	Thousands of heads	10.404	9.409	8.997	9.147	9.272	9.259
8.785								
3112	Cheese	Thousands of tons	261	277	252	256	265	283
292								
3115	Vegetable oils (1)	Thousands of tons	2.365	2.029	2.420	2.378	2.805	3.071
3.068								
3115	Pellets and expellers (1)	Thousands of tons	5.460	5.476	6.632	6.104	7.422	7.982
8.537								
3116	Wheat flour	Thousands of tons	2.996	2.996	3.006	3.279	3.102	3.314
3.113								
3118	Sugar	Thousands of tons	1.038	981	1.048	944	1.243	1.473
1.282								
3131	Liquors	Thousands of liters	121.392	103.885	84.998	61.845	57.201	71.628
77.144								
3131	Alcohol	Thousands of liters	340.953	329.596	232.009	116.904	140.470	140.801
...								
3132	Wines	Thousands of hectoliters	18.559	18.383	17.229	17.229	17.131	17.111
16.193								
3133	Beers	Thousands of hectoliters	5.452	5.847	5.229	6.102	6.173	7.991
9.505								
3134	Sodas	Thousands of hectoliters	17.401	16.791	11.967	9.799	10.065	15.561
19.545								
3140	Cigarettes	Millions of packages(20u)	2.004	1.883	1.693	1.677	1.657	1.728
1.845								
3211	Cotton fibers used in spinning mills	Thousands of tons	126	129	128	131	131	140
120								
3411	Paper Newsprint	Thousands of tons	728	226	228	221	207	198
206	Others	Thousands of tons	226	888	766	725	720	767
771								
3511	Chemical products Sulfuric acid	Tons	250.840	253.046	258.000	214.344	209.384	243.126
218.000	Calcium carbide	Tons	.	.	.	59.018	41.321	59.413
45.984	Caustic soda	Tons	.	.	.	242.000	230.000	210.000
...	Chlorine	Tons	.	.	.	216.000	210.000	185.000
...								
3511	Basic petrochemical products Carbon sulphide	Tons	8.862	8.845	7.664	7.008	7.774	9.093
9.780	Ethylene	Tons	261.776	283.757	274.728	279.817	285.444	265.208
297.250	Ammoniac	Tons	75.733	83.965	83.296	80.444	88.002	85.884
74.100	Benzene	Tons	133.979	140.825	143.525	161.041	146.250	152.100
147.550	Methanol	Tons	33.130	32.842	32.156	29.665	45.781	61.843
62.100	Toluene	Tons	66.257	51.201	56.056	70.805	67.168	56.300
56.050	o-xylene	Tons	25.000	24.980	24.240	25.500	21.010	20.600
21.550								

ANNEX TABLE A-5 (Cont.)

ISIC 1992	GROUP OF PRODUCTS	UNIT OF MEASUREMENT	1986	1987	1988	1989	1990	1991
3511	Intermediate petrochemical products							
	Nitric acid	Tons	27.740	26.180	25.000	26.700	28.200	26.204
25.786								
	Vinyl chloride	Tons	55.734	128.394	188.379	179.862	160.546	129.379
94.850								
	Isopropanol	Tons	39.628	39.372	33.084	36.384	45.646	52.898
46.450								
	Styrene	Tons	43.385	79.560	68.872	86.046	71.300	77.000
77.750								
	sec-Butanol	Tons	4.430	7.297	9.844	6.934	8.066	8.493
8.800								
3511	Final petrochemical products							
	Urea	Tons	91.942	102.228	95.500	97.696	108.795	103.420
86.335								
	Polypropylene	Tons	.	.	.	36.140	55.700	59.564
101.017								
	Polyethylene	Tons	210.064	237.057	258.979	224.093	227.412	241.776
268.294								
	PVC and copolymers	Tons	53.844	95.731	109.892	98.401	104.543	105.668
90.903								
	Polystyrene	Tons	28.813	40.603	31.111	33.070	34.298	46.042
53.350								
	Carbon black	Tons	34.544	41.161	42.040	42.624	36.683	42.914
39.367								
	Synthetic rubber	Tons	53.148	47.158	52.964	48.763	57.200	40.936
41.789								
3513	Cellulosic yarn	Tons	3.565	3.342	3.419	3.491	2.653	3.262
3.202								
	Synthetic fibers	Tons	24.030	28.697	20.108	20.363	21.004	23.127
19.143								
	Synthetic yarn	Tons	31.650	29.715	29.189	25.474	27.790	33.494
31.812								
3521	Paints							
	For construction and domestic use	Tons	83.888	94.872	93.967	65.610	59.107	95.330
109.361								
	Other uses	Tons	27.073	28.181	32.936	32.362	28.366	52.131
38.726								
3523	Soaps (2)							
	Soaps	Tons	44.073	46.066	46.511	26.823	37.055	40.580
45.708								
	Washing soaps	Tons	91.874	78.162	85.052	57.509	115.602	105.719
112.842								
3530	Petroleum							
	Processed	Thousands of m3	24.768	24.298	24.938	25.755	26.885	26.714
28.660								
3530	Naphtas	Thousands of m3	6.060	5.839	5.900	5.503	5.484	5.918
6.466								
3530	Gas-oil	Thousands of m3	7.868	7.609	8.271	8.533	8.867	9.472
10.610								
3530	Diesel-oil	Thousands of m3	973	998	704	445	478	431
253								
3530	Fuel-oil	Thousands of tons	5.147	4.838	4.695	4.539	4.076	3.737
3.073								
3551	Tires							
	For automobiles	Thousands of units	4.579	4.974	5.297	4.594	4.677	4.568
5.365								
	For tractors	Thousands of units	274	204	308	226	278	171
253								
3692	Cement	Thousands of tons	5.553	6.302	6.028	4.449	3.612	4.399
5.051								
3710	Primary iron	Thousands of tons	2.558	2.785	2.663	3.336	2.901	2.259
1.989								
3710	Crude steel	Thousands of tons	3.242	3.603	3.624	3.883	3.624	2.972

