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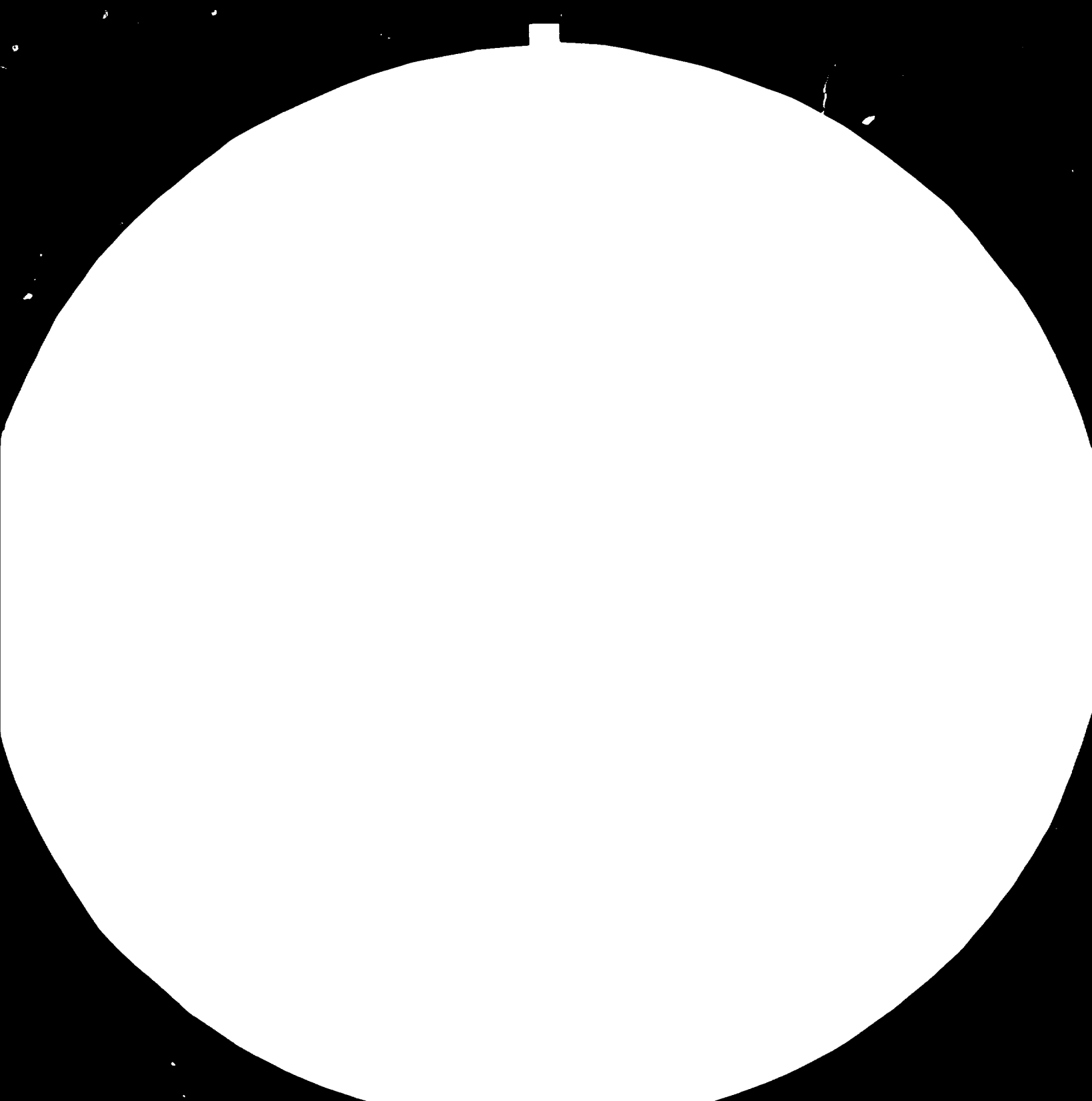
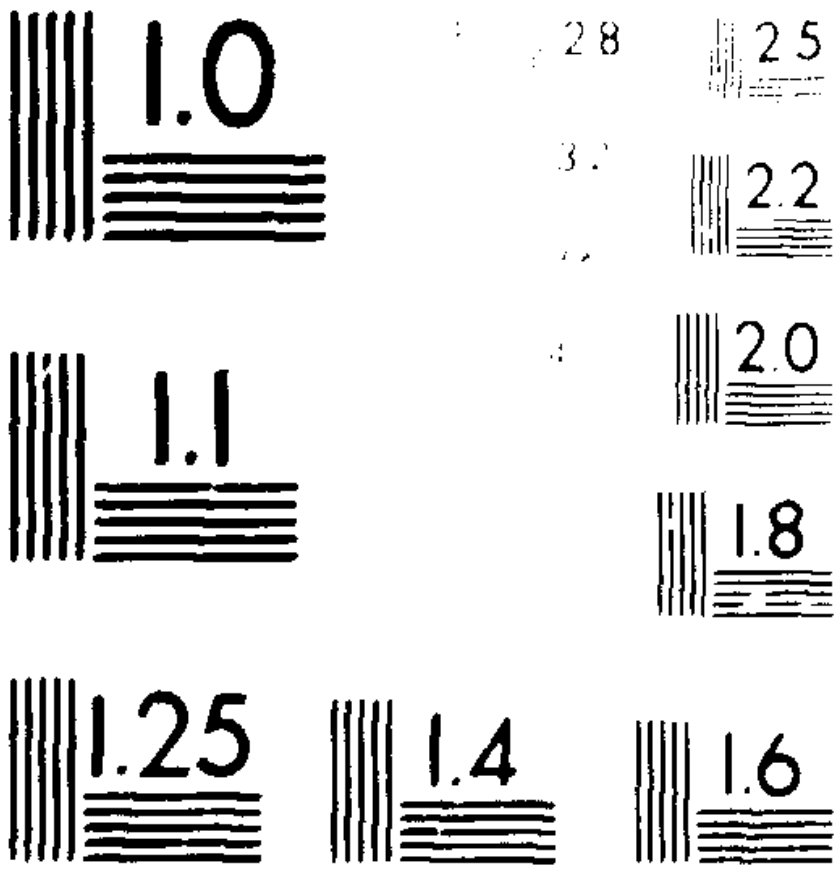
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org





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ASSESSMENT OF RESTRUCTURING NEEDS OF THE ARGENTINE TEXTILE INDUSTRY.

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GHERZI TEXTIL ORGANISATION
ZURICH LÖWENSTRASSE 1

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1. SUMMARY

1.1 Introduction and Terms of Reference

The study has been carried out in Argentina during 6 weeks from end of June to beginning of August 1983 by a mission of 3 experts (textile technician, economist and financial analyst) according to the following terms of reference:

Study the recent development of the productivity development of the textile industry and assess other factors having an influence on productivity;

Investigate the cost structure;

Investigate the relationship between productivity and size of industry and degree of industrial concentration;

Investigate statistical similiarities on productivity in other countries;

Assess the influence of governmental measurements on industrial prices and compare the situation with other industrial sectors;

Study the influence of the tax system on industrial prices;

Study the influence of government control on prices for raw material, energy, public services, etc.

Assess the chances Argentinian textile products could have on international markets.

The immediate objective of the study was to provide basic material and guidelines for the future industrial policy by assessing the overall situation of the textile industry and identifying its major problems.

The members of the mission were effectively assisted by the National Institute of Industrial Technology (INTI) and the Textile Industry Federation (F.I.T.A.) who also contributed to the structural set up of the study according to major areas of interest.

Prior to the fieldwork questionnairs were distributed to 78 companies of which 22 were returned and together with a total of 18 mill visits approximately 45 % of the installed spinning and 32 % of the weaving capacity of the cotton system could be covered. For the wool sector this percentage amounted to 5. Only little information could be obtained for the knitting and garment industry.

1.2 Summary

A team of three consultants of Gherzi Textile Organisation - two textile economists and a technologist - visited Argentina during six weeks from June 20 to August 5, 1983 under the Unido Project N° SI/ARG/82/801.

During this period the mission has visited 18 specialized and integrated mills of the cotton (15) and wool (3) subsectors in the areas of Buenos Aires, Catamarca and Tucuman and has evaluated questionnaires of 22 mills that had been returned out of a distributed total of 78. In addition, the mission visited the cotton and wool chambers, the federations of the cotton, wool and garment industries and, among other banks, the National Development Bank. A wrap-up meeting had been arranged with the Secretary of Industry and Mining in the Ministry of Economy to discuss some of the mission's findings.

A final presentation and discussion has been held with the commission and members of the Federation of Textile Industry (FITA) together with the national counterpart for the project, the National Institute of Industrial Technology (INTI) and its Textile Research Center (CIT) on August 1, 1983.

The mission wishes to express their gratitude for the great hospitality and active co-operation extended to them from all authorities and representatives of the industry throughout their stay in the country.

Review of the Structure and Performance of the Argentine Textile Industry

The textile sector accounts of 10 % of the manufacturing industries in terms of contribution to the GDP at factor cost at constant 1970 prices and employs about 130'000 persons in 5'000 factories. These figures include, however, the leather and shoe industry which account for 28'000 employees and 1'500 factories. The textile industry itself (spinning, weaving and processing in cotton and wool system) accounts for 70'000 people in 1'800 manufacturing units, while the garment industry employs about 33'000 persons in 1'700 units. The actual contribution for the GDP is 1,6 % for the textile and 0,3 % for the garment industry.

The performance of the textile industry like most of the other sectors has to be seen in light of the overall financial and economic policy of the Country during the past years.

Both the textile and garment industry have lost more than 50 % of personnel employed during the last 5 years which reflects the general economic development during this period when many companies closed down.

It became clear during the course of the study that the basic problems of the textile industry were the environmental economic and monetary conditions rather than inherent structural and technical problems which caused the decrease of capacity utilization and efficiency as well as the critical financial situation of most of the textile mills.

Argentina is a resource-rich country with abundant natural resources and human capital.

With an average cotton fibre production of 160'000 tons p.a. Argentina ranks tenth among the world's cotton producing countries. The domestic textile industry consumes on an average 100'000 tons p.a. while the rest is exported. Imports of mostly long staple cotton fibre amount to only 6 % of the yearly domestic consumption.

With a share of 28 % of regenerated and synthetic fibre production compared to cotton in 1979 the country appeared to have nearly achieved self-sufficiency. This percentage fell below 20 in 1981 of which more than 70 % was imported as against 28 % in 1979.

Argentina is the world's fourth largest producer of wool with a share of 6 % and exports more than 90 % in form of greasy or washed wool. Exports of yarn and fabric are negligible. Yearly production averaged 155'000 tons p.a. (greasy base) and exports about 130'000 tons p.a.

P.c./fibre consumption decreased during the period from 1975 to 1982 by almost 60 % from 6.64 kg to 4.21 kg in the wake of the economic depression.

The largest decrease in consumption during this period was for regenerated fibres (335 %) and wool (167 %) followed by synthetic fibres (41 %) and cotton (32 %).

In restoring the 1975 p.c. fibre consumption level, the synthetic fibres will play a key role and increase more than proportionally once a successful rehabilitation of the domestic synthetic fibre industry has been accomplished.

The mission estimates that an investment of 650 million US$ in the cotton system alone would be required to restore the level of the p.c. consumption of 1975.

Export Performance

Compared to the domestic production of cotton yarns and fabrics, exported quantities have been small, never exceeding 10 % for yarn and 4 % for fabrics, averaging 2 % for both during the period from 1975 to 1982.

Taking into account the relatively high percentage of cotton fibre that is exported, this situation indicates that the domestic textile industry originally oriented towards import substitution has not succeeded in building up sufficient internationally competitive capacities and organization to generate a stronger export drive even before (1978) the import liberalization. The weak export performance after this period clearly reflects the Country's unfavourable monetary and general economic condition which could not be offset by

the official export incentive system. A reconsideration of the incentive system within the framework of an overall economic policy would seem advisable to brighten the bleak export prospects of the textile industry operating in a domestic market which is now again highly protected.

As far as the quota are concerned, neither for cotton yarn and fabrics as well as for wool products have the existing import quota restriction of the USA and the EEC been a constraint during the last 5 years with an average of less than 50 % of quota fulfilment.

Structure, Capacity and Geographic Distribution

The Cotton Textile Sector is characterized by a nucleus of large sized integrated textile mills and a considerable number of small and medium sized specialized plants.

Most of the ringspinning capacity, 71 %, is concentrated in Greater Buenos Aires.

O.E.-plants show a healthier spread over the whole country. Only about 35 % being in Greater Buenes Aires.

Ringspinning and O.E.-Spinning

The installed capacity of the Argentine cotton spinning sector represents on a replacement basis of both plant and machinery an investment in the order of US$ 1 billion.

Almost no growth took place between 1960 and 1982 in ringspinning (1960: 1'038'000 spindles, 1982: 1'125'000 spindles), whilst a rapid growth could be seen betwen 1976 and 1981 in O.E.-spinning (1976: 1'500 rotors, 1981: 22'000 rotors). The share of O.E.-spinning based on total spinning capacity reached about 7,9 % and due to import duty policies more than double of South American average.

The degree of modernization between 1974 and 1981 can be seen from the percentage of spindles installed during this period. 15 % of the total ringspindle capacity in situ in 1980 was installed in this time and is a little higher than the world average of about 13 %.

The output of the ringspinning sector showed a mixed performance with an output ranging from 35'000 MTY in 1973 to 97'000 MTY in 1976. The combined production of ring and O.E.-spinning was 1979: 106'000 MTY and 1981: 78'000 MTY.

The percentage of blended yarns was extremely low at 5,2 % in 1982 and has shown, quite in contrast to other countries, a downward trend (1977 = 9,6 %).

Only 75 % of the ringspindles installed in 1981 were active. This compares quite unfavourably with other textile producing countries.

Whereas the operating hours recorded by the mills analyzed were on average 6'109 hours, the country's average was only 5'670 hours between 1976 and 1980.

The age distribution of spinning equipment mainly in ringspinning mills showsa low degree of modernization.

Concerning ringspinning machine speeds, as a result of the age structure, quite considerable machine productivity gaps exist between the best mills in Argentina and the less efficient mills and also with the best mills in Europe and those in Argentina.

Labour productivity figures of the best mills and the least efficient mills show a wide disparity ranging from 35 OMK (operative minute per kg yarn) and 4,4 OMK and are generally higher than in European mills (average 11 Argentinian mills 15 OMK, average European mills 4,4 OMK).

Weaving

As no detailed data of the structure of this industry exist, we have to limit our comments to the data available.

There were little changes concerning looms installed between 1976 and 1981 (18'000 in 1976; 19'100 in 1983).

The degree of necessary modernisation can be seen from the number of shuttle looms as a percentage of total looms installed, which was 16 in 1979, and one of the highest rate in the world.

The production in MTY ranged between 65'000 MTY in 1975 and 47'000 MTY in 1982.

The average yearly production per loom, as calculated from the available figures was only about 13'600 m2, which is very low. The main weakness of this subsector is, that no detailed data could be made available.

The labour productivity in the mills surveyed by the mission varied widely with an average of about 65'000 weft meters per operative hour. Best mills reached about 150'000 weft meters, which compare favourably with the best mills in Europe.