2.669 3710	Rolling Hot (3)	Thousands of tons	25.445	2.906	3.126	3.063	2.802	2.672
2.312	Tubes without seams	Thousands of tons	331	387	430	484	525	661
569 704	Cold	Thousands of tons	919	1.002	991	883	708	673
3720	Primary aluminum	Tons	147.607	152.527	154.103	162.030	163.038	166.290
153.002 3720 34.500	Electrolytic Zinc	Tons	29.123	31.662	32.657	31.516	30.713	33.452

ANNEX TABLE A-5 (Cont.)

ISIC 1992	GROUP OF PRODUCTS	UNIT OF MEASUREMENT	1986	1987	1988	1989	1990	1991
3819	Stoves	Units	308.000	305.000	248.000	290.000	236.079	310.226
371.970								
3819	Water heaters	Units	103.000	69.000	90.000	102.000	119.806	160.263
249.056								
3819	Water heater tanks	Units	142.000	165.000	120.000	115.000	170.798	245.317
325.680								
3819	Radiators	Units	228.000	204.000	195.000	200.000	172.744	242.946
307.659								
3823	Machine tools							
	For metals	Tons	4.029	4.644	4.806	3.303	3.968	2.869
2.451								
	For wood	Tons	339	284	217	191	215	213
271								
3843	Transport vehicles	Units	170.490	193.315	164.160	127.823	99.639	138.949
261.960								
	Automobiles	Units	113.889	158.743	135.776	107.597	81.107	114.104
220.516								
	Pick-ups	Units	.	.	.	.	13.879	18.906
31.366								
	Trucks	Units	.	.	.	.	2.990	3.482
5.557								
	Buses	Units	.	.	.	.	1.663	2.457
4.521								
3843	Piggy back	Units	537	412	451	464	474	487
550								
3843	Trailers	Units	955	527	435	579	902	977
1.100								
3843	Tractors	Units	8.056	3.114	5.075	4.295	6.091	3.588
4.092								

SOURCE: INSTITUTO NACIONAL DE ESTADISTICA Y CENSOS
(1) Of sunflower, soybeans, flax and cotton.
(6) Since 1990 power detergents are included.
(3) Seamless tubes are included.

ANNEX TABLE A-6
ARGENTINA, MANUFACTURING COMPOSITION OF VALUE ADDED AT 1986 MARKET PRICES (1980-91), ISIC

ISIC	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
31	19.5	20.8	21.7	21.4	22.0	23.8	23.1	22.7	23.0	24.2	24.5	24.3
311/12	13.0	14.1	15.4	15.2	15.3	16.5	16.0	16.1	17.0	18.1	18.4	18.1
3111	2.9	3.4	3.2	2.8	2.8	3.2	3.1	3.3	3.3	3.3	3.4	3.1
3115	1.0	0.9	1.3	1.6	1.8	2.3	2.4	2.2	2.7	2.7	3.3	3.2
3117	3.0	3.3	3.5	3.6	3.5	3.9	3.5	3.5	3.8	4.4	4.2	3.9
3118	1.7	1.8	1.9	1.6	1.6	1.5	1.3	1.2	1.3	1.3	1.6	1.5
OTHERS	4.5	4.7	5.4	5.6	5.5	5.7	5.8	6.0	5.9	6.3	5.9	6.4
313	3.3	3.5	3.2	3.1	3.3	3.5	3.6	3.4	2.9	2.8	2.8	3.2
314	3.1	3.2	3.1	3.1	3.4	3.7	3.5	3.2	3.0	3.3	3.3	3.0
32	10.9	11.2	11.5	12.0	12.4	12.5	12.6	11.3	12.0	12.6	11.5	11.9
321	5.7	5.7	6.0	6.2	6.4	6.1	6.6	6.1	6.6	6.8	6.6	6.9
3211	3.0	3.0	3.6	3.9	4.0	3.9	4.3	4.0	4.5	4.5	4.6	4.5
OTHERS	2.7	2.7	2.4	2.3	2.4	2.2	2.4	2.2	2.2	2.3	2.0	2.3
322	2.7	2.8	3.1	3.4	3.6	3.7	3.4	3.2	3.2	3.5	2.9	2.5
323	1.0	1.2	1.1	1.1	1.0	1.4	1.2	1.1	1.2	1.3	1.1	1.2
324	1.4	1.5	1.3	1.3	1.3	1.3	1.3	0.9	1.0	1.0	0.9	1.3
33	2.4	2.2	2.0	2.3	2.2	2.3	2.4	2.3	2.4	2.4	2.1	2.5
331	1.5	1.3	1.3	1.5	1.4	1.5	1.5	1.5	1.6	1.6	1.4	1.4
332	0.9	1.0	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.6	1.1
34	4.3	4.4	4.6	5.0	4.9	5.0	5.1	5.2	4.9	5.2	5.1	5.0
341	1.6	1.7	1.9	2.1	2.1	2.2	2.2	2.4	2.3	2.3	2.3	2.5
342	2.7	2.7	2.7	3.0	2.8	2.8	2.8	2.8	2.6	2.9	2.7	2.4
35	24.2	25.9	26.3	25.5	24.3	23.6	24.6	24.4	24.8	25.0	28.2	26.3
351	2.4	2.5	3.5	3.6	3.6	3.5	3.8	4.1	4.4	4.6	4.7	4.2
3511	1.6	1.8	2.3	2.3	2.2	2.3	2.1	2.3	2.5	2.5	2.6	2.2
OTHERS	0.9	0.8	1.2	1.3	1.4	1.3	1.7	1.8	1.9	2.1	2.1	2.0
352	6.3	6.9	6.9	6.2	5.4	5.6	5.5	5.4	5.5	4.2	4.9	5.3
353	12.8	14.0	13.0	12.5	11.8	11.7	11.7	11.1	11.3	13.0	14.8	13.5
354	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3
355	1.5	1.1	1.3	1.6	1.7	1.3	1.5	1.4	1.6	1.4	1.8	1.4
356	1.0	1.2	1.3	1.4	1.5	1.3	1.9	2.1	1.8	1.4	1.7	1.6
36	5.7	5.6	5.4	5.1	4.5	4.0	4.4	4.8	4.4	4.2	3.7	4.2
361	0.6	0.5	0.6	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.6	0.7
362	1.0	1.0	1.0	0.9	1.0	0.8	1.0	1.1	0.9	1.0	1.0	0.6
369	4.2	4.1	3.8	3.6	2.9	2.7	2.8	3.1	2.9	2.7	2.2	2.9
37	3.5	3.2	3.7	3.8	3.7	3.2	3.7	4.0	4.3	4.3	4.5	4.1
371	2.8	2.5	2.9	3.0	2.9	2.4	2.8	3.1	3.4	3.2	3.5	3.2
372	0.7	0.7	0.8	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0	0.9
38	28.6	25.8	24.0	24.0	25.1	24.8	23.3	24.5	23.3	21.2	19.6	20.8
381	7.3	7.4	7.5	7.0	6.7	7.0	6.1	6.1	6.3	6.1	5.9	7.0
382	5.2	5.0	4.4	4.5	4.7	5.3	4.4	4.5	4.9	4.3	4.7	4.7
383	4.8	4.9	4.8	4.5	4.7	4.7	4.5	4.7	4.2	3.6	3.0	2.6
384	10.7	7.8	6.5	7.4	8.4	7.2	7.8	8.6	7.3	6.7	5.6	5.9
3843	9.4	6.4	5.2	6.2	7.2	5.8	6.5	7.3	6.1	5.4	4.5	5.0
OTHERS	1.3	1.4	1.3	1.2	1.2	1.3	1.2	1.2	1.3	1.3	1.1	0.9
385	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.6
39	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9

SOURCE: CEPAL (December 1991) "Proyecto Revisión de las Cuentas Nacionales y de la Distribución del Ingreso", CENTRAL BANK and INDEC.

ANNEX TABLE A-7
ARGENTINA, YEARLY GROWTH OF MANUFACTURING VALUE ADDED AT 1986 PRICES (1980-91), ISIC

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
3	-12.0	-2.7	7.4	2.6	-9.9	11.4	1.8	-4.9	-7.3	0.1	11.7
31	-6.1	1.6	5.8	5.8	-2.8	8.2	0.2	-3.8	-2.2	1.0	11.0
311/12	-5.1	6.3	6.0	3.6	-2.8	7.9	2.6	0.4	-1.4	1.6	9.9
3111	1.9	-7.5	-6.0	2.5	2.7	6.9	7.2	-3.6	-5.9	1.3	1.6
3115	-20.2	43.9	31.7	18.1	12.7	16.9	-4.4	16.4	-6.3	20.4	9.7
3117	-1.5	1.7	10.5	0.8	-0.2	-1.1	2.5	2.9	8.8	-5.4	2.9
3118	-5.7	4.8	-9.5	3.6	-18.3	-4.2	-3.3	4.4	-10.9	23.5	3.2
OTHERS	-8.5	13.1	9.8	1.9	-7.8	14.3	4.3	-5.7	-1.1	-6.0	21.4
313	-8.8	-10.0	3.9	9.9	-5.3	15.0	-4.8	-18.3	-9.8	-0.4	26.7
314	-7.4	-6.3	6.3	12.4	-0.4	2.9	-5.6	-9.7	0.7	-1.1	4.2
32	-9.6	-0.3	12.5	6.0	-9.5	12.2	-8.2	0.5	-2.8	-8.3	15.2
321	-12.5	2.6	11.7	6.4	-14.4	20.9	-5.9	2.4	-5.2	-2.8	16.5
3211	-13.1	15.9	17.8	6.4	-13.3	22.7	-6.2	7.1	-6.1	1.7	10.6
OTHERS	-11.9	-12.3	2.9	6.3	-16.3	17.7	-5.4	-6.2	-3.4	-12.0	30.1
322	-8.2	7.2	19.0	8.6	-8.7	4.2	-6.6	-3.5	0.7	-17.4	-3.4
323	4.7	-11.9	1.3	0.9	17.1	-4.3	-4.7	0.1	8.3	-15.4	17.6
324	-11.1	-15.7	9.8	1.5	-8.4	11.1	-27.8	2.4	-10.8	-3.4	60.7
33	-17.2	-12.4	20.2	-0.3	-4.8	15.2	-2.9	-2.0	-5.4	-14.8	35.5
331	-25.3	-1.1	22.7	-0.3	-3.7	6.9	3.8	0.8	-6.6	-9.3	11.0
332	-3.9	-26.8	15.8	-0.4	-6.7	30.8	-13.1	-7.1	-3.1	-25.3	92.4
34	-10.5	3.5	16.5	0.0	-8.8	13.8	3.7	-9.4	-1.3	-3.5	9.8
341	-9.3	9.2	18.0	3.3	-6.9	15.4	7.2	-6.8	-6.3	-1.0	22.6
342	-11.3	-0.0	15.5	-2.3	-10.2	12.6	1.0	-11.5	3.0	-5.6	-0.9
35	-5.9	-1.4	4.3	-2.2	-12.7	16.2	0.7	-3.0	-6.6	12.7	4.3
351	-8.3	35.3	9.5	4.1	-12.1	19.5	10.5	1.6	-2.4	1.9	-1.1
3511	-1.3	25.8	8.6	-1.6	-8.0	5.9	9.5	2.7	-5.3	1.3	-4.1
OTHERS	-21.2	57.2	11.2	14.4	-18.5	43.3	11.7	0.1	1.4	2.5	2.5
352	-3.3	-2.2	-3.8	-10.1	-8.1	9.3	0.3	-3.3	-28.4	16.9	20.2
353	-4.2	-9.7	3.5	-2.8	-11.2	11.7	-3.5	-3.2	7.2	13.8	1.6
354	-10.8	4.9	12.2	3.0	1.4	5.4	15.3	1.4	10.5	-22.3	25.4
355	-31.9	9.7	30.0	9.3	-31.5	35.0	-6.3	7.5	-20.9	28.8	-10.3
356	1.1	12.1	13.8	9.3	-22.9	60.5	12.9	-17.5	-27.0	17.8	8.4
36	-14.4	-6.1	2.9	-10.6	-19.2	22.7	9.8	-12.1	-12.3	-10.4	25.6
361	-22.6	13.5	22.4	-2.5	-21.7	25.9	-1.7	-13.0	-7.6	6.4	36.9
362	-11.8	-0.4	0.0	6.7	-29.6	44.9	16.6	-20.7	-4.3	5.0	-30.3
369	-13.9	-9.8	0.8	-16.6	-15.2	16.0	9.9	-8.8	-15.7	-19.4	48.9
37	-18.6	11.5	10.3	0.7	-21.9	27.9	10.6	2.3	-8.3	5.5	3.1
371	-18.8	10.3	12.5	-2.4	-23.7	28.0	11.9	5.2	-11.6	6.9	3.5