In the mills surveyed we noticed quite a big productivity gap between the looms installed and the latest equipment available. Even though a considerable number of shuttleless looms are installed, they are in many cases first generation machines and almost 20 years old. In the absence of reliable data no projections about the future investment needs could be made.

There are at present about 3'300 shuttleless looms and 15'000 shuttle looms installed in this sector.

The production calculated for the year 1982 worked out to about 250 Million m2. This production would have been reached with about 2'600 modern shuttleless looms (production 100'000 m2 per loom year).

Processing

The technological level of the processing plants surveyed leaves much to be desired.

Machines in this sector are more obsolete than in the spinning and weaving sectors and big investments will have to be made.

Increasing share of synthetics will also require additional investments.

The following are the age groups of machinery which was surveyed:

- Bleaching machines: 21,8 years
- Mercerizing machines: 18,4 years
- Piece-dyeing machines: 15,0 years
- Printing machines: 13,5 years

Woollen and Worsted Industry

Argentina is the 4th largest wool producer in the world having about 6 % (1981) of the world's greasy wool production. However, it has only a small local woollen and worsted industry of about 348'000 spindles and 5'900 looms (1980).

Most of the wool is exported and in 1981 Argentina had a share of 6 % in the export of virgin wool.

Surprisingly, Argentina has a very small export of wool tops only about 8 Mio kgs in 1980 compared to Uruguay which has an export of 21,1 Mio kgs.

It is proposed that the wool sector is analyzed in a separate in-depth study since during the present study too little data was made available to the mission to come up with comments and recommendations.

Knitting Industry

The machine knitting sector consists of about 250 units with 6000-7000 circular machines. According to trade informations circular weft machines are predominant although there are also flat-bed machines in operation for fully fashioned body garment.

Yarns are supplied by the local spinning industry or are imported in the case of synthetics. No figures on machine utilization and other relevant data could be made available to the mission. 80 % of the plants are said to be located in greater Buenos Aires.

Including garment making this subsector is destinated to employ some 13'000 persons but there are only 4 large integrated companies with employment of 500 - 1'300 persons.

The knitting sector production of fabrics amounts to about 30 % in terms of weight of total domestic fabric production.

Garment Industry

Little information is also available about the garment subsector, although with 30 to 40'000 persons employed in 1'700 plants it has half the size of the textile industry in terms of employment and contributes 0.3 % to the GDP.

The garment industry was a net exporter upto 1979 in value terms and during this year exports were more than 50 % higher as compared to those of the textile industry. After this period garment exports vary between 20 - 30 % of the total textile exports (Exports by product groups see annex).

Almost 87 % of the garment operations with 88 % of total employment are located in the Capital Buenos Aires and the province of Buenos Aires (17 % and 30 %). Cordoba and Santa Fé districts are the only other noteworthy locations of the industry with together 10 % of the plants and 8 % of the employment.

The majority of the plants (48 %) employs 5 workers or less, 43 % of the plants have between 6 and 50 workers and only 4 % of the plants employ more than 100 workers.

Except for the period during 1979/1980 when imports were liberalized, the garment industry depends wholly on the domestic textile industry for the supply of raw material.

Because of the predominantly oligopolistic structure of the textile industry, the garment makers feel that they have only limited influence on the supply of raw materials especially as far as prices, quality, continuity of supply and fashion are concerned. This fact constitutes one of the major problems of the garment industry. The present relation of the two federations representing the textile and garment subsectors appears not to be favourable for creating an environment which would be conducive to solve the above mentioned problems.

Financial Performance of the Textile Sector

The financial performance and status of the textile sector deteriorated during the period from 1979 to 1982. The mills lost money on operations due to increased operating cost and high financial charges. The liquidity position remained precarious or grew worse and the capital structure deteriorated. Return to investment was sub-standard and could not attract investor interest.

One of the most frequent complaints of the mills management was the scarcity of money for the financing of the working capital. Although the ratio, sales to working capital, is not disproportionately high and gives no indication of serious working capital deficiencies, it is in fact the deteriorating current ratio and the testing of the working capital by comparison with long-term debt, inventory and accounts receivable, which point to a critical operational weakness. The major problem will therefore be the financing of the additional working capital at acceptable conditions required to increase sales again which have decreased over the 4 years period from 1979 to 1982 by more than 50 %.

When comparing production cost for typical yarns and fabrics of Argentine mills with world market cost structures and prices, it is obvious that Argentina's comparative advantage of lower wages is more than offset by high financial costs and there is little chance of exporting both yarn and fabrics profitably for the average Argentine producer.

1.3 Strategy Recommendations

The following recommendations are intended to contribute to improving economical viability and the organization of the textile sector in that they address key issues of restructuring needs such as increasing efficiency of present operations, higher capacity utilization, improvement of production methods, composition of output and relocation of plants. Restructuring also includes the phasing out or reviving of sick mills and idle capacities which have suffered from the macro-economic conditions of the past years more than others, while they would have been considered sound on an operational and managerial level. The growth pattern of the Argentine textile industry in the last 15 years clearly reflects the advantages or disadvantages provided by the Government policy and the economic environment. The textile industry like many other sectors has to live today with the handicaps that have developed during these last years as a result of the general economic and monetary conditions of the Country.

The recommendations will be discussed in three parts, first, individual problem areas will be addressed which are common to the majority of visited mills and which could be cured by ad hoc measures within the scope of existing policies.

Second, the need of a textile industry program and other conditions for restructuring will be brought forward.

Third, the necessity for creating institutional arrangements as a prerequisite for a successful implementation of a restructuring program within the Country's overall economic policy framework will be described.

1.31 Specific Problem Areas

In general Argentina's policy vis-à-vis the textile sector has not been constant especially with regard to technically related matters. While we agree that policy recommendations cut across the entire industrial sector, the recommendations given here are made to reflect the particular need of the cotton textile sector only.

Cost of Cotton

In general the cotton price at mill gate corresponds to world markets prices and puts Argentine mills to a disadvantage against competing cotton growing countries. This disadvantage is hardly offset by the available export incentives because of the high financial charges. However, the majority of the questioned mill managers had no complaints on the price and availability of cotton which would be considered adequate once their major concerns which are directly related to high interest, inflation and lack of continuity in the medium- and long-term economic policy of the Government would be solved.

A possible solution could be to make available to eligible mills special credit lines to improve the working capital situation and more specifically credit for the purchase of raw material (cotton) at the right time, which would reduce the cost of cotton to the same level prevailing in competing cotton producing countries.

Cost of Polyester Fibre

Whilst internationally PES/C blended fabrics are the largest and fastest growing segment of the piece good trade, the production of cotton/PES blended fabrics has been neglected in Argentina due to the high price of polyester fibre.

Polyester fibre should be made available to the mills at competitive prices so that the mills can respond to the shift in domestic demand towards blend fabrics (start import substitution). This would also compensate for the short fall in cotton production and release more cotton for exports, if desired.

Import of Spare Parts and Stores

We have said earlier that the textile industry requires a substantial import of spare parts and consumable stores such as card clothing, roller costs, aprons, ring travellers, cans and bobbins, shuttles and pickers, reeds, etc.

Mills should, therefore, be allowed to import free of duty spare parts and stores so that they can keep the equipment in top condition.

The duty free import of drafting systems for ring frames should also be considered.

Dyes and Chemicals

Dyes and chemicals required in textile processing and not manufactured in the country should also be made available duty free.

Import Duty on imported Textile Machinery

Import duty for imported textile machinery should be the same for advanced technology machinery and machines of conventional technology. Only in this way mills can make the optimum choice in buying their equipment. The following examples elucidate the case.

(1) Ringframes / O.E.

The higher duties charged on ringframes and the duty free import of O.E. spindles has led to a disproportional high share of O.E.-spinners to ringspinners (Argentina 7,9 %, South America 3,7 %, World 9 %) which may have caused at least in the initial stages a selection of machinery not in line with optimum product conformity.

(2) Shuttle Looms / Shuttleless Looms

The percentage of shuttleless looms of the total looms installed is the highest in Argentina compared with 11 textile producing countries.

Again this was the result of the then ruling import policy which excluded shuttleless looms from import duty. The bigger percentage of wide, shuttleless looms is certainly today one of the biggest comparative advantages of the cotton weaving sector. Eventhough at the time they were installed the shuttle technology may have been a more economic proposition considering the wage level then existing in the country- As a matter of import duty policy, mills should have the free choice in future to import those machines which are best suited for a particular set-up both from a technical and economical point of view.

Decentralization of Textile Industry

The Government should continue to make the shifting of plans from Buenos Aires to less developed areas attractive.

But it should be investigated, if the present method of giving mills the benefit of not paying value added tax could be changed to a system which creates less distortion in the market.

Weaving

In order to propose an overall strategy for the textile industry it is essential that exact data are available about the number of looms installed within the organized sector and unorganized sector.

It is, therefore, proposed that immediately a study is initiated with the object to create a data base for the weaving sector.

1.32 Textile Industry Program

In contrast to ad hoc remedial measures an overall industry program, as a package in the context of and in conformity with the Country's general economic policy, has definite advantages. Establishing and implementing such a program calls for the involvement of both the government and the industry. In general terms such a program would align the industry more closely with the Country's comparative advantage by removing certain disincentives caused either by the political and economic environment or by structural and organizational deficiencies of the industry itself. On the basis of the present study it can safely be assumed that the textile industry in Argentina has a continuing advantage under normal conditions through the combination of relatively low labour costs, available raw material sources and sufficient technological know-how.

The conditions for an effective rehabilitation of the industry are the ability of the Government to formulate a feasible restructuring policy within the framework of a general industrial policy which is accepted for implementation by the mill management in co-operation with the Government and its agencies. This also includes the closure of non-viable operations and revival of ailing mills with reasonable efforts and the presence of a suitable and efficient institute or agency representing both the industry and the Government. The role of such institution would be to advise and co-ordinate in design and implementation of such a programme (1).

(1) Aims of the program

- plan for phasing out, reviving and/or merging mills on basis of a mill to mill investigation
- structuring of output as regards specialization, output mix, improvement of efficiency and quality through testing and training programs

(1) The discussion of the textile industry program is based on a World Bank Staff Working Paper N° 558 Feb. 1983 "Restructuring of Manufacturing Industry", the experience of the textile industry.

(2) Contents of Program

- Updating or stock taking of presently not available industry data, e.g. size, structure, capacity etc. of subsectors such as cotton weaving, processing, wool industry, knitting and garment industry.

- Replacement, expansion and rehabilitation plans.

- Provide technical assistance for the preparation and implementation of program.

(3) Institutional Arrangements

- Establish, adapt and staff a project unit, agency or institute to help formulate and implement the program.

(4) Related Policy Measures

- Design and recommend incentives in conformity with macro-economic policy and investment program as regards pricing, export incentives, import policy, investment and financial incentives.

As an example for the contents of a program (2) outlined above a possible target for the cotton spinning is summarized as follows:

Idle Spindles

In 1981 there were about 257'000 spindles out of a total of 1'015'000 spindles not in operation. No exact data exist about the mechanical condition of this equipment and if there is a possibility to to rehabilitate them. If one considers that the buildings are available the 250'000 spindles, if replaced, would cost about 75 Mill. US$. This could be a first step towards an expansion of the cotton spinning sector.

The 250'000 spindles would produce on the basis of the 1981 average output per spindles an additional 15'000 t of yarn.

Modernization of Spinning Sector

Based on the age-structure established during this study it appears prudent to propose that at least 5 - 10 % of the spindles in operation in 1981 (about 750'000) should be replaced yearly. If we assume an integrated replacement, i.e. from blow room - winding about US$ 300/spindle would have to be spent resulting in a yearly investment requirement of 10 - 20 Mill. US$ per year.

1.33 Institutional Arrangement

It is generally accepted that the institutional arrangements are essential for a successful preparation and implementation of an industry program. The selected arrangement must also account for the fact that the textile industry in Argentina is privately owned and has to represent the interests and decisions of the private entrepreneurs in the preparation and implementation of plans on the individual mill level as well as in matters of general economic policy.

The only existing institution in Argentina serving the textile industry is the Textile Research Center (C.I.T.) which has been established by I.N.T.I (State Research Institute) as one of eleven research centers for other industries. The I.N.T.I. and its research centers are wholly financed by the State, although industrial organizations and groups have some influence in the organization and operation of the centers.

Inspite of the fact that the research and development activities of C.I.T. have hitherto been accepted by the industry on a relatively small scale only, it is recommended to direct the future activities of C.I.T. towards taking a leading and co-ordinating function in the preparation and implementation of a textile industry program outlined above. This would of course mean that the organization and staffing of the C.I.T. which presently could only be considered a nucleus for such development would have to be adjusted accordingly, to enable the spreading of the scope of activities in the indicated way. The Center employs presently about 12 - 15 persons mainly in a technical and a chemical department which are equipped with testing machinery for dyeing, fibres and yarns including a workshop for spinning.

Another important conditions for the functioning of the Center and its future proposed role, is the establishing of a closer linkage with the industry. A possible solution to this question is to set up an advisory board composed of representatives of the Government, I.N.T.I. and private industry which would decide on and supervise the work program of the Center within the approved budget. This mechanism would more deeply involve the industry and contribute to overcome certain barriers which seem to exist at present.

It would be worthwhile to consider the possibility of establishing as sub-centers or as separate units also institutes for the knitting and garment industries where the initiative and financing at least to some extent should come from the industry itself. It is hoped that such a reorientation of organization and activities would provide a more effective basis to cope with new technological development especially related to electronic applications and increasing share of new synthetic fibres in the textile and garment industries.

The new proposed activities would have to start with modest assignments to gain confidence and to convince the industry. Organized in such manner the Center could well be the nucleus and right place to contribute effectively to the restructuring of the industry.

Apart from taking a leading part in preparing and implementing a textile industry program including sector information, structural plans, trade and market information and policies, the Center should continue to help the industry to improve efficiency through adequate training programs which are spelled out below.

Training

We have said earlier that C.I.T. has appropriate facilities and resources and could be the organizational home for the training and retraining of various categories of employees to increase their competence and give them access to more formal training as is available at present.

(1) Training of Operative Instructors

To train the instructors of the existing mills so that they may improve their training methods for green hands and old operatives.

(2) Supervisors, Spinning/Weaving

To upgrade their technological knowledge and train them especially in diagnosing and interpreting faults at the machinery level as well as with regard to product quality.

(3) Textile Testing Exports/Quality Controllers

To train the trainees with the objective of making them acquainted with the principles and use of various testing equipment, calibration of equipment, statistical methods of quality control, analysis and interpretation of test results. Also inform them about international standards of product quality (USTER data, etc.).

(4) Chief Mechanics/Spinning/Weaving

To train them in machine maintenace practises. Relationship between machines maintenance and product quality.

(5) Supervisors Processing

To upgrade the skills of the supervisors of the various sections (bleaching, dyeing, printing, etc.).

(6) Quality Control Processing

Toteach the existing staff in advanced methods of quality control.

(7) Industrial Engineering

To give training with regard to work study in spinning, weaving, processing.

(8) Production Planning and Control System

To train the existing personnel in modern methods of production planning and control.

Establishment of Consulting Service

To assist firms, particularly smaller firms to improve their production capability, the setting-up of a mill consultancy and trouble shooting service for the textile industry is recommended.

Its major objectives would be:

(a) To provide a diagnostic service to firms to help them identify operational problems that are constraining production and reduce quality and to prepare appropriate action programs to deal with those problems.

(b) To develop a small cadre of trained consultants to provide a core of industrial engineering and technical services.

(c) To act as a focal point for identifying and procuring specialist services from outside Argentina to supplement locally developed skills.

This program could begin with a core of 2 foreign experts with a counterpart team of 4 - 6 local experts.

The services should be supervised by an agency that can ensure that good experts can be recruited for this assignment.

Inter-Mill Comparison

Since much secrecy exists in the textile industry with little exchange of data, a neutral inter-mill comparison system like the European inter-mill comparison system should be started to allow the mills to compare their performance with the market leaders.

2. REVIEW OF TEXTILE INDUSTRY STRUCTURE AND PERFORMANCE

2. REVIEW OF TEXTILE INDUSTRY STRUCTURE AND PERFORMANCE

The manufacturing industry in Argentina contributed during the last 10 years until 1981 between 28 % and 22 % to the Gross Domestic Product as against 25 % from services and 13 % agriculture, and employs about 960'000 persons in 35'000 establishments.

The textile sector accounts of 10 % of the manufacturing industries in terms of contribution to the GDP at factor cost at constant 1970 prices and employs about 130'000 persons in 5'000 factories. These figures include, however, the leather and shoe industry which account for 28'000 employees and 1'500 factories. The textile industry itself (spinning, weaving and processing in cotton and wool system) accounts for 70'000 people in 1'800 manufacturing units, while the garment industry employs about 33'000 persons in 1'700 units. The actual contribution to the GDP is, therefore, 1,6 % for the textile and 0,3 % for the garment industry.

Both the textile and garment industry have lost more than 50 % of personnel employed during the last 5 years which reflects the general economic development during this period when many companies closed down, but is also an indication of increased average productivity of those who remained in the market, as the manufacturing output decreased only by about 30% in textiles and 50% in garments.

The performance of the textile industry like most of the other sectors has to be seen in light of the overall financial and economic policy of the country during the past years. Although Argentina is a resource-rich country with abundant natural resources and human capital, the economy nearly collapsed in 1975 after a period of an expensive growth strategy with strong protection of domestic industry and a high share of state participation in all areas of econimic activities. A traditional large export sector could compensate for the costly inward-looking strategy for some time, but distor-

tions in relative factor prices and losses of public enterprises led to an economic crisis with a high public sector deficit and an inflation rate in the order of 400 % p.a. In the following period from 1976 to 1978 new governments introduced stabilization measures aimed at reducing inflation and restructuring the economy with improved utilization and allocation of resources. Some positive results were achieved, such as reduction of the inflation rate to 150 %, an expansion of exports and an increase of domestic savings.

After 1978 this policy was pursued and a strategy of increased liberalization introduced by means of a reduction of the import duties and the pre-announcement of exchange rate adjustments well below the current rate of inflation. It was intended that import competition would thus prevent domestic producers from asking excessively high prices.

By the end of 1981 it was obvious that this policy failed for a number of reasons but mainly because of inconsistencies and contradictions in the overall implications of the stabilization policy measures. As a result of the Government's exchange rate policy, the peso was grossly overvalued causing a dramatic growth of imports and a decrease of exports. This reduced the market potential for the domestic producer, while the rising real interest rate made investments expensive and risky and increased the producers' cash flow problems. On the other hand the domestic input cost rose and this reduced the producers' competitiveness for exports and on the domesitc market vis-à-vis the "cheap" imports. Further the economic crisis culminated in bankruptcies and in a critical financial situation of even the strongest companies, capital outflow instead of investments and a general loss of public confidence.

At the beginning of 1982 a new Government took a series of measures including freezing public salaries and tariffs, floating the peso and reorganizing the exchange market, while the import tariff reduction program and the exchange rate policy (tablita) had already been abandoned in April 1981.

First results of economic recovery, i.e. reduction of inflation and public deficit, increase of export and decrease of imports were recorded in early 1982, but came to a halt at the beginning of the Malvinas war.

The policy was continued after the hostilities, but throughout 1983 the industry did not regain confidence, mainly because of the general atmosphere of uncertainty and lack of a consequent, realistic, well balanced and determined Government programme towards economic stabilization and recovery.

This has been explained at some length at the beginning, because it became obvious during the course of the study that the basic problems of the textile industry were the environmental economic conditions rather than inherent structural and technical problems which most of the industrialists feel confident could be satisfactorily solved through their own efforts.

Sources: Central Bank. Datos básicos de la Industria Manufacturera, Dirección General de Información Industrial (May 1983)

Argentina 1983 Economic Memorandum World Bank Report No. 4513 AR

2.1 Structure of the Argentinian Cotton Textile Industry

The Argentinian Cotton Textile Industry is characterized by a nucleus of large sized integratedcompanies. Additionally there are a considerable number of medium and small sized plants.

All plants are privately owned.

None of the Argentinian companies is listed in 1981 under the 250 International Textile Companies having sales in excess of US$ 50.5 Million.

However, at least 2 Argentinian groups qualify to be included in this group, but since only consolidated balance sheets are published by these groups the fact goes unnoticed.

2.11 Spinning

No details could be made available to the mission about the degree of integration of specialization of the various plants on a country wide basis. In other words it was not possible to assess which companies are spinning mills only, or which are integrated with weaving and processing plants. The presently installed number of spindles of about 1 Million represents approx. 0.7 % of the world spindle capacity.

2.111 Size of Spinning Plants

2.1111 Ringspinning

According to S.E.A.G. there were in 1981 spinning mills with a total of 1'014'568 spindles. This would mean an average plant size of about 19'900 spindles.

The number of establishments was 62 in 1978 and 53 in 1981,a reduction of about 15 %. The number of spindles in 1978 was 1'145'562. The reduction of spindles installed between 1978 and 1981 was about 131'000

Out of the 53 plants in 1981, 35.8 % or 19 plants had between 10'000 and 20'000 spindles.

62.3 % or 33 plants had spindles between 2'500 and 20'001 spindles. 16 companies or 30.9 % of the total spindles installed were in mills with 20'001 - 40'000 spindles.

Again we can see that the spinning industry is characterized by small and medium sized plants.

This is not a disadvantage when the small size is combined with coarse count-spinning and a high degree of specialization (i.e. few counts and few mixings).

2.1112 O.E. Spinning

In 1981 there were 22'296 O.E. rotors installed in 23 companies.

The O.E. installations are mainly installed together with ring spinning plants and can also be termed small sized plants. About 65 % of the rotors are installed in 15 plants having between 250 to 750 rotors. Only 5 plants have more than 1'500 rotors.

2.112 Geographic Distribution

2.1121 Ringspinning

The geographic distribution shows a heavy concentration of the spinning activity in the capital of Buenos Aires,GreaterBuenos Aires and the Province of B.A. where 71 % of all ring spindles are installed. The second most important province is Tucuman where about 10 % of the ring spinning capacity is installed.

2.1122 O.E. Spinning

Quite in contrast to the geographic distribution of the ring spinning spindles, O.E. rotors show a more healthy spread over the country. Only about 35 % of the rotors installed are in Buenos Aires, Greater Buenos Aires and the province of Buenos Aires. 65 % are divided between 5 Nothern provinces with a heavy concentration (35 %) in the cotton growing province of Chaco.

This is expected since many rotors were installed in the new plants which moved up-country to benefit from the incentives given by the Government.

2.113 Development of Installed Capacity

2.1131 Ring Spinning

The installed capacities in cotton ring spinning showed very little change in the 25 years as the following comparison shows:

1960:	1'038'378
1970:	1'070'756
1980:	1'075'986
1981:	1'014'568
1982:	1'125'000

Source: 1960 - 1981 S.E.A.G.
1982 F.I.T.A.

The ring spindle capacity is about 12.5 % of the ring spindles installed in South America.

2.1132 O.E. Spinning

O.E. spinning capacity increased from 1'500 rotors in 1976 to 22'296 rotors in 1981 and represent about 26 % of the rotors installed in South America.

Therefore, the overall installed spinning capacity between 1960 and 1982 increased by an equivalent of 175'806 ring spindles only.

(1960: 1'038'378 ring spindles, 1982: 1'125'000 ring spindles = + 86'622, and 22'296 rotors x 4 = 89'184 ring equivalent. Total 86'622 + 89'184 = + 175'806).

The installed capacities compare well with other South American countries and are about 0.04 spindles per capita.

The ratio of O.E. rotors to ring spindles is very high at about 7.9 % and well above the South American average 1/ of 3.7 % and almost as high as the world average of about 9 % (calculated at a ring equivalent of 4 spindles per rotor).

1/ Total number of spindles installed in 1981 according to ITMF 8'946'000 ring spindles and 84'000 rotors.

2/ Total number of ring spindles 158'251'000 and rotors 3'599'000.

The high percentage of O.E. machinery is certainly a reflection of the import-duty policy which allowed some years ago duty free imports of O.E. machines but not ring spinning frames.

2.1133 Ring Spindles Installed between 1974 - 1981

It is interesting to compare Argentina with other countries with regard to the new ring spinning machinery installed in the years 1974 - 1981 on the basis of data published by ITMF in Zürich.

The table on the next page shows that only 15.8 % of the spindles installed up to 1980 are 7 years old and less compared to 60 % in Korea, 33.1 % in Brazil, 36 % in Italy and 27 % in Peru. Only the smaller countries of South America have invested less than Argentina.

The replacement value of the spindles installed amounts to about 500 Million US$ (plant and machinery).

Table Nr. 2.1133

Ringspindles installed between 1974 and 1981
as % of installed capacity in 1980

No.	Country	%	No. of Spindles installed 1974 - 1981
1	Korea	60,0	1.925.000
2	Bolivia	52,9	27.240
3	Indonesia	52,8	1.078.288
4	Italy	36,0	1.169.553
5	Brasil	33,1	1.601.802
6	Greece	32,8	470.000
7	Peru	27,2	194.064
8	Taiwan	21,0	714.598
9	Spain	20,4	440.769
10	West Germany	18,3	442.827
11	Mexico	18,3	625.896
12	Equador	16,6	31.660
13	Argentina	15,8	178.866
14	Portugal	10,5	192.326
15	Columbia	9,2	84.912
16	Chile	7,5	31.666
17	France	7,0	154.504
18	USA	3,7	647.613
19	Uruguay	2,6	4.872
20	World Total	13,0	21.768.693

2.114 Production

2.1141 Ring Spinning

The cotton spinning sector showed a mixed performance especially in the last years. Production from ring spinning dropped from an alltime height of 97'894 MTY in 1976 to 61'443 MTY in 1981.

The table on the following page shows the ring spun production between the years 1972 and 1981.

The table shows, that about 80 - 83 % are carded counts with an average count of about Ne 14 and about 17 - 20 % are combed counts with an average count of about Ne 30.

The overall average count remained stable at around Ne 17.

To give a comparison the average counts of few European countries are given as follows (1976):

- Switzerland	Ne 32
- Italy	Ne 24
- Germany	Ne 21
- France	Ne 20
- Finland	Ne 17

However, it should be noted that in contrast to Argentina all of the above countries have considerable imports which cover mainly the coarser counts required.

Spinning Production 1972 - 1981

RING SPINNING

Year	Carded		Combed		Total	Average Yarn Count Ne		
	kg	%	kg	%	kg	Card.	Comb.	Overall Total
'72	74.178.249	83,4	14.770.940	16,6	88.949.195	14,50	31,12	17,26
'73	69.724.811	81,9	15.126.020	18,1	35.150.831	14,60	32,20	17,70
'74	71.655.242	80,0	17.969.009	20,0	89.624.251	14,12	31,29	17,57
'75	72.378.886	80,3	17.711.836	19,7	90.090.724	14,36	31,57	17,74
'76	81.347.347	83,1	16.547.089	16,9	97.984.436	14,13	32,06	17,16
'77	78.996.838	83,7	15.423.723	16,3	94.120.561	14,19	31,91	17,08
'78	70.000.027	81,8	15.572.202	18,2	85.572.220	14,97	30,47	17,79
'79	72.612.321	80,6	17.482.405	19,4	90.094.726	14,80	31,37	18,02
'80	61.822.547	82,5	13.127.151	17,5	74.949.698	14,89	30,82	17,68
'81	49.794.424	81,0	11.649.336	19,0	61.443.760	14,86	29,89	17,71

Source: S.E.A.G.

O.E. SPINNING 1976 - 1981

Year	Yarn Production in kg	Running Rotors	kg per Running Rotor	Effective Rotor Hours	Grams per Rotor Hour Effective
'76	1.489.267	504	2.954,9	2.729.664	545,5
'77	8.045.135	8.476	949,2	34.265.207	234,8
'78	13.392.824	14.961	895,2	68.089.299	196,7
'79	16.685.792	16.950	982,7	94.829.945	176,0
'80	17.878.945	18.787	951,7	96.156.592	185,9
'81	17.282.875	19.641	897,9	87.519.075	197,5

Source: S.E.A.G.

2.1142 O.E. Spinning

The production of O.E. spinning was about 16'000 - 17'000 t/year.

2.1143 Combined Production Ring and O.E.

The combined production for the yarns 1979 to 1981 was as follows (in MTY):

year	ring	O.E.	ring & O.E.	% of O.E.
1979	90'094	16'685	106'775	15.6 %
1980	74'949	17'878	92'827	19.2 %
1981	61'443	17'282	78'725	22 %

2.1144 Product Mix

Yarns made from cotton/polyester or rayon/polyester blends account for only 5 % of all yarns produced.

The percentage of blends went down considerably on the years as the following comparison shows:

1976	1977	1978	1979	1980	1981	1982	year
7.1	9.6	8.4	12.8	6.9	12.1	5.2	

2.115 Capacity Utilization

(1) Active Ring Spindles

From the 1'015'092 spindles installed in 1981 (according to S.E.A.G.) about 257'625 spindles were not in operation resulting in 757'467 active spindles only.

(2) Active Rotors

Out of the 22'296 rotors, 2'655 were out of operation resulting in 19'641 active rotors.

(3) Operating-Hours/Year Ring Spinning

The average operating hours during the years 1972 and 1980 were 5'437 hours/year. In 1981 this figure was only 4'836.2.

(4) Theoretical Spindle -Hours Ring Spinning (1981)

Based on the active spindles and the annual operation hours (3) x (1) the theoretical spindles hours work out to 3'663'243'095.

(5) Effective Spindle-Hours Ring Spindles

The effective spindle hours according to S.E.A.G. were 2'994'375'928 resulting in a spindle utilization of about 81 % (5) : (4) x 100.

(6) Spindle Utilization

The spindle utilization 1972 - 1982 showed the following decline:

Year	1972	73	74	75	76	77	78	79	80	81
S.U.%	90.9	91.9	91.7	89.9	90.4	87.7	85.9	85.5	86.1	81.6

and was lowest in 1981.

(7) Operating Hours/Year O.E. Rotors

The operating-hours/year for O.E. between 1976 - 1980 were 5'673 on an average. In 1981 this figure was only 5'210.

(8) Theoretical Rotor-Hours

Based on the operating hours of 5'210 in 1981 the theoretical operating hours worked out to 87'519'075 resulting in a rotor utilization of 85.8 %.

(10) Rotor Utilization 1976 - 1981

Year	1976	1977	1978	1979	1980	1981
RU %	87	85	85	89	88	85

2.12 Weaving

In contrast to the spinning sector which in certain areas has in our opinion been "overstudied" with the result that a multitude of similar figures are available from different sources, the available data on the weaving sector is very limited.