372	-17.7	16.0	2.3	13.2	-15.5	27.3	6.5	-7.5	4.4	0.8	1.8
38	-20.5	-9.7	7.5	7.2	-10.9	4.6	6.9	-9.3	-15.9	-7.1	18.5
381	-10.6	-0.8	-0.4	-1.3	-6.1	-2.4	0.4	-0.7	-10.8	-2.4	32.3
382	-14.2	-14.4	7.8	7.6	2.3	-7.9	4.9	2.1	-17.3	8.1	11.3
383	-10.2	-3.6	0.7	5.9	-8.9	5.2	7.4	-14.9	-21.5	-16.2	-2.3
384	-36.0	-18.4	22.6	15.6	-23.0	20.6	12.5	-18.6	-15.8	-16.5	19.2
3843	-40.3	-20.5	28.1	18.2	-26.8	24.8	14.4	-21.2	-18.3	-16.1	25.5
OTHERS	-4.5	-8.9	0.6	2.6	-1.0	2.3	2.3	-3.5	-3.6	-18.1	-6.9
385	-5.7	-15.0	-5.0	10.7	-14.4	-1.2	13.1	-3.4	-18.9	-7.9	37.6
39	-12.0	-2.7	7.4	2.6	-9.9	11.4	1.8	-4.9	-7.3	0.1	11.7

SOURCE: CEPAL (December 1991) "Proyecto Revisión de las Cuentas Nacionales y de la Distribución del Ingreso", CENTRAL BANK and INDEC.

ANNEX TABLE A-8
ARGENTINA, MANUFACTURING PRODUCTION, EMPLOYMENT AND PRODUCTIVITY (INDEX 1970=100), (1983-1990)

	1983			1984			1985		
ISIC	PROD.	EMPL.	PROD/ EMPL.	PROD.	EMPL.	PROD/ EMPL.	PROD.	EMPL.	PROD/ EMPL.
3	110.8	75.4	146.9	113.3	77.6	146.0	103.1	74.7	138.0

311/2	107.6	101.9	105.6	108.4	101.7	106.6	106.8	102.4	104.3
313	115.1	93.4	123.2	126.7	99.9	126.8	135.2	102.4	132.0
314	109.1	79.7	136.9	125.6	89.5	140.3	123.8	77.3	160.2
321	92.7	52.7	175.9	98.0	56.8	172.5	75.2	51.7	145.5
322	53.0	54.5	97.2	54.8	57.4	95.5	38.5	52.0	74.0
323	89.7	100.0	89.7	75.8	105.7	71.7	85.5	98.1	87.2
324	36.2	42.8	84.6	41.0	41.8	98.1	33.6	39.6	84.8
331	64.7	79.6	81.3	64.5	79.8	80.8	52.0	77.5	67.1
332	84.0	62.6	134.2	70.8	56.1	126.2	67.7	52.9	128.0
341	114.7	95.0	120.7	114.3	97.9	116.8	104.8	96.7	108.4
342	79.8	66.9	119.3	81.8	67.4	121.4	82.9	67.2	123.4
351	150.6	82.9	181.7	153.9	90.0	171.0	127.6	82.3	155.0
352	122.3	71.6	170.8	141.9	68.5	207.2	140.9	66.7	211.2
353	120.2	98.1	122.5	116.7	98.7	118.2	120.1	98.2	122.3
354	89.4	75.4	118.6	86.3	74.5	115.8	93.4	71.4	130.8
355	142.4	104.0	136.9	156.7	114.0	137.5	118.7	108.8	109.1
356	124.3	153.8	80.8	143.4	156.0	91.9	110.7	147.4	75.1
361	79.0	73.8	107.0	72.8	76.5	95.2	45.5	69.3	65.7
362	88.3	64.7	136.5	87.1	72.2	120.6	57.9	56.4	102.7
369	99.4	75.8	131.1	91.0	75.7	120.2	75.3	70.2	107.3
371	223.3	96.4	231.6	199.3	103.5	192.6	195.1	105.1	185.6
372	128.8	113.4	113.6	138.4	117.7	117.6	107.8	114.5	94.1
381	123.8	75.4	164.2	127.0	74.7	170.0	106.4	70.2	151.6
382	104.2	46.3	225.1	99.2	51.8	191.5	76.1	48.8	155.9
383	71.8	49.2	145.9	78.4	52.0	150.8	68.1	48.5	140.4
384	92.0	73.4	125.3	97.7	76.5	127.7	81.1	71.8	113.0
385	127.9	62.0	206.3	151.7	66.4	228.5	136.4	67.4	202.4

ANNEX TABLE A-8 (Cont.)

ISIC	1986 PROD.	1986 EMPL.	1986 PROD/ EMPL.	1987 PROD.	1987 EMPL.	1987 PROD/ EMPL.	1988 PROD.	1988 EMPL.	1988 PROD/ EMPL.
3	115.9	71.7	161.6	117.0	70.9	165.0	109.3	72.1	151.6
311/2	111.7	96.0	116.4	111.2	94.6	117.5	109.8	92.4	118.8
313	168.8	106.9	157.9	181.1	108.0	167.7	148.8	125.6	118.5
314	127.0	76.4	166.2	119.2	75.2	158.5	107.9	87.0	124.0
321	93.1	50.3	185.1	88.0	49.4	178.1	83.8	52.7	159.0
322	44.1	47.3	93.2	36.9	40.8	90.4	35.1	42.7	84.5
323	92.1	94.6	97.4	81.9	94.6	86.6	79.1	89.1	88.8
324	32.2	37.5	85.9	28.2	33.9	83.2	26.6	33.0	80.6
331	60.1	74.3	80.9	56.7	72.7	78.0	46.9	70.6	66.4
332	88.0	55.6	158.3	85.9	52.4	163.9	73.1	48.0	152.3
341	115.7	95.9	120.6	113.2	99.4	113.9	117.7	100.7	116.9
342	82.7	65.2	126.8	76.3	61.4	124.3	68.6	57.0	120.4
351	165.9	82.9	200.1	164.0	84.0	195.2	156.6	85.2	183.8
352	151.6	66.3	228.7	151.9	62.5	243.0	143.8	58.9	244.1
353	119.6	100.0	119.6	112.3	100.8	111.4	119.4	104.3	114.5
354	90.4	67.5	133.9	100.0	60.9	164.2	96.6	61.8	156.3
355	141.0	102.6	137.4	149.3	100.0	149.3	163.5	102.3	159.8
356	120.1	142.5	84.3	97.1	141.4	68.7	77.7	136.1	57.1
361	67.4	78.5	85.9	63.4	75.6	83.9	55.0	78.8	69.8
362	78.8	48.9	161.1	89.6	47.7	187.8	75.7	53.9	140.4
369	86.5	65.4	132.3	96.1	71.0	135.4	90.6	92.9	97.5
371	201.0	97.9	205.3	227.1	96.5	235.3	225.9	94.0	240.3
372	130.7	112.6	116.1	132.3	108.1	122.4	119.3	106.1	112.4
381	124.3	67.7	183.6	125.3	68.6	182.7	102.7	73.3	140.1
382	81.5	45.3	179.9	75.4	43.0	175.3	75.0	39.2	191.3
383	89.8	45.9	195.6	88.2	43.9	200.9	76.5	44.8	170.8
384	93.5	69.5	134.5	97.3	70.5	138.0	90.1	68.7	131.1
385	131.1	69.5	188.6	168.9	75.6	223.4	142.7	77.1	185.1

ANNEX TABLE A-8 (Cont.)

ISIC	1989 PROD.	1989 EMPL.	1989 PROD/ EMPL.	1990 PROD.	1990 EMPL.	1990 PROD/ EMPL.
3	99.7	66.4	150.2	90.2	62.8	143.6
311/2	111.7	82.1	136.1	108.4	82.2	131.9
313	140.7	103.9	135.4	113.7	79.5	143.0
314	113.0	69.9	161.7	100.8	48.6	207.4
321	84.3	47.7	176.7	80.9	46.4	174.4
322	34.3	41.2	83.3	29.1	37.2	78.2
323	86.1	86.0	100.1	66.8	88.2	75.7
324	21.8	30.1	72.4	21.2	30.3	70.0
331	44.8	62.8	71.3	33.3	57.4	58.0
332	76.2	45.4	167.8	56.9	41.4	137.4
341	104.6	109.0	96.0	96.4	99.8	96.6
342	68.3	52.5	130.1	68.6	53.5	128.2
351	139.1	83.1	167.4	133.7	83.5	160.1
352	117.4	54.3	216.2	120.1	50.1	239.7
353	135.9	115.1	118.1	114.8	122.5	93.7
354	102.6	62.2	165.0	80.3	54.0	148.7
355	123.3	95.7	128.8	135.2	86.7	155.9
356	78.0	127.2	61.3	80.8	130.6	61.9
361	60.5	73.1	82.8	58.8	62.2	94.5
362	73.0	53.4	136.7	75.8	50.5	150.1
369	67.7	90.9	74.5	62.2	83.8	74.2
371	211.6	95.5	221.6	189.1	94.2	200.7
372	84.9	105.3	80.6	79.6	96.6	82.4
381	74.8	65.9	113.5	68.5	58.3	117.5
382	71.4	36.3	196.7	49.1	35.3	139.1
383	59.7	40.1	148.9	58.4	34.3	170.3
384	66.8	64.0	104.4	53.0	60.9	87.0
385	48.6	70.4	69.0	54.0	65.8	82.1

SOURCE: Instituto Nacional de Estadística y Censos.