Apart from the organized mill sector there exists a sub-sector in which weaving is done in small plants. However, no data is available and the mission could not find out whether or not this sector is an efficient provider of cloth. Also the extent to which the organized mill sector is in competition with this sub-sector could not be evaluated. Further, no data was available to assess if there is production specialization in the two sectors or if they produce the same product mix and if they sell to the same market segment or not.

We were told that F.I.T.A. will look into the matter and start with an analysis of the weaving sector.

2.121 Size of Weaving Plants

According to an estimate which was made by F.I.T.A. on the request of the mission, it was estimated that the number of weaving establishments in the country is around 600. With the 19'100 looms installed this would result in an average plant size of 32 looms.

2.122 Geographical Distribution

No detail exist about the geographic distribution of the looms in the country.

2.123 Development of Installed Capacity

According to data published the weaving sector showed the following development with regard to looms installed:

Year	1976	1977	1978	1979	1980	1981
N° of looms installed	18'800	19'000	19'000	19'200	19'100	19'100

The installed capacity of the weaving sector changed also very little over the last years being 18'800 in 1976 and 19'100 in 1983.

The number of shuttleless looms (according to ITMF) was 3'300 in 1979 or about 16 % of the capacity installed.

This is much above the other South American and some selected countries which show the following degree of modernisation:

Number of active shuttle-less looms (1979)

Country	Shuttle Looms	Shuttle less Looms	SLL AS % of S-looms
Argentina	19.800	3.300	16,6
Brasilia	72.600	1.515	2,0
Columbia	15.050	895	5,9
Equator	3.000	350	11,6
Peru	8.900	320	3,5
Chile	6.900	220	3,1
Mexico	40.200	3.500	8,7
U S A	188.416	35.332	18,7
West Germany	34.129	3.600	10,5
Italy	39.957	5.732	14,3
Korea	73.567	1.500	2,0

Source: ITMF

Again as in spinning, the import-duty policy of the Government favoured certain technologies, in this case the import of shuttleless looms. Mills should, however, have the option to buy what is best for a particular application, be it shuttle looms or shuttleless looms.

At present, however, the discussion is academic since all the major Western loom-makers have stopped making shuttle looms.

2.124 Looms Installed between 1971 and 1981

As in spinning we compare Argentina with other countries with regard to the new shuttle looms and shuttleless looms installed between 1974 to 1981 on the basis of dates published by ITFM in Zürich.

Shuttle Looms

The table on the following page shows that in Argentina only 3.5% of the shuttle looms installed are 7 years old and less. This is the lowest % between 13 countries.

Shuttleless Looms

As regards shuttleless looms Argentina compares favourably with 11 other countries having 57.75 % of its shuttleless looms in the age group of 1 to 7 years.

2.1241 Shuttle Looms Installed between 1974 and 1981 as % of Installed Capacity in 1980

N°	Country	%	N° of Looms installed between 1974 and 1981
(1)	Japan	24.9	25'942
(2)	Korea	23.7	21'337
(3)	India	32.3	16'381
(4)	Indonesia	34.6	15'354
(5)	Taiwan	32.8	12'963
(6)	USA	5.6	9'661
(7)	Brazil	11.2	8'339
(8)	Italy	10.4	3'840
(9)	Germany	10.9	3'022
(10)	France	8.9	2'166
(11)	Turkey	10.4	3'398
(12)	Spain	12.8	2'681
(13)	Argentina	3.5	655

2.1242 Shuttleless Looms Installed between 1974 and 1981 as % of Installed Capacity

N°	Country	%	N° of Looms installed between 1974 and 1981
(1)	USA	66.6	25'767
(2)	Italy	100	10'037
(3)	Japan	64	9'280
(4)	Germany	100	8'665
(5)	France	98	7'128
(6)	Mexico	47.1	5'137
(7)	Taiwan	41.1	3'556
(8)	Brazil	100	2'348
(9)	Korea	100	2'034
(10)	Argentina	57.75	1'848
(11)	Columbia	100	1'305

2.125 Production

According to F.I.T.A. the weaving sector showed the following production over the last 6 years:

Year	1976	1977	1978	1979	1980	1981	1982
Prod. in MTY	62'325	63'125	55'760	65'876	55'705	47'265	47'060

No data exists about the product mix produced, the average width and the weight of the fabrics. It was agreed with F.I.T.A. to estimate the average weight at about 180 g/m2.

Based on the production of 1982 the following calculation can be made:

- Total production 1982: 47'060 MTY
- Average weight/m2: 180 g
- Total m2/produced in 1982: 261 Mill. m2
- Total N° of looms installed: 19'100
- m2/loom/year 13'600 m2

13'600 m2/loom and year is an extremely low figure.

If one considers that a modern shuttleless loom can produce about 100'000 m2 per year the entire production could have been made on 2'600 shuttleless looms. Obviously there is a need to investigate the weaving sector in more detail.

2.126 Capacity Utilization

If we consider the following parameters, we can estimate the presently installed weaving capacity:

- N° of looms installed: 19'100
- Average p.p.m.: 180
- Average picks/cm: 20
- Average loom-hours per year: 5'400 (as in spinning)
- Average Overall Efficiency: 80 %
- Total production/year: 445 Mill. m2 (23'328 m2/loom)

present production at 13'600 m2/loom per year is about 58 % of the installed capacity.

2.13 Processing

There are 6 major commission processing houses located in the country which account for about 60 - 70 % of the commission finishing market for cotton, blends and synthetics. There are also a number of small sized plants;the exact number and their equipment are not known.

The plants have no problems in obtaining their dyes and chemicals both from local and foreign manufacture.

According to the industry sources the installed printing capacity can be estimated to be about 10 Mill. m2, and the bleaching and dyeing capacity about 150 Mill. m2.

The processing plants which are integrated with the spinning and weaving plants were found to be up-to-date ranging from open width bleaching to screen printing and Indigo dyeing ranges.

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2.14 Geographic Distribution and Government Policy

The heavy concentration of the industry in the Federal Capital of BA and in the area of Greater BA has historically developed as a consequence of the dramatic population growth in this area resulting in abundant supply of labour and proximity to the largest market of the country with more than one quarter of the country's inhabitants.

The Government has embarked on a policy of decentralization for social and infrastructural reasons which provides incentives for the relocation of existing and establishment of new mills in certain provinces in the interior of the country.

The major advantages provided by the incentive system are tax holidays concerning value added tax (20 %) and corporate tax as well as exemption from duties on imported machinery and equipment. It is specifically the first incentive that has given cause for concern, since it offers a clear cut price advantage of 20 % against all competitors outside the incentive area which is no way related to the profitability of the operation.

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3. PATTERN OF TEXTILE CONSUMPTION

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3.1 Fibre Balance

A fibre balance for Argentina has been compiled from official [1] sources for the period from 1975 to 1982. During this period the per capita consumption fell from 6,6 kg p.c. to 4,2 kg p.c. reflecting the development of the contracting market in a recessive economy. This period is caracterized by a gradual decline in the production of yarns and fabrics (151 000 tons of yarn to 120 000 tons and 175 000 tons of fabric to 122 000 tons) which was only partially offset by drastically increasing imports during 1980/81 of garments from 400 tons in 1978 to 13 000 tons. At the same time exports decreased by half between 1978 and 1982. Tables 3.1/1, 2, 3, 4, 5 and 6 give a complete breakdown of this development for all sub-sectors and types of fibres.

1) INDEC, Import-Export Statistics, FITA.

Balance of Fibres, Yarn and Fabrics

Table No. 3.1/1

Year: 1975	Cotton		Wool (base clean)		Regenerated fibres		Synthetic fibres		Other	
	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'
Domestic fibre production	171 700		52 949		7 194		19 746			
- Imports	9 514	22 978	18	101	-	-	579	1 134		
- Exports	65 806	40 539	35 328	54 141	-	-	15	37		
Available fibres	115 408		17 639		7 194		20 310			
Domestic yarn production	90 091		28 200		6 384		26 214			
- Imports	114	658	20	129	2	12	904	5 071		
- Exports	6	13	43	239	-	-	10	20		
Yarn available	90 199		28 177		6 386		27 108			
Domestic cloth production	90 000		33 800		15 960		34 952			
- Imports	101	449	3	64	-	-	32	255		
- Exports	91	608	9	183	-	-	38	46		
Cloth available for garment production	90 010		33 794		15 960		34 946		Garment Tons	Total Value
Garment imports									239	640
Garment exports									612	1 251
Population	26 266 000									
Per capita consumption	6,64 kg total									

Balance of Fibres, Yarn and Fabrics

Table No. 3.1/2

Year: 1978	Cotton		Wool (base clean)		Regenerated fibres		Synthetic fibres		Other	
	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'
Domestic fibre production	220 300		46 911		3 813		16 971			
- Imports	3 342	7 788	1	9	-	-	997	2 214		
- Exports	156 881	152 240	41 367	120 140	1	9	364	595		
Available fibres	66 761		5 545		3 812		17 604			
Domestic yarn production	93 556		20 505		3 293		22 262			
- Imports	174	631	34	264	3	46	218	878		
- Exports	9 896	21 938	1 324	7 894	-	-	521	1 334		
Yarn available	83 834		19 215		3 296		21 959			
Domestic cloth production	87 510		19 230		7 965		28 750			
- Imports	80	856	103	1 718	-	-	129	1 383		
- Exports	1 756	6 318	989	9 412	-	-	69	710		
Cloth available for garment production	85 834		18 344		7 965		28 810		Garment Tons	Total Value
Garment imports									371	4 933
Garment exports									1 610	35 273
Population	27 568 000									
Per capita consumption	5,08 kg total									

Balance of Fibres, Yarn and Fabrics

Table No. 3.1/3

Year: 1979	Cotton		Wool (base clean)		Regenerated fibres		Synthetic fibres		Other	
	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'
Domestic fibre production	173 700		39 942		4 731		22 720			
- Imports	15 321	20 477	5		462	771	6 360	12 256		
- Exports	69 315	74 198	31 639		123	119	14			
Available fibres	119 706		8 308		5 070		29 066			
Domestic yarn production	109 170		17 000		3 688		19 045			
- Imports	495	2 169	128	1 323	227	772	939	4 364		
- Exports	2 615	7 645	146	1 399	67	336	462	1 538		
Yarn available	107 050		16 982		3 848		29 522			
Domestic cloth production	101 070		16 430		8 646		36 324			
- Imports	2 898	17 922	697	6 357	430	4 561	2 773	26 118		
- Exports	466	2 296	723	8 199	4	50	57	662		
Cloth available for garment production	103 502		16 404		9 072		39 040		Garment Tons	Total Value
Garment imports									4 051	12 902
Garment exports									772	33 670
Population	28 013 000									
Per capita consumption	6,11 kg total									

Balance of Fibres, Yarn and Fabrics

Table No. 3.1/4

Year: 1980	Cotton		Wool (base clean)		Regenerated fibres		Synthetic fibres		Other	
	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'
Domestic fibre production	145 400		39 813		1 512		13 506			
- Imports	12 494		150		674		7 190			
- Exports	98 231		36 446		110		294			
Available fibres	59 663		3 517		2 076		20 402			
Domestic yarn production	80 990		14 405		1 989		21 527			
- Imports	288		195		1 290		3 826			
- Exports	6 075		236		263		433			
Yarn available	75 203		14 836		3 016		24 920			
Domestic cloth production	85 410		13 400		3 350		28 945			
- Imports	4 171		276		909		7 478			
- Exports	908		127		2		12			
Cloth available for garment production	88 673		13 549		4 257		36 435		Garment Tons	Total Value
Garment imports									12 902	
Garment exports									595	
Population	28 500 000									
Per capita consumption	5,45 kg total									

Balance of Fibres, Yarn and Fabrics

Table No. 3.1/5

Year: 1981	Cotton		Wool (base clean)		Regenerated fibres		Synthetic fibres		Other	
	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'
Domestic fibre production	85 000		52 309		-		8 743			
- Imports	19 526	40 542	69		1 198	2 232	6 175	13 877		
- Exports	23 089	29 327	45 196		-	-	381	1 323		
Available fibres	81 437		7 182		1 198	2 232	14 537			
Domestic yarn production	79 096		13 355		1 028		15 976			
- Imports	241	1 015	108	1 397	1 052	3 945	4 193	16 371		
- Exports	2 397	6 984	472	5 071	26	182	343	2 442		
Yarn available	76 940		12 991		2 054		19 826			
Domestic cloth production	76 590		13 205		3 361		23 389			
- Imports	4 221	35 639	172	3 733	810	7 013	7 252	62 610		
- Exports	1 381	6 785	57	1 041	6	53	25	327		
Cloth available for garment production	79 430		13 320		4 165		30 616		Garment Tons	Total Value
Garment imports									13 357	175 696
Garment exports									363	7 972
Population	28 926 000									
Per capita consumption	4,86 kg total									

Balance of Fibres, Yarn and Fabrics

Table No. 3.1/6

Year: 1982	Cotton		Wool (base clean)		Regenerated fibres		Synthetic fibres		Other	
	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'	Tons	Value US$ 000'
Domestic fibre production	148 600		45 014		-		12 705			
- Imports	10 397	13 169	-		1 235	2 351	9 554	18 891		
- Exports	69 150	69 432	34 946		-	-	355	1 076		
Available fibres	89 847		10 068		1 235		21 904			
Domestic yarn production	86 488		15 350		1 070		17 285			
- Imports	170	966	107	1 386	1 104	4 501	3 095	12 955		
- Exports	4 221	11 838	535	4 175	-	-	639	2 716		
Yarn available	82 437		14 922		2 174		19 741			
Domestic cloth production	79 075		14 162		3 892		24 621			
- Imports	508	4 343	146	3 380	265	2 225	3 026	19 876		
- Exports	3 147	10 755	126	1 765	42	310	55	731		
Cloth available for garment production	76 436		14 182		4 115		27 592		Garment Tons	Total Value
Garment imports									2 090	27 355
Garment exports									692	6 312
Population	29 392 000									
Per capita consumption	4,20 kg total									

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A comparison of the types of fibres consumed indicates the predominance of cotton which increased from 51% in 1975 to 61% in 1982 caused by the problems of the synthetic fibre producing industry, foreign exchange scarcity and price developments.

Apparent p.c. consumption in kg

	Cotton	Wool	Reg. fibre	Synthetic fibre	App. net import	TOTAL
1975	3,43	1,28	0,61	1,33	- 0,01	6,64
1982	2,60	0,48	0,14	0,94	0,04	4,21

The largest decrease in consumption during this period was for regenerated fibres (335 %) and wool (167 %) followed by synthetic fibres (41 %) and cotton (32 %) resulting in an average reduction of p.c. consumption of 58 %.

With a share of 28 % of regenerated and synthetic fibres production compared to cotton in 1979 the country appeared to have nearly achieved self-sufficiency. This percentage fell below 20 in 1981 of which more than 70 % were imported as against 28 % in 1979. In restoring the 1975 p.c. fibre consumption level, the synthetic fibres will play a key role and increase more than proportionally once a successful rehabilitation of the domestic synthetic fibre industry has been accomplished.

With an average cotton fibre production of 160 000 tons p.a. Argentina ranks tenth among the world's cotton producing countries. The domestic textile industry consumes on an average 100 000 tons p.a. while the rest is exported. Imports of mostly long staple cotton fibre amount to only 6 % of the yearly domestic consumption.