ANNEX TABLE A-9
ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE & FUELS), (1980-1983)

COMPOSITION OF EXPORTS (percentage)

DESCRIPTION	1980	1981	1982	1983
AGRICULTURAL ORIGIN	65.4	59.0	56.0	67.1
NON-AGRICULTURAL ORIGIN	27.9	27.9	32.2	24.2
FUELS	6.7	13.1	11.8	8.8
TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

DESCRIPTION	1980	1981	1982	1983
AGRICULTURAL ORIGIN	3,403	3,032	2,697	2,805
NON-AGRICULTURAL ORIGIN	1,455	1,435	1,550	1,012
FUELS	347	676	570	366
TOTAL	5,205	5,143	4,817	4,183

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	77.5	78.1	79.5	84.4
32	TEXTILES & GARMENTS	22.1	21.6	20.1	15.0
33	WOOD AND FURNITURE	0.1	0.2	0.2	0.1
34	PAPER AND PRINTING	0.3	0.1	0.1	0.6
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	2,638	2,368	2,145	2,366
32	TEXTILES & GARMENTS	750	655	543	420
33	WOOD AND FURNITURE	5	5	6	3
34	PAPER AND PRINTING	10	4	3	16
	TOTAL	3,403	3,032	2,697	2,805

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	0.0	0.0	0.0	0.0
32	TEXTILES & GARMENTS	9.6	4.3	2.9	2.6
33	WOOD AND FURNITURE	0.3	0.1	0.1	0.1
34	PAPER AND PRINTING	3.8	3.5	2.5	2.0
35	CHEMICALS	22.5	25.2	24.6	34.8
36	NON-METALLIC MINERALS	2.0	2.1	2.2	1.3
37	BASIC METALS	19.6	28.2	28.2	27.0
38	MACHINERY AND EQUIPMENT	41.5	34.9	38.9	32.0
39	MISCELLANEOUS PRODUCTS	0.8	1.7	0.5	0.1
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	0	0	0	0
32	TEXTILES & GARMENTS	140	62	45	27
33	WOOD AND FURNITURE	4	1	1	1
34	PAPER AND PRINTING	55	50	39	20
35	CHEMICALS	327	362	381	352
36	NON-METALLIC MINERALS	28	31	34	13
37	BASIC METALS	285	405	438	274
38	MACHINERY AND EQUIPMENT	604	500	602	324
39	MISCELLANEOUS PRODUCTS	11	25	8	2
	TOTAL	1,455	1,435	1,550	1,012

ANNEX TABLE A-9 (Cont.)
ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE & FUELS), (1984-1987)

COMPOSITION OF EXPORTS (percentage)

DESCRIPTION	1984	1985	1986	1987
AGRICULTURAL ORIGIN	67.7	57.8	64.7	65.5
NON-AGRICULTURAL ORIGIN	24.5	30.5	31.4	32.0
FUELS	7.8	11.7	3.9	2.4
TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

DESCRIPTION	1984	1985	1986	1987
AGRICULTURAL ORIGIN	3,076	2,855	2,924	3,162
NON-AGRICULTURAL ORIGIN	1,115	1,508	1,419	1,546
FUELS	355	576	178	117
TOTAL	4,546	4,939	4,521	4,826

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	83.5	79.8	81.0	78.7
32	TEXTILES & GARMENTS	15.6	19.0	17.9	19.9
33	WOOD AND FURNITURE	0.1	0.1	0.2	0.2
34	PAPER AND PRINTING	0.8	1.1	1.0	1.3
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	2,569	2,279	2,367	2,488
32	TEXTILES & GARMENTS	479	542	522	628
33	WOOD AND FURNITURE	3	4	5	6
34	PAPER AND PRINTING	25	31	29	41
	TOTAL	3,076	2,855	2,924	3,162

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	0.0	0.0	0.0	0.0
32	TEXTILES & GARMENTS	2.3	1.7	2.8	4.6
33	WOOD AND FURNITURE	0.1	0.1	0.1	0.2
34	PAPER AND PRINTING	1.6	1.4	1.7	2.4
35	CHEMICALS	31.5	27.8	24.4	28.5
36	NON-METALLIC MINERALS	1.2	1.0	1.6	2.6
37	BASIC METALS	24.7	31.1	30.4	31.3
38	MACHINERY AND EQUIPMENT	38.6	36.9	38.7	30.3
39	MISCELLANEOUS PRODUCTS	0.1	0.1	0.2	0.2
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	0	0	0	0
32	TEXTILES & GARMENTS	26	25	40	71
33	WOOD AND FURNITURE	1	1	2	2
34	PAPER AND PRINTING	18	22	24	37
35	CHEMICALS	351	419	346	441
36	NON-METALLIC MINERALS	13	16	23	40
37	BASIC METALS	276	468	432	484
38	MACHINERY AND EQUIPMENT	430	556	550	468
39	MISCELLANEOUS PRODUCTS	2	2	2	3
	TOTAL	1,115	1,508	1,419	1,546