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Argentina - Cotton Fibre Production and Consumption [1]

000 tons

	1976	1977	1978	1979	1980	1981	1982
Production	139,5	160,0	220,3	173,7	145,4	85,0	148,6
Imports	3,3	6,5	4,5	10,2	8,3	20,1	12,5
Consumption	117,2	113,7	102,2	110,5	92,3	75,7	87,6
Exports	50,3	64,2	147,0	61,5	86,0	24,1	69,5

1) Source = INDEC

Argentina is the world's fourth largest producer of wool with a share of 6 % and exports more than 90 % in form of greasy or washed wool. Exports of yarn and fabric are negligible. Yearly production averaged 155 000 tons p.a. (greasy base) and exports about 130 000 tons p.a.

Compared to the domestic production of cotton yarns and fabrics, exported quantities have been small, never exceeding 10 % for yarn and 4 % for fabrics, averaging 2 % for both during the period from 1975 to 1982.

Taking into account the relatively high percentage of cotton fibre that is exported, this situation indicates that the domestic textile industry originally oriented towards import substitution has not succeeded in building up sufficient internationally competitive capacities and organization to generate a stronger export drive even before (1978) the import liberalization.[1]

The weak export performance after this period clearly reflects the country's unfavourable monetary and general economic condition which could not be offset by the official export incentive system. A reconsideration of the incentive system within the framework of an overall economic policy would seem advisable to brighten the bleak export prospects of the textile industry in a highly protected domestic market.

As far as quota are concerned, neither for cotton yarn and fabrics as well as for wool products have the existing import quota restrictions of the USA and the EEC been a constraint during the last 5 years with an average of less than 50 % of quota fulfilment.

1) Pakistan e.g. exports 25 % of her yarn and 50 % of her fabric production.

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3.2 Investment Requirements

Assuming that the level of the per capita consumption of 1975 would be restored, this would mean ceteris paribus an additional production of 72 000 tons p.a. in 1982 or in terms of fabric 425 million m^2;; 260 million m^2 would have to be provided by the cotton system. Applying an experience figure of US $ 2,50 investment in machinery and building to produce 1 m^2 of fabric, this would account for an investment of 650 million US $ in the cotton system alone, although part (10 - 20%) of this production could be achieved by the less costly action of increasing the utilisation of existing capacity and improveing the productivity.

4. STRENGTH AND WEAKNESSES OF ARGENTINAS COMPETITIVE POSITION

Evaluation of Field Data and Questionnaires

In order to obtain sufficient details about the technical, operational and financial state of affairs of the mills, questionnaires which were prepared by Gherzi Textil Organisation and approved by I.N.T.I., C.I.T. and F.I.T.A. were sent to 78 mills.

A total of 22 completed questionnaires were received (20 cotton, 2 wool) and a total of 18 mills visits were made by the mission.

The capacity covered both by questionnaires and visits was as follows:

Cotton Spinning Rings:	346'102 Spindles	= 42.0 %
Cotton Spinning Rotors:	4'024 Rotors	= 18.0 %
Cotton Weaving:	2'923 Looms	= 31.3 %
Wool Scouring, Spinning and Weaving:	about	5.0 %

A detailed list of the mills visited, the geographical areas and installed capacities are given in the annex.

4.1 Availability and Cost of Labour

Argentina has a large labour force available and one of the lowest wage levels among the major textile producing countries.

This is evident from Table No. 4.1.1 which gives hourly wages of Argentina in comparison with industries in South America, North America, Europe and some competing countries in Asia. The comparison shows, that in 1982 Argentina was 30th among 42 textile producing countries, 23rd in 1981 and 19th in 1980. Among the Latin America countries Argentina was 5th in 1982, and also in 1981.

The figures need, however, to be seen with caution. The decrease from 1981 to 1983 reflects more the devaluation of the peso than a decrease in real wages.

However, on balance one can generalize that textile wages in Argentina are significantly below most of the other Latin American countries, about 15-20 % of Western Europe and about 30 % of the USA wages.

4.11 Recruitment of Labour

None of the mills visited reported any problems with the recruitment of workers. Absenteeism and labour-turnover are well below international standards.

The low wage costs have to be seen with the productivity attained by the industry and are the single most important advantage of the textile industry of Argentina.

4.12 Man Power Skills

4.121 Operatives

In all mills visited the quality of labour was found to be of high calibre and well trained. All the mills visited reported to have formal training schemes for newly recruited operatives. There was no skill shortage noticed in any of the plants visited.

4.122 Supervisors, Mechanics and Electricians

Modern textile machinery can only work when in first class condition and although the mill management can define the technical parametres required to produce a particular product, they are dependent on the service of supervisors, mechanics and electricians to implement the same.

No shortage of these categories of employees both in number and quality has been reported to or been observed by the mission even though there does at present not exist any place for this formal training of these categories and all training is done by the mills.

For an expanding textile sector it will become necessary to give more formal training to supervisors, mechanics and all personnel engaged in quality control operations.

4.1.1 International Wage Comparison (in US$)

TOTAL HOURLY WAGES TEXTILE INDUSTRY								
N°	Country	1982	Rank	1981	Rank	1980	Rank
1	Argentina (5)	1.13	30	2.04 (5)	23	3.34	19
2	Venezuela (1)	5.73	14	5.63 (1)	12	-	-
3	Columbia (2)	2.88	20	1.76 (6)	25	-	-
4	Chile (3)	2.63	21	2.67 (3)	21	-	-
5	Brasil (4)	1.61	25	2.39 (4)	22	-	-
6	Mexico (6)	0.91	32	3.06 (2)	20	3.10	20
7	Uruguay (7)	0.89	33	-	-	-	-
8	Peru (8)	0.87	34	-	-	-	-
9	USA	7.53	7	7.03	9	6.37	11
10	Holland	10.17	1	9.16	4	11.61	2
11	Switzerland	9.44	2	8.18	6	9.65	5
12	West Germany	8.38	6	8.17	7	10.65	3
13	Italy	7.06	10	7.23	8	9.12	7
14	Spain	4.64	18	4.48	17	4.90	16
15	Hongkong	1.40	29	1.42	29	1.91	22
16	Korea	1.53	27	1.35	30	0.78	32
17	Taiwan	1.43	28	1.32	31	1.26	22
18	Sri Lanka	0.32	41	0.16	41	-	-

4.123 Technical Management

Overall the quality of technical management has been found more than satisfactory. The best technical managers found are good by world standards and operate well run plants with high standards of efficiency,house-keeping and machine maintenance. There exist within the University of Buenos Aires courses for technological training. Nevertheless, it may be argued that training abroad may also be encouraged to expose technologists to the latest technological developments and to avoid an inward looking stance.

4.124 Textile Research Institute

Although there is no specific textile college in the country, there is the CIT.
which is entirely funded by the Government and forms part of I.N.T.I.

C.I.T. is equipped with a full range of spinning and testing equipment.

In future C.I.T. which has appropriate facilities and organizational resources could be the home for the retraining of supervisors and mechanics. This would also be a way to improve the relation of C.I.T. with the industry and make it more relevant to the industry.

C.I.T. should also be provided with sufficient funds which could allow it to set up a trouble shooting/consulting service. This should preferably be done in collaboration with an experienced firm of consultants which would have to delegate a number of experts to C.I.T.

4.125 Yearly Operating Hours in the Textile Industry

The table on the following page gives a comparison of the yearly operating hours in the various textile producing countries.

When comparing them with Argentina we see that the operating hours of the mills are on an average in line with the textile producing countries in Europe but below the high operating hours of the textile producing countries in East Asia.

Operating Hours in the Textile Industry

Country	Yearly Operating Hours 1981
- Taiwan	8'500
- South Korea	8'500
- India	8'500
- Hongkong	8'500
- Turkey	7'100
- Italy	7'080
- Switzerland	6'300
- Germany	5'900
- USA	5'830
- Brasil	6'800
- Mexico	6'600
- Argentina, Spinning	
1972 - 1980	5'437
1981	4'836
- Argentina according to questionnaires 1982	
Spinning	6'500
Weaving	6'500

4.13 Labour Relations

None of the mills visited reported having labour troubles at present and management appeared to have good working relationship with their employees.

4.14 Systems employed

4.141 Quality Control

All of the mills visited had comprehensive quality control systems installed covering the identification of the quality of the various cottons used, material in process characteristics and yarn and fabric quality tests.

4.142 Production Control

Production control i.e. the checking of shift-wise and daily output figures against the set standards was done in all the mills visited.

4.143 Waste Control

Mills reported to have an effective control of the waste produced both for reworkable and non-reworkable waste.

Typical figures indicated for carded yarns about 10 - 12 % from bale to yarn and 2 - 3 % from yarn to fabric which are good practise.

As the textile industry requires a substantial input of consumable stores such as card clothing roller cots, aprons, ring travellers, shuttles, cans and bobbins etc., this should be available to the industry duty free.

This will allow the mills to keep its equipment in top working condition.

Lack of spare parts and consumable stores or an excessive price for spares has been the main cause in many textile producing countries for the poor performance of their industry.

The manufacture of stores and spares which should in principle be encouraged within the country should be done only, if prices to the mills are in the region of the CIF price of foreign made spares and stores.

Otherwise mills will have again to pay excessive prices for stores and spares which are in many cases inferior in quality to the imported ones.

4.144 Maintenance Standards

Maintenance standards were found high with preventive maintenance schemes employed in most of the mills visited. If deficiencies were noticed they were a result of the financial problems of the mills which did not allow them to import spares to maintain the machines in top condition.

4.2 Availability and Cost of Cotton and Other Input Factors

4.21 Cotton

Argentina produces under normal conditions sufficient quantities of cotton to supply its local textile industry.

The crop varied between 220'290 MTY in 1978 and 84'000 MTY in 1981 with an average crop of 134'000 MTY (1978 - 1982).

There are basically three types of cotton:

- Chaco 510 with a staple length of 28 - 30 mm
- Reva with a staple length of 26 - 28 mm
- Tova with a staple length of 24 - 26 mm

Micronaire values range from 3.9-4.5 for Chaco and 4.4 to 5.5 for Reva.

Mill sources report that in the last years the quality both in terms of staple length and Micronaire value,improved.

Most of the standard fabrics can be produced from coarse to medium count yarns spun from locally grown cotton. For the spinning of fine counts,arrangements exist for the duty free imports of long staple cotton from Peru.

Production and consumption of the cotton fibre qualities are given in the following tables:

gherzi organisation zürich

Production & Consumption of Cotton Fibres by Quality
Year 1978 to 1982

Quality	1978				1979				1980				1981				1982			
	Production		Consumption		Production		Consumption		Production		Consumption		Production		Consumption		Production		Consumption 1	
	To	%	To	%	To	%	To	%	To	%	To	%	To	%	To	%	To	%	To	%
"A"	220	0,10	2 842	2,78	-	-	3 828	3,47	-	-	3 166	3,43	-	-	3 726	4,92	303	0,20	2 500	2,88
"B"	13 878	6,30	11 262	11,02	9 552	5,50	10 632	9,63	6 833	4,70	9 168	9,93	1 922	2,30	7 681	10,14	13 486	8,90	7 100	8,21
"C"	96 707	43,90	40 378	39,50	74 157	42,70	48 898	44,31	57 279	39,40	33 363	36,15	29 245	35.-	24 990	33.-	76 369	50,40	31 400	36,33
"D"	88 116	40.-	45 936	44,94	62 868	36,20	45 307	41,06	56 407	38,80	43 653	47,30	34 509	41,30	34 254	45,24	52 276	34,50	39 900	46,17
"E"	20 047	9,10	1 489	1,46	23 272	13,40	1 547	1,40	23 552	16,20	2 470	2,68	16 127	19,30	3 546	4,68	8 485	5,60	4 100	4,74
"F"	1 322	0,60	303	0,30	3 820	2,20	144	0,13	1 308	0,90	476	0,51	1 755	2,10	1 530	2,02	606	0,40	1 200	1,39
"G"	-	-	7	0,00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	220 290	100,00	102 217	100,00	173 669	100,00	110 356	100,00	145 379	100,00	92 296	100,00	83 558	100,00	75 727	100,00	151 525	100,00	86 200	100,00

1/ Estimated figures
National Service of Economy & Sociology (Cotton sector)

4.22 Man-Made Fibers

The usage of polyester fiber in blends with cotton has been and still is very low in Argentina. Polyester fiber was produced in the country up to 1980 and has now to be imported from Brasil, Uruguay or the US at prices much above the international market price. As the following comparison shows (date: 2.8.1983):

Country of Origin	Price in US$/lbs.	Landed Cost at Mills. $/lbs.
USA	0.623	1.91
Uruguay	0.837	1.89
Brasil	0.599	1.83

Rayon

Rayon is available to the mills both from local and international sources. Prices are slightly higher then international prices.

4.23 Dyes and Chemicals

None of the mills visited claimed to have any problems in the procurement of dyes and chemicals from local or foreign sources. Prices appear to be higher than international prices.

4.3 Availability and Cost of Power

Argentina is one of the few countries outside Europe where the textile industry is not subject to severe and disruptive power shortages and power cuts.

A preliminary investigation shows that Argentinian textile firms receive power at costs which are much below the level in other textile producing countries:

Country	Cost/KW-h in US$ cents	
- Argentina	3.0	
- Korea	6.5	(1981)
- Pakistan	9.7	(1982)
- Egypt	9.6	
- USA	3.0	
- Japan	8.5	
- Germany	5.7	

4.31 Cost of Fuel Oil

The cost of fuel oil in Argentina is according to a study prepared by the Government the lowest when compared with the following countries:

Country		Cost/kg in 1980 US$ cents
- Argentina	= 100	9
- Brasil	= 67	6
- USA	= 211	19
- Uruguay	= 244	22
- Italy	= 333	30
- Korea	= 333	30
- Taiwan	= 322	29

The cost of fuel oil represents a significant subsidy to the industry and here especially to the textile processing industry.

4.4 Cost of Water

In the cost of water the industry appears to have no advantage but also no disadvantage compared with the textile producing countries, since almost all the companies visited by the mission have their own wells.

Country		Cost of Water in US$ cents/m3
- Argentina	76 - 100	35 - 46
- Brasil	33	15
- USA	48	22
- Uruguay	80	37
- Italy	87	40
- Korea	70	32
- Taiwan	72	33

4.5 Spare Parts

Some mills reported difficulties in receiving spare parts due to foreign exchange constraints and lack of finance.

At the present the Government levies on spare parts an import duty between 5 and 38 %.

This is a heavy burden to the industry which has already the disadvantage that it has to pay high freight rates and has to maintain large stocks, compared to its foreign competitors.

In the table on the following pages we have summarised data on the rate of duty charged for various spare parts during the period 1975-1982.

The table shows, that Government policy on the rate of duty on spare parts and stores has been very inconsistent over the years.

In our view there is no justification, as for example for the 38 % duty on card clothing. Today in good mills wires for doffers and cylinders are replaced after about 300 tons of fibres have been processed and Licker-in wires after 150 tons. With the higher prices of card-clothing in Argentina the mills are not in a position to replace card-clothing as necessary if top quality is to be produced, replacement wire must be available.

The import of ring travellers in the last 3 years amounted to about $ 335'000.--. With about 900'000 spindles in operation the consumption of ring travellers works out to about 1,2 cents. In good mills the amount spent on ring travellers is about 12-17 cents per spindle per year.