ANNEX TABLE A-9 (Cont.)
ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE & FUELS), (1988-1991)

COMPOSITION OF EXPORTS (percentage)

DESCRIPTION	1988	1989	1990	1991
AGRICULTURAL ORIGIN	63.0	58.2	57.8	61.0
NON-AGRICULTURAL ORIGIN	34.6	37.6	32.8	31.6
FUELS	2.4	4.2	9.4	7.4
TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

DESCRIPTION	1988	1989	1990	1991
AGRICULTURAL ORIGIN	4,453	4,550	5,374	5,402
NON-AGRICULTURAL ORIGIN	2,444	2,941	3,049	2,799
FUELS	171	330	875	656
TOTAL	7,068	7,821	9,298	8,856

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	80.3	81.9	79.3	81.2
32	TEXTILES & GARMENTS	17.5	15.6	17.5	17.5
33	WOOD AND FURNITURE	0.2	0.4	0.5	0.3
34	PAPER AND PRINTING	1.9	2.1	2.7	1.0
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	3,576	3,729	4,262	4,386
32	TEXTILES & GARMENTS	781	710	941	948
33	WOOD AND FURNITURE	11	17	28	14
34	PAPER AND PRINTING	85	95	143	54
	TOTAL	4,453	4,550	5,374	5,402

LEVEL AND COMPOSITION OF MANUFACTURING EXPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF EXPORTS (percentage)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	0.0	0.0	0.0	0.0
32	TEXTILES & GARMENTS	4.6	4.5	4.1	3.4
33	WOOD AND FURNITURE	0.2	0.2	0.3	0.3
34	PAPER AND PRINTING	2.1	2.0	2.6	2.1
35	CHEMICALS	29.9	26.3	27.0	26.9
36	NON-METALLIC MINERALS	1.9	2.6	3.2	2.9
37	BASIC METALS	34.7	39.3	34.7	29.2
38	MACHINERY AND EQUIPMENT	26.5	24.8	27.7	34.7
39	MISCELLANEOUS PRODUCTS	0.2	0.3	0.5	0.4
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF EXPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	0	1	0	1
32	TEXTILES & GARMENTS	111	132	124	96
33	WOOD AND FURNITURE	5	6	9	9
34	PAPER AND PRINTING	50	59	81	59
35	CHEMICALS	732	772	822	752
36	NON-METALLIC MINERALS	47	76	97	82
37	BASIC METALS	847	1,157	1,058	816
38	MACHINERY AND EQUIPMENT	646	729	845	972
39	MISCELLANEOUS PRODUCTS	5	9	14	12
	TOTAL	2,444	2,941	3,049	2,799

SOURCE: OWN ESTIMATION BASED ON ECLA COMPUTATION OF MANUFACTURING EXPORTS AT FIVE DIGITS OF ISIC.

ANNEX TABLE A-10
ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE AND FUELS), (1980-1983)

COMPOSITION OF IMPORTS (percentage)

DESCRIPTION	1980	1981	1982	1983
AGRICULTURAL ORIGIN	10.3	9.8	8.2	7.1
NON-AGRICULTURAL ORIGIN	84.6	84.2	87.4	88.7
FUELS	5.1	6.0	4.4	4.2
TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

DESCRIPTION	1980	1981	1982	1983
AGRICULTURAL ORIGIN	932	812	362	270
NON-AGRICULTURAL ORIGIN	7,626	6,968	3,853	3,372
FUELS	461	493	195	159
TOTAL	9,019	8,273	4,410	3,801

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	34.5	34.0	28.9	28.0
32	TEXTILES & GARMENTS	23.7	26.9	20.4	21.8
33	WOOD AND FURNITURE	19.5	15.2	16.0	20.8
34	PAPER AND PRINTING	22.3	23.9	34.7	29.4
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	322	276	105	76
32	TEXTILES & GARMENTS	221	219	74	59
33	WOOD AND FURNITURE	182	123	58	56
34	PAPER AND PRINTING	208	194	125	79
	TOTAL	932	812	362	270

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	0.1	0.1	0.0	0.0
32	TEXTILES & GARMENTS	2.7	3.0	1.0	0.5
33	WOOD AND FURNITURE	0.2	0.2	0.1	0.0
34	PAPER AND PRINTING	1.8	2.6	2.0	1.8
35	CHEMICALS	18.4	17.8	28.4	34.2
36	NON-METALLIC MINERALS	2.4	1.9	1.3	1.6
37	BASIC METALS	9.9	7.0	10.9	11.6
38	MACHINERY AND EQUIPMENT	62.2	65.3	55.3	49.7
39	MISCELLANEOUS PRODUCTS	2.4	2.1	1.0	0.6
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1980	1981	1982	1983
31	FOOD, BEVERAGE & TOBACCO	4	5	0	0
32	TEXTILES & GARMENTS	203	212	38	16
33	WOOD AND FURNITURE	12	14	3	1
34	PAPER AND PRINTING	140	180	77	62
35	CHEMICALS	1,400	1,237	1,094	1,152
36	NON-METALLIC MINERALS	180	131	51	54
37	BASIC METALS	758	489	421	392
38	MACHINERY AND EQUIPMENT	4,747	4,552	2,132	1,675
39	MISCELLANEOUS PRODUCTS	183	149	38	21
	TOTAL	7,626	6,968	3,853	3,372

ANNEX TABLE A-10 (Cont.)
ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE AND FUELS), (1984-1987)

COMPOSITION OF IMPORTS (percentage)