Similarily for spinning-rings, the total amount imported in the last 3 years was about $ 245'000.--. With about $ 2.5/ring the total import amounted to about 100'000 pieces or 33'000 per year. If rings would be replaced after 4-5 years as they should the yearly requirement would be about 200'000 rings. Again this shows that consumption of such vital items is too low and may at least partially explain the high level of ends-down.

Import Duty for Spares and Stores Argentina

Year	1975		1976		1977		1978		1979		1980		1981		1982	
	Duty %	Value $	Duty %	Value $	Duty %	Value $	Duty %	Value $	Duty %	Value $	Duty %	Value $	Duty %	Value $	Duty %	Value $
Item																
Dobby	80	1'928	65	-	65	44'331	50	18'314	-	-	49	13'284	-	-	38	2'021
Pneumafil and Overhead Cleaners	80	189	65	-	65	3'060	50	24'859	-	-	49	105'918	48	142'824	38	7'151
Others	90	5'023	65	11'435	65	28'888	10	296'490								
Card Clothing (Rigid Wire)	80	217'663	80	173'041	80	193'092	50	223'475	-		47	211'259	48	150'285	38	92'970
Card Clothing (Flexible Wire)	80	156'155	80	198'958	80	225'334	50	171'636	?	8'333	47	290'621	48	376'939	38	400'388
Stores for Weaving and Spinning	5	6'123'579	5	4'062'012	10	3'456'505	10	3683'445	?	2'364	0	976'687	5	301'365	10	140'186
Ring Travellers									?	43'003	0	388'978	5	353'237	10	247'362
Rings									?	41'705	0	92'364	5	187'926	10	65'213
Speed Frame Flyers									?	2'264	0	23'681	5	80'353	10	36'005
Knitting-Machine Needles		-		-	15	-	10	14'029	?	12'564	0	17'316	5	22'444	10	6'256
Yarn Dyeing Spares	5	650'795	5	192'250	10	193'880	10	347'353	?	-	0	-	5	72'430	10	29'915
									?	-	0	23'874	5	3'397		-

Machine Makes

A peculiar characteristic found in the Argentinian textile industry was the high number of different machine makes found within one mill.

In some mills the makes of ringframes was as high as 4 and the number of loom makes as high as 5.

This creates problems with regards to supply of spare parts, skill specialization and quality.

4.6 Product Mix and Product Quality

Spinning

The Argentinian textile industry spins mainly yarns of the lower and medium count range (see also position 2.1141) with an average count of Ne 17. Combed yarns represent about 16 - 18 % of the total production.

As far as the quality is concerned, most of the mills visited manufactured yarns of good quality as the USTER % given to the mission indicate. Some of the mills had exceptional quality parameters putting them within 10 % of the best spinning mills in the world.

The use of the automatic winders with electronic yarn cleaners which were found in all mills visited are certainly contributing to the high yarn quality standards.

Some of the mills even employed automatic winders with splicers. However, a disturbing factor was the high rate of ends-down found in almost all the mills and averaged about 49/1000 spindle-hours in the mills surveyed. The age of the ring frames and the condition of rings may be mainly responsible for the high rates. In top plants in Europe ends-down are as low as 6 - 15.

Weaving

Argentina's cotton weaving industry offers a wide range of fabrics including denim, cord and colour woven fabrics. No jacquard fabrics were seen by the mission. Mills have specialized within a narrow product range and a low number of styles which allows skill specialization by weavers, supervisors and managers.

Quality standards found were high also in "different" fabrics such as cord and denim and are the result of long runs and optimized processes.

Processing

Quality levels in processing where also found satisfactory with seconds within the accepted range.

4.7 Technical and Operational Condition of the Cotton Mills

Under this heading we provide observations and tables related to relevant subjects covered during the time of the mill visits.

4.71 Cotton Spinning

4.711 Mill Buildings and Working Environment

Almost all the mills visited had buildings of high quality with proper insulation and cooling plants to maintain temperature and humidity at the required levels during the hot season.

The modern plants visited compare well with the best plants on a world level with functional building lay-outs, good floorings, wide pillar spacing, satisfactory illumination and return air systems of latest design. House keeping standards differ however with some mills not giving enough attention to the cleanliness of the material in process in the various sections of the mill.

Some of the plants also appeared to have problems with the supply air system of their air conditioning plants leading to fluff and dirt sticking to the ceilings and columns with subsequent soiling of yarns and fabrics.

The best run mills had also effluent treatment plants installed.

4.712 Age of Equipment

One of the major indicators for the comparative position of the textile industry as a whole is the average age and the age distribution of the equipment in the various subsectors.

With the exception of open-end spinning the differences between old equipment and new equipment are generally not differences in principles, but the effects of numerous improvements in machine design and the resulting improved machine performance. The technical progress had not advanced to the same degree in all stages of manufacture of a spinning mill and, therefore, even the best mills are a mixture of machines of different age-groups as a result of phased modernization programmes.

The major changes in machine design in the post-war years have been the change in drafting systems, leading to higher drafts, fewer processes and dramatically increased machine speeds. In the case of ring spinning there were considerable advance in the production capacity in the last 15 years and machines older than 15 years have on an average 20 - 30 % less output.

Also modern machines have at the feeding and delivery side bigger packages resulting in considerable reduction in handling cost.

Modern machines, especially in the blow-room and carding have also a reduced waste loss to atmosphere and create less health hazards to the operatives.
Since modern machines are precision engineered with almost no plain bearings but roller bearings, they are less maintenance intensive and produce better quality yarn. A better quality yarn is producing less end-breaks and has, therefore, a direct influence on the work load of operatives and the operating costs.

In the following we have compared the age structure of the Argentinian spinning mills (which provided questionnaires) with the cotton spinning mills in Europe (Austria, Belgium, Germany, France, Great Britain, Italy, Netherlands, Denmark, Finland and Holland) in general and Italy in particular.

In drawing (blow room and cards were excluded since the compiled data was not readily comparable) we see that the machines are older than in Europe and compared with Italy they show an extremely high age.

In combing the machines show a better distribution in the age structure with about 19 % dating from the years 1977 - 1982 (Italy 25 %).

In the speed frames the age distribution is also favourable compared with Europe and Italy.

In ringspinning however machines from 1970 - 1982 account for only 35 % versus 45 % in Italy and 30 % in Europe. The latest machines from 1977 onwards account for only 14 % in the Argentinian plants compared with 13 % in Europe and 24 % in Italy.

In winding the plants compare most favourable with Europe and Italy. The same in OE-spinning.

Age Distribution of Spinning and Winding Equipment, Argentina, Selected European Countries and Italy

Opener and Lap Machines

N° of m/c	-1970	1971-1973	1974-1976	1977-1979	1980-1982
Arg. 76	50 %	1.31%	10.52%	26.31%	11.84%

Cards

N° of m/c	-1970	1971-1973	1974-1976	1977-1979	1980-1982
Arg. 380	50.78%	0.00%	15.78%	18.42%	15.00%
Av. Europe	-	-	-	-	-

Draw Frames

N° of m/c	-1970	1971-1983	1974-1976	1977-1979	1980-1982
Arg. 228	56.57%	2.63%	16.66%	10.52%	13.59%
Av. Europe	44.00%	21.00%	18.00%	10.00%	7.00%
Italy	20.00%	8.00%	35.00%	27.00%	10.00%

Combers

N° of m/c	-1970	1971-1973	1974-1976	1977-1979	1980-1982
Arg. 96	42.70%	10.41%	28.12%	6.25%	12.50%
Av. Europe	72.00%	15.00%	7.00%	2.00%	4.00%
Italy	48.00%	13.00%	14.00%	7.00%	18.00%

Age Distribution of Spinning and Winding Equipment Argentina, Selected European Countries and Italy

Speed Frames

N° of m/c	-1970	1971-1973	1974-1976	1977-1979	1980-1982
Arg. 119	61.34%	0.00%	14.28%	13.44%	10.92%
Av. Europe	72.00%	15.00%	7.00%	2.00%	4.00%
Italy	54.00%	9.00%	13.00%	11.00%	13.00%

Ring Frames

N° of m/c	-1970	1971-1973	1974-1976	1977-1979	1980-1982
Arg. 733	64.80%	3.00%	18.00%	8.18%	6.00%
Av. Europe	71.00%	9.00%	9.00%	5.00%	8.00%
Italy	54.00%	9.00%	13.00%	11.00%	13.00%

Automatic Winders

N° of m/c	-1970	1971-1973	1974-1976	1977-1979	1980-1982
Arg. 145	22.07%	6.90%	22.06%	29.65%	19.30%
Av. Europe	38.00%	26.00%	19.00%	11.00%	6.00%
Italy	25.00%	23.00%	25.00%	16.00%	11.00%

Open-End

N° of m/c	-1970	1971-1973	1974-1976	1977-1979	1980-1982
Arg. 16	0.00%	0.00%	0.00%	87.50%	12.50%
Av. Europe	3.00%	8.00%	44.00%	17.00%	28.00%

Average Age of Machines surveyed

Section	Average Age
- Blow room	18.6
- Cards	17.1
- Drawing Frames	13.1
- Combing	13.8
- Speed Frames	14.8
- Ring Frames	20.1
- Winding	6.6
- Twisting	21.7
- OE-Machines	4.2

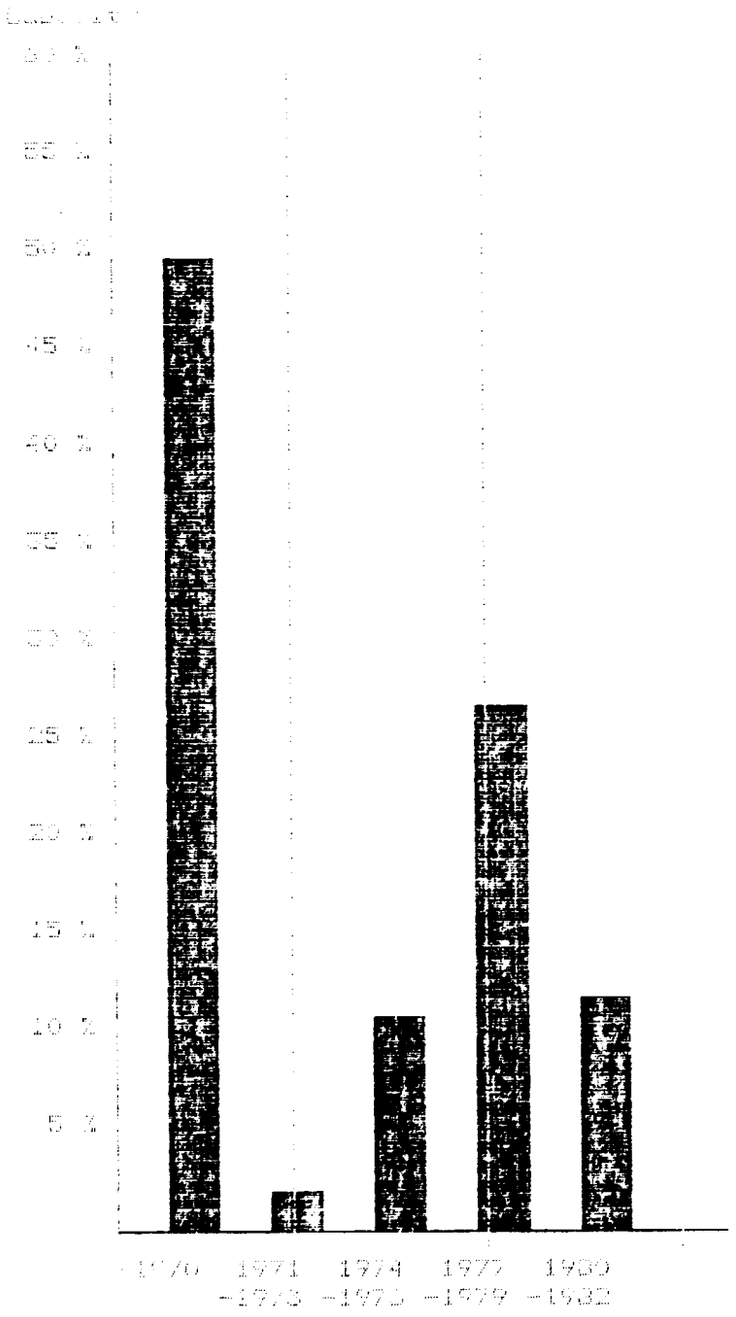
As for the average age, all sections except blowroom and rings are satisfactory and show that considerable efforts have been made to modernize the mills. As far as the winding section is concerned the mills show an exceptional high standard of modernization since practically no manual winders were found to be installed and the automatic winders are of latest vintage.

A tremendous effort will have to be made during the coming years to improve the average age of the ringspinning sector to reach the benefits of higher speeds, less ends down and improved quality.

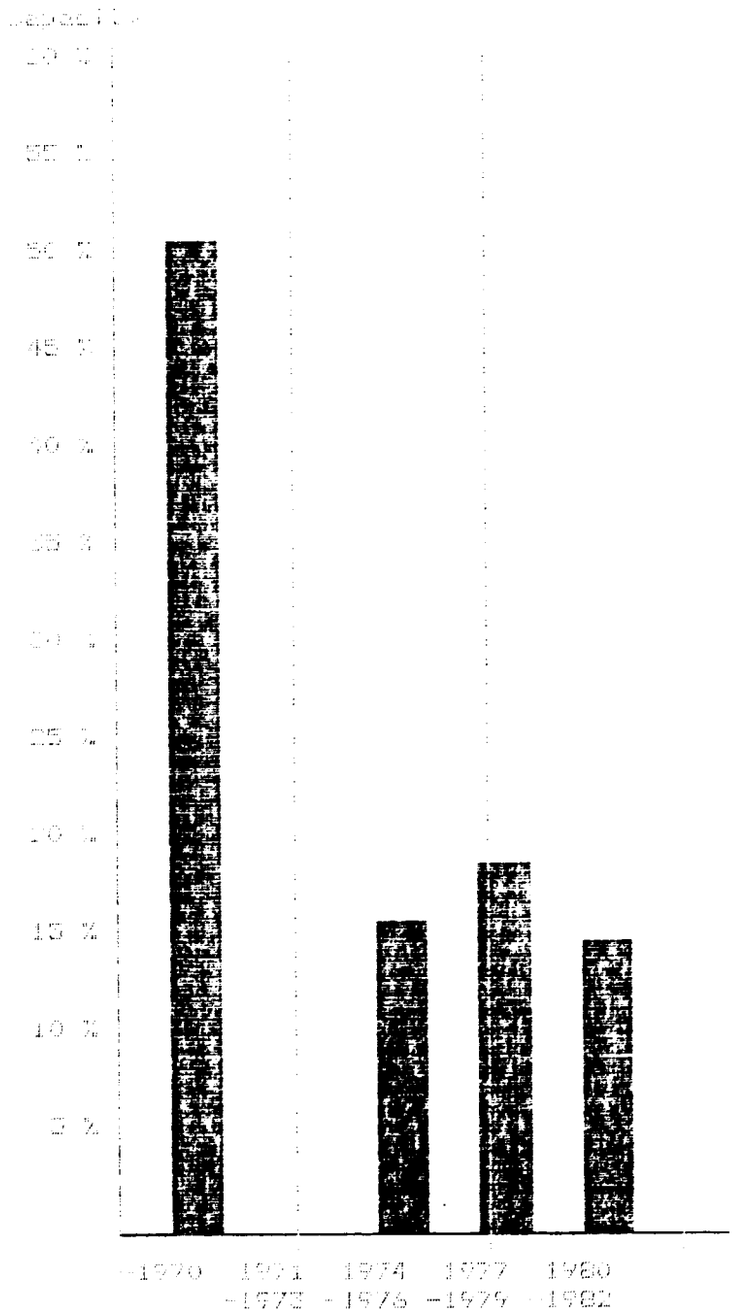
A simple calculation shows that if the present average age of 20 years of the 880'000 ring frames spindles in the cotton spinning sector is to be maintained, every year about 44'000 new spindles will have to be installed.

If we would, however, like to bring the average age to 16 years, 220'000 spindles would have to be replaced within one year.

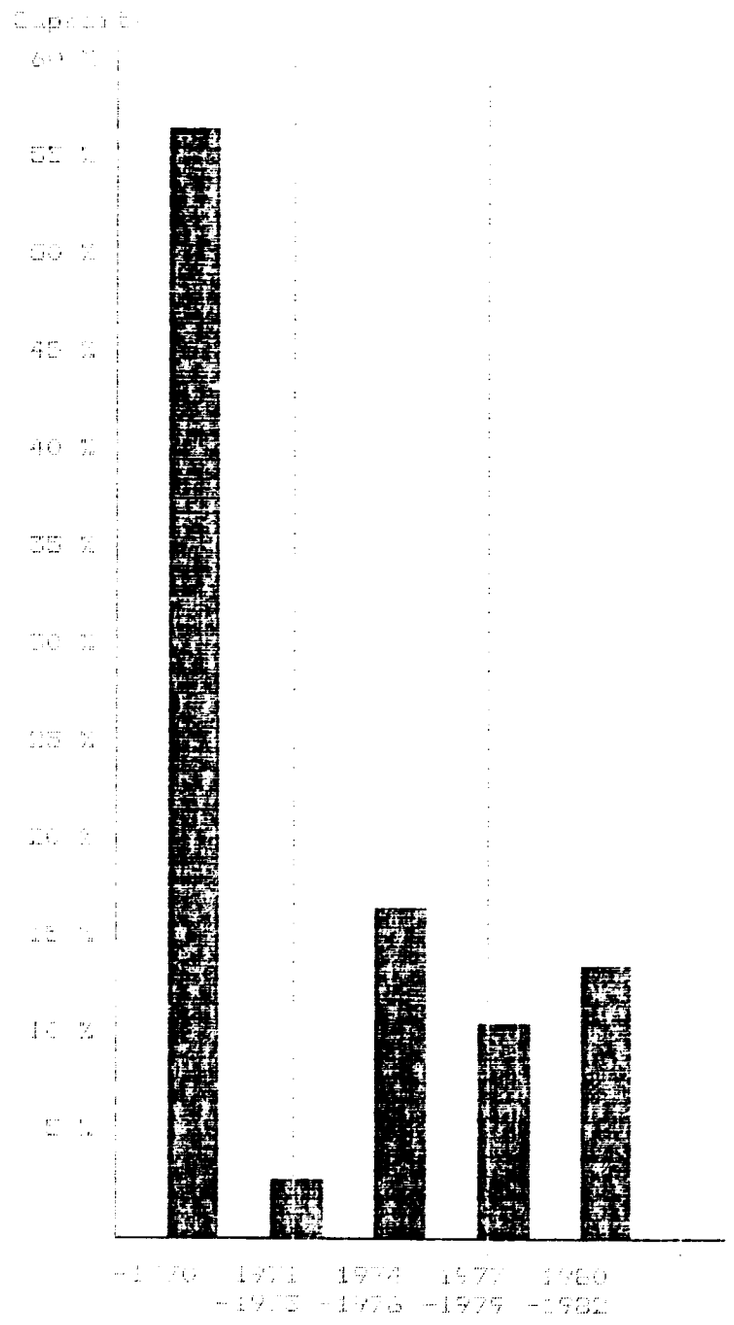
The tables on the following pages give a graphical presentation of the age structure of the equipment analyzed from the questionnaires.



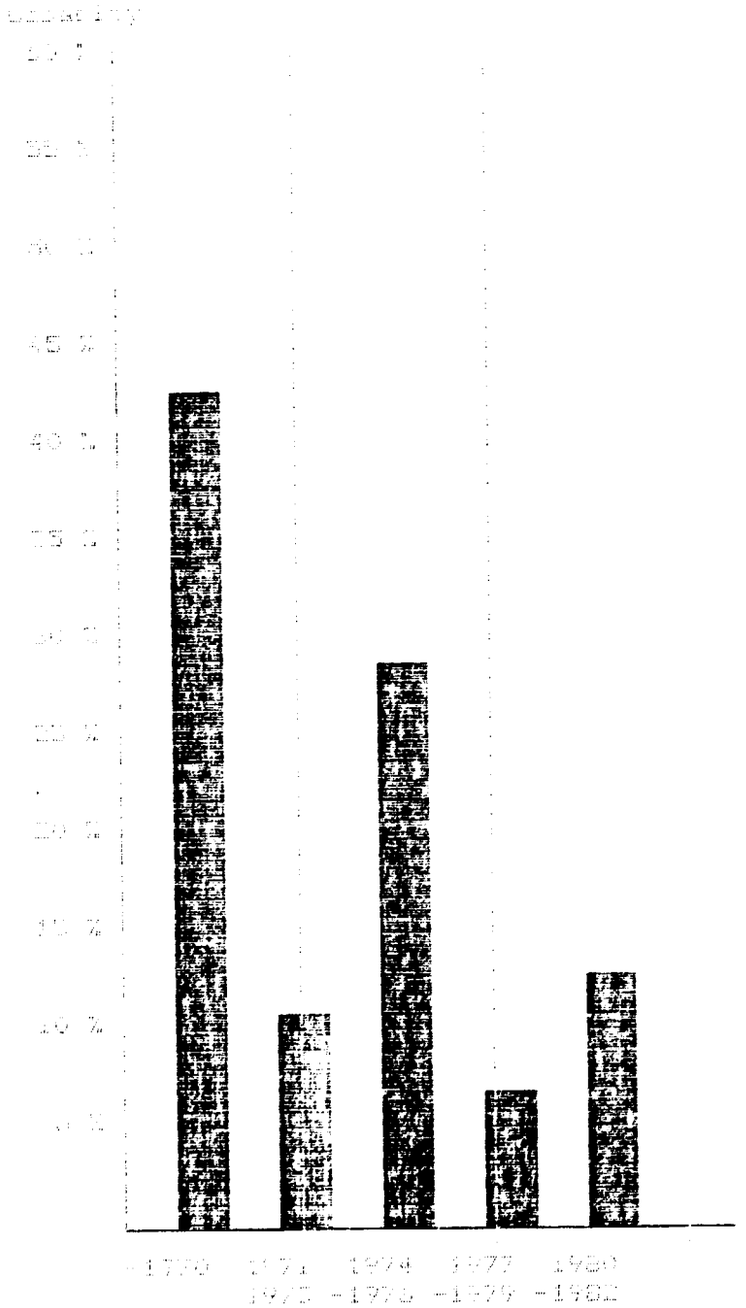
Age groups in terms of installed capacity



Age groups in terms of installed capacity

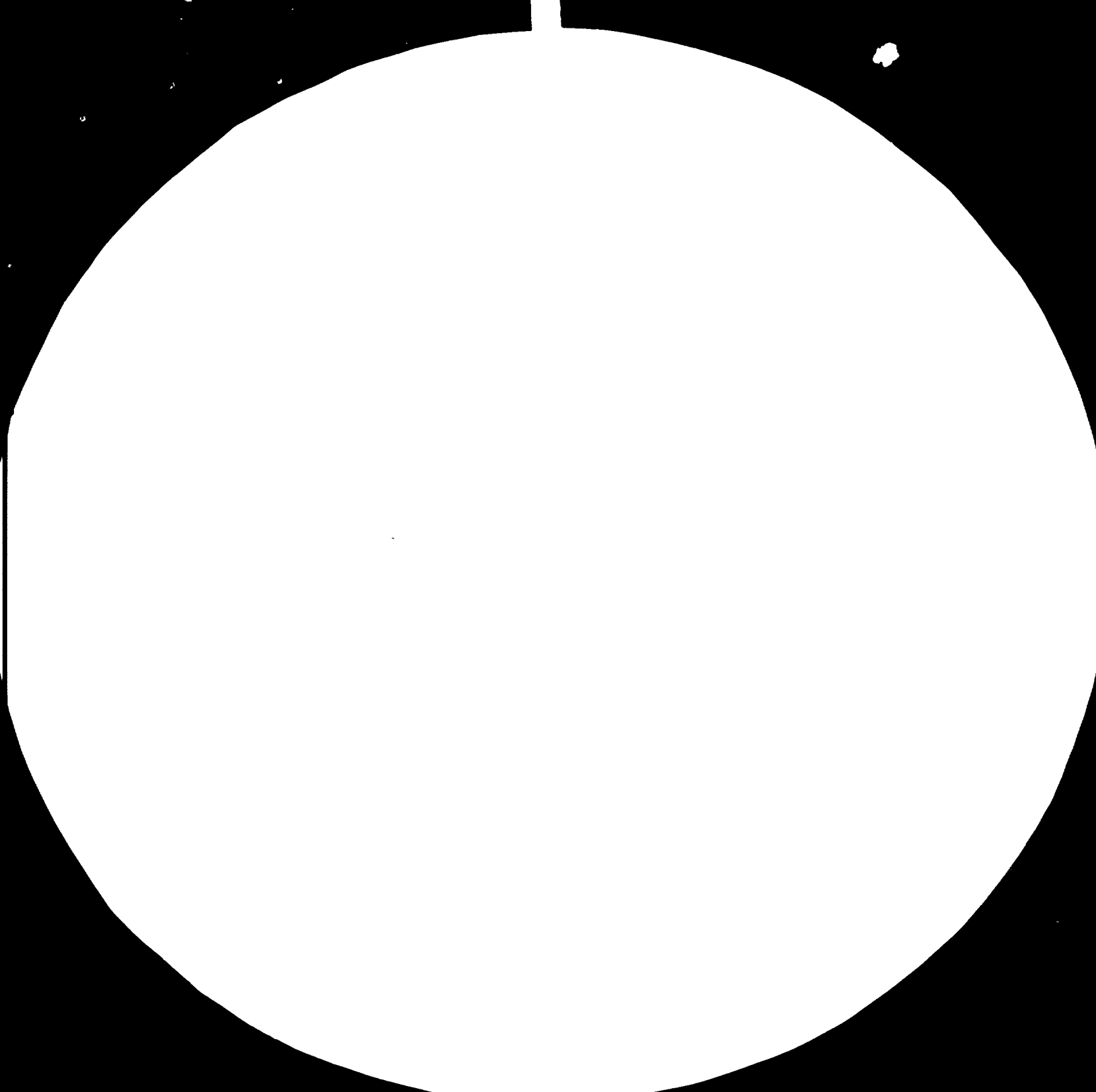


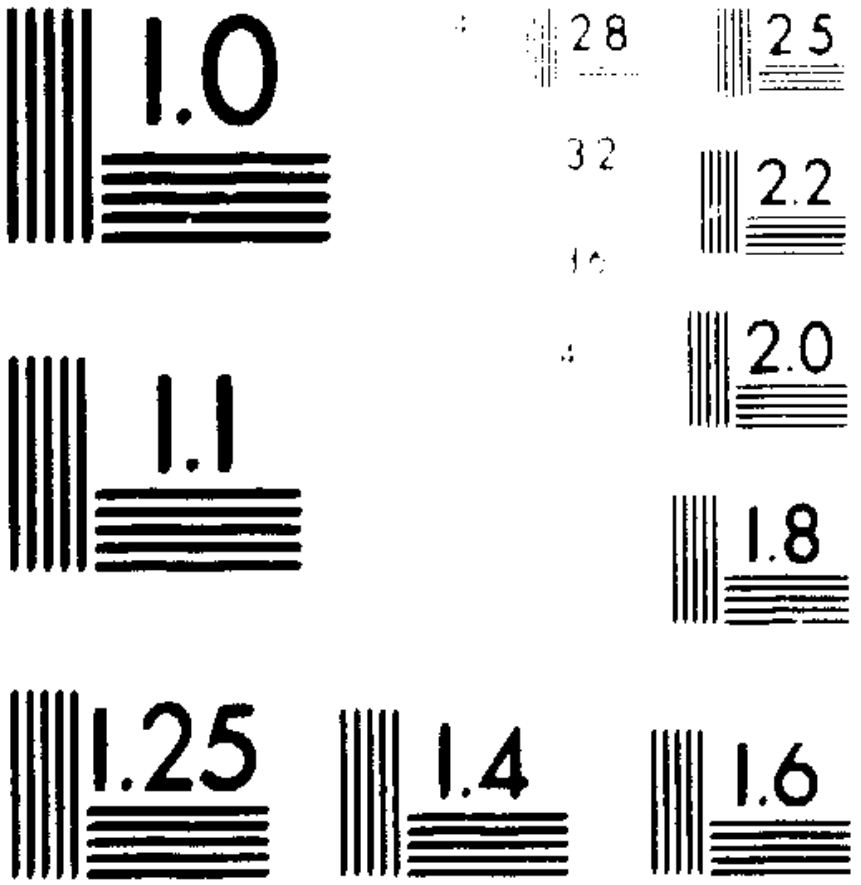
Age groups in terms of installed capacity