DESCRIPTION	1984	1985	1986	1987
AGRICULTURAL ORIGIN	7.2	5.9	8.3	7.2
NON-AGRICULTURAL ORIGIN	88.3	90.0	88.6	84.5
FUELS	4.5	4.1	3.1	8.3
TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

DESCRIPTION	1984	1985	1986	1987
AGRICULTURAL ORIGIN	278	186	323	368
NON-AGRICULTURAL ORIGIN	3,410	2,818	3,447	4,317
FUELS	173	128	122	423
TOTAL	3,860	3,132	3,892	5,108

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	36.9	45.0	39.5	41.9
32	TEXTILES & GARMENTS	21.4	16.9	22.9	20.7
33	WOOD AND FURNITURE	20.1	15.8	15.2	12.9
34	PAPER AND PRINTING	21.5	22.3	22.4	24.4
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	102	84	128	154
32	TEXTILES & GARMENTS	60	31	74	76
33	WOOD AND FURNITURE	56	29	49	48
34	PAPER AND PRINTING	60	41	72	90
	TOTAL	278	186	323	368

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	0.0	0.0	0.0	0.0
32	TEXTILES & GARMENTS	0.6	0.4	0.3	0.3
33	WOOD AND FURNITURE	0.1	0.0	0.0	0.0
34	PAPER AND PRINTING	0.9	1.1	1.4	1.1
35	CHEMICALS	35.2	31.9	35.0	28.6
36	NON-METALLIC MINERALS	1.3	1.3	1.4	1.4
37	BASIC METALS	13.2	9.8	10.0	11.5
38	MACHINERY AND EQUIPMENT	48.0	54.7	51.1	56.4
39	MISCELLANEOUS PRODUCTS	0.7	0.7	0.8	0.6
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1984	1985	1986	1987
31	FOOD, BEVERAGE & TOBACCO	0	0	0	0
32	TEXTILES & GARMENTS	19	10	11	11
33	WOOD AND FURNITURE	2	1	1	2
34	PAPER AND PRINTING	32	32	48	47
35	CHEMICALS	1,201	899	1,205	1,236
36	NON-METALLIC MINERALS	45	36	50	61
37	BASIC METALS	451	276	344	497
38	MACHINERY AND EQUIPMENT	1,638	1,542	1,760	2,436
39	MISCELLANEOUS PRODUCTS	22	21	28	28
	TOTAL	3,410	2,818	3,447	4,317

ANNEX TABLE A-10 (Cont.)
ARGENTINA, LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY ORIGIN (AGRICULTURE, NON-AGRICULTURE AND FUELS), (1988-1991)

COMPOSITION OF IMPORTS (percentage)

DESCRIPTION	1988	1989	1990	1991
AGRICULTURAL ORIGIN	5.3	5.0	5.7	9.7
NON-AGRICULTURAL ORIGIN	88.0	90.0	90.1	86.0
FUELS	6.8	5.1	4.2	4.3
TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

DESCRIPTION	1988	1989	1990	1991
AGRICULTURAL ORIGIN	248	177	197	714
NON-AGRICULTURAL ORIGIN	4,136	3,221	3,101	6,359
FUELS	318	181	146	321
TOTAL	4,702	3,580	3,444	7,395

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	43.7	44.6	42.3	43.3
32	TEXTILES & GARMENTS	14.2	20.3	25.0	31.0
33	WOOD AND FURNITURE	14.1	14.5	13.4	7.1
34	PAPER AND PRINTING	28.0	20.7	19.3	18.6
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	108	79	83	310
32	TEXTILES & GARMENTS	35	36	49	221
33	WOOD AND FURNITURE	35	26	26	51
34	PAPER AND PRINTING	69	37	38	133
	TOTAL	248	177	197	714

LEVEL AND COMPOSITION OF MANUFACTURING IMPORTS BY NON-AGRICULTURAL ORIGIN AND ISIC (2 DIGITS)

COMPOSITION OF IMPORTS (percentage)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	0.0	0.0	0.0	0.2
32	TEXTILES & GARMENTS	0.2	0.2	0.5	2.1
33	WOOD AND FURNITURE	0.0	0.1	0.1	0.2
34	PAPER AND PRINTING	0.8	0.9	1.4	2.0
35	CHEMICALS	31.4	37.6	40.2	30.0
36	NON-METALLIC MINERALS	1.4	1.5	1.6	1.5
37	BASIC METALS	14.6	10.4	6.6	7.0
38	MACHINERY AND EQUIPMENT	51.1	48.6	48.2	54.3
39	MISCELLANEOUS PRODUCTS	0.5	0.7	1.4	2.8
	TOTAL	100.0	100.0	100.0	100.0

LEVEL OF IMPORTS (millions of current US dollars)

ISIC	DESCRIPTION	1988	1989	1990	1991
31	FOOD, BEVERAGE & TOBACCO	0	0	0	16
32	TEXTILES & GARMENTS	10	6	16	133
33	WOOD AND FURNITURE	2	2	4	11
34	PAPER AND PRINTING	33	28	42	127
35	CHEMICALS	1,299	1,213	1,247	1,907
36	NON-METALLIC MINERALS	58	50	50	92
37	BASIC METALS	602	336	205	448
38	MACHINERY AND EQUIPMENT	2,112	1,565	1,494	3,450
39	MISCELLANEOUS PRODUCTS	21	22	43	175
	TOTAL	4,136	3,221	3,101	6,359

SOURCE: OWN ESTIMATION BASED ON ECLA COMPUTATION OF MANUFACTURING IMPORTS AT FIVE DIGITS OF ISIC.