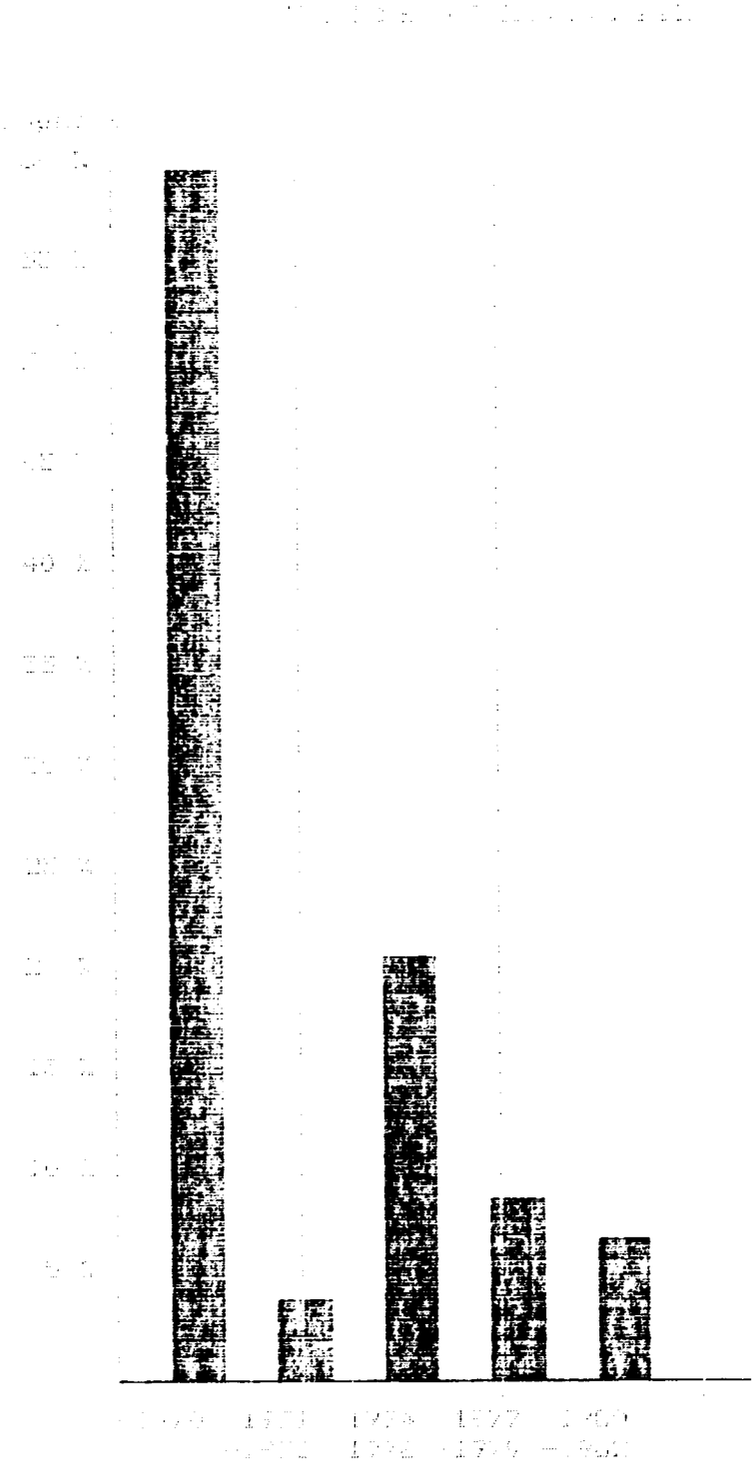


Age groups in terms of installed capacity

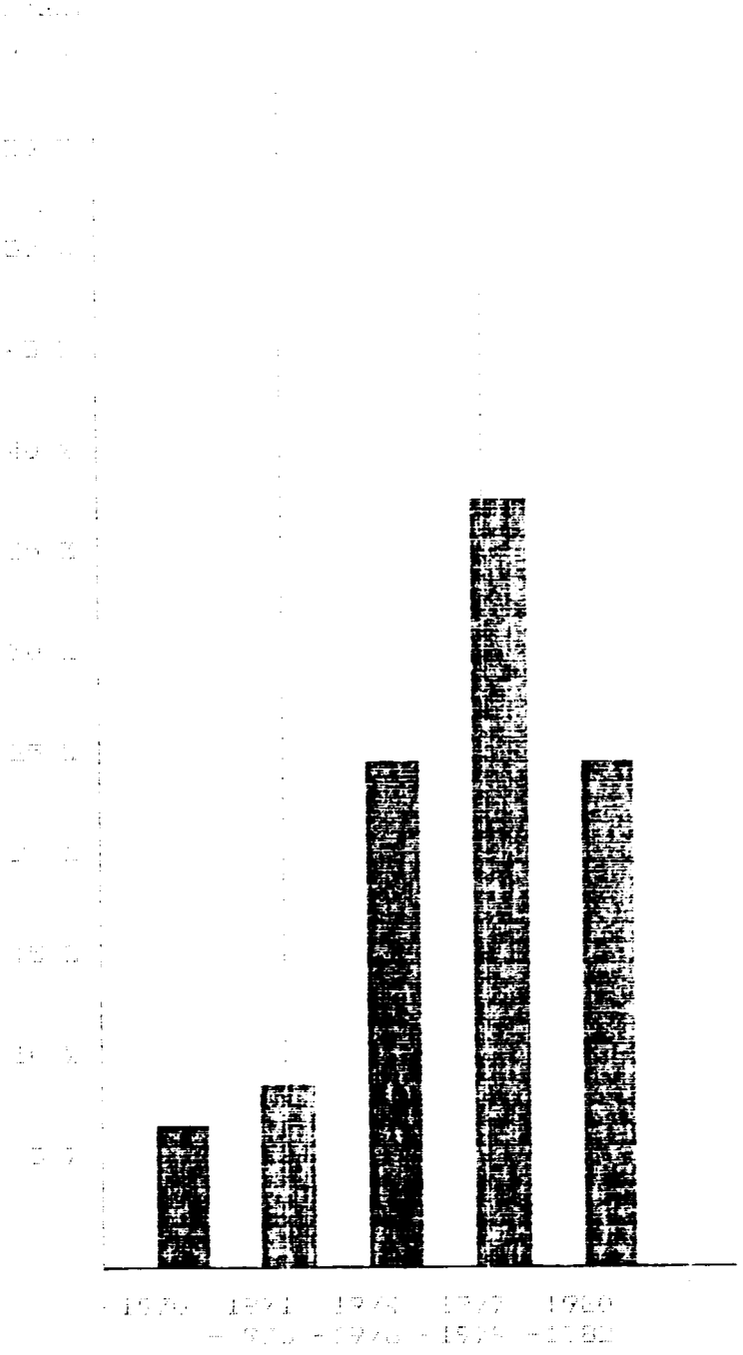
Age groups in terms of installed capacity







Age groups in terms of installed capacity



Age groups in terms of installed capacity

4.713 Ringspinning Speeds and Twist Multipliers employed

Spinning speeds are a function of equipment-age and design, raw material input and environmental conditions.

In almost all spinning mills visited speeds found are reasonably high if allowance is made for the age of the equipment, the raw material used and the obstacles created by the fact that rings, spindles and travellers have to be imported at high cost (and are, therefore, not replaced regularly).

However, there is a big difference in the ring-frame delivery speed with best practise mills in Europe especially in the coarser count groups. Here the machine productivity gap ranges from 0 - 33 % due to high twist multipliers and lower spindle speeds.

As counts become finer the difference in speeds tends to be lower.

Still there is a big difference between the local mills and with best practise mills in Europe as the following table shows:

4.7131 Twist Multipliers (TM)

Twist multipliers in Argentina appear to be on the higher side resulting in a lower machine delivery rate.

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Comparison of Ringframe Delivery Speeds

Argentinian Mills vs. European Mills

Value	Ne	Delivery m/min Argentina	Delivery m/min Europe	Difference to Europe + %
	10 carded (TM 4.5)	14.4	18.0 (TM 4.0)	- 20
	10 carded (TM 3.6)	18.0	18.0 (TM 3.6)	± 0
highest	12 carded (TM 4.25)	18.1	18.0 (TM 4.1)	± 0.5
lowest	12 carded (TM 4.5)	12.0	18.0 (TM 4.1)	- 33.5
highest	14 carded (TM 4.5)	14.6	18.0 (TM 4.2)	- 18.9
lowest	14 carded (TM 4.5)	14.2	17.0 (TM 4.2)	- 16.5
highest	16 carded (TM 4.25)	14.4	18.0 (TM 4.2)	- 20.0
lowest	16 carded (TM 4.35)	16.1	17.0 (TM 4.2)	- 5.3
highest	20 carded (TM 3.26)	19.0	19.0 (TM 3.2)	± 0
lowest	-	-	-	
highest	20 carded (TM 4.23)	15.9	18.0 (TM 4.1)	- 11.7
lowest	20 carded (TM 4.5)	13.2	18.0 (TM 4.2)	- 26.7
highest	24 carded (TM 3.38)	13.7	16.3 (TM 3.5)	- 16.0
lowest	-	-	-	
highest	24 carded (TM 5.3)	10.35	14.4 (TM 4.3)	- 28.9
highest	30 carded (TM 3.38)	16.2	15.5 (TM 3.5)	+ 6.5
lowest	30 carded (TM 3.58)	15.7	14.9 (TM 4.0)	+ 5.4
highest	30 carded (TM 4.25)	14.6	14.9 (TM 4.1)	- 2.0
lowest	30 carded (TM 4.25)	11.9	14.1 (TM 4.5)	- 15.6
highest	30 combed (TM 3.38)	14.5	17.4 (TM 3.6)	- 16.7
lowest	30 combed (TM 3.3)	12.0	17.4 (TM 3.6)	- 31.1
highest	30 combed (TM 4.4)	12.5	15.8 (TM 4.0)	- 20.9
lowest	-	-	-	
highest	40 combed (TM 3.9)	11.5	14.1 (TM 3.8)	- 18.5
lowest	-	-	-	
highest	50 combed (TM 3.35)	13.9	13.9 (TM 3.3)	± 0
lowest	-	-	-	
highest	50 combed (TM 4.17)	11.0	12.4 (TM 4.1)	- 11.3
lowest	-	-	-	
highest	60 combed (TM 3.4)	12.5	12.5 (TM 3.4)	± 0
lowest	-	-	-	
highest	60 combed (TM 4.34)	10.1	11.5 (TM 4.0)	- 12.2
lowest	-	-	-	
highest	80 combed (TM 3.7)	10.0	11.5 (TM 3.0)	- 13.1
lowest	-	-	-	

4.714 Average Count and Range of Counts

The average counts of the mills surveyed ranged from Ne 6.0 to Ne 35 being Ne 18.7 on an average.

Total Number of Counts

The total number of counts spun ranged from 4 to 30 and was 11 on an average.

Range of Counts

The range of counts spun was wide in almost all mills observed and can range from Ne 4 - 29 in one case to Ne 8 - 40 in another.

If one considers mixing, count and twist multiplier, the variables in most mills are too high to guarantee optimum operation.

In one mill with about 20'000 spindles 18 different counts were spun out of 4 mixings with various twist multipliers.

Only two mills were spinning one single count. The high degree of variety was observed both in specialized mills (sales mills) and spinning mills which are integrated with weaving plants.

Ideally, the range of counts spun in a mill should not exceed the average count for which the mill was designed by ± 20 %. Therefore, a mill designed to spin an average count of Ne 20 should not be used to spin counts outside the range Ne 16 - 24 if both optimum speeds and balanced working of the sections are to be achieved. Judged against this, most of the mills allocated work with an degree of variety which is inconsistent with optimum operation.

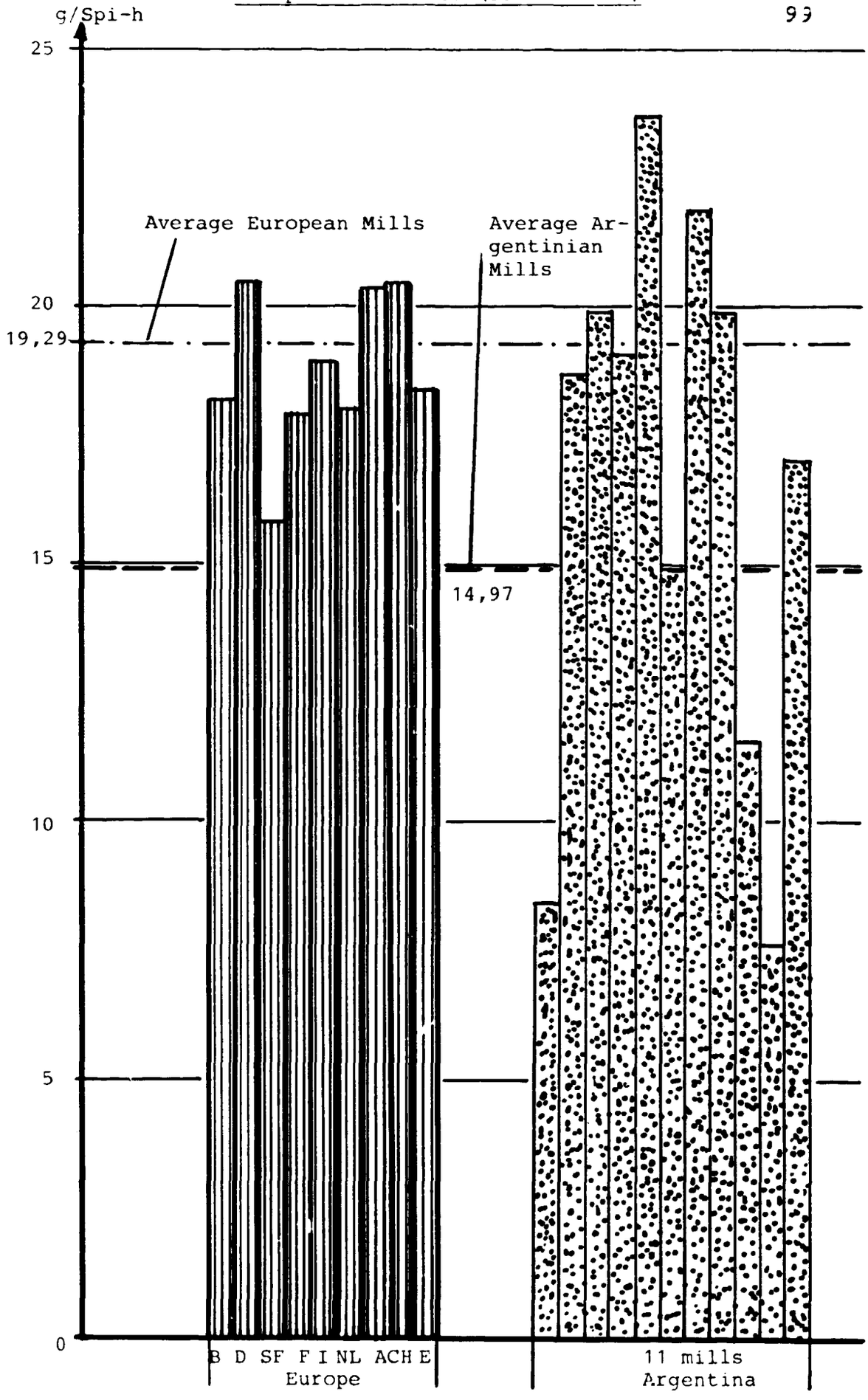
4.715 Machine Efficiency

As a result of the low spindle utilisation % (90.6 %) and low technical efficiency % (88.5 %) the overall machine efficiency is quite low at 81.6 % (of the mills surveyed). In best practise mill the value would be 88 - 90 %.

4.716 Gramms per Spindle Hour Selected Argentinian Mills compared with selected European Countries.

In the table on the following page, we have summerised the g/spi-h of the mills surveyed and compared them with the average data of selected European countries. The table shows that some of the Argentinian mills compare very well with some of the European countries, even though there exists an overall productivity gap of about 22 %.

G/Spi-h selected Argentinian mills and selected European countries (Basis Ne 24)



4.717 Labour Productivity

Labour productivity in spinning is usually expressed in two ways:

- kg/operative-hour,i.e. the quantity of yarn produced per operative during one hour expressed in kg, or

- op-min/kg, i.e. the time required by one operative to produce one kg of yarn expressed in minutes.

The values achieved in a particular mill are determined by a number of factors, of which the most important are:

1) The level of technology of the machinery, i.e. their rate of output, labour saving features employed on the machine, standard of maintenance and suitability of the machine to spin a particular yarn.

2) The labour content of a particular yarn to be produced - carded or combed.

3) The efficiency of the supervisors and the management in general in achieving the optimum utilization of the labour force and the machinery.

The labour productivity for all the spinning mills surveyed have been elaborated by us both in terms of kg/operative-hour and operative-minutes/kg to make them comparable with available data from European spinning mills. The data used for our calculations has been as follows:

1) Operative-hours as provided by the individual mills for the year 1982.

2) Production quantities as given by the mills for the year 1982.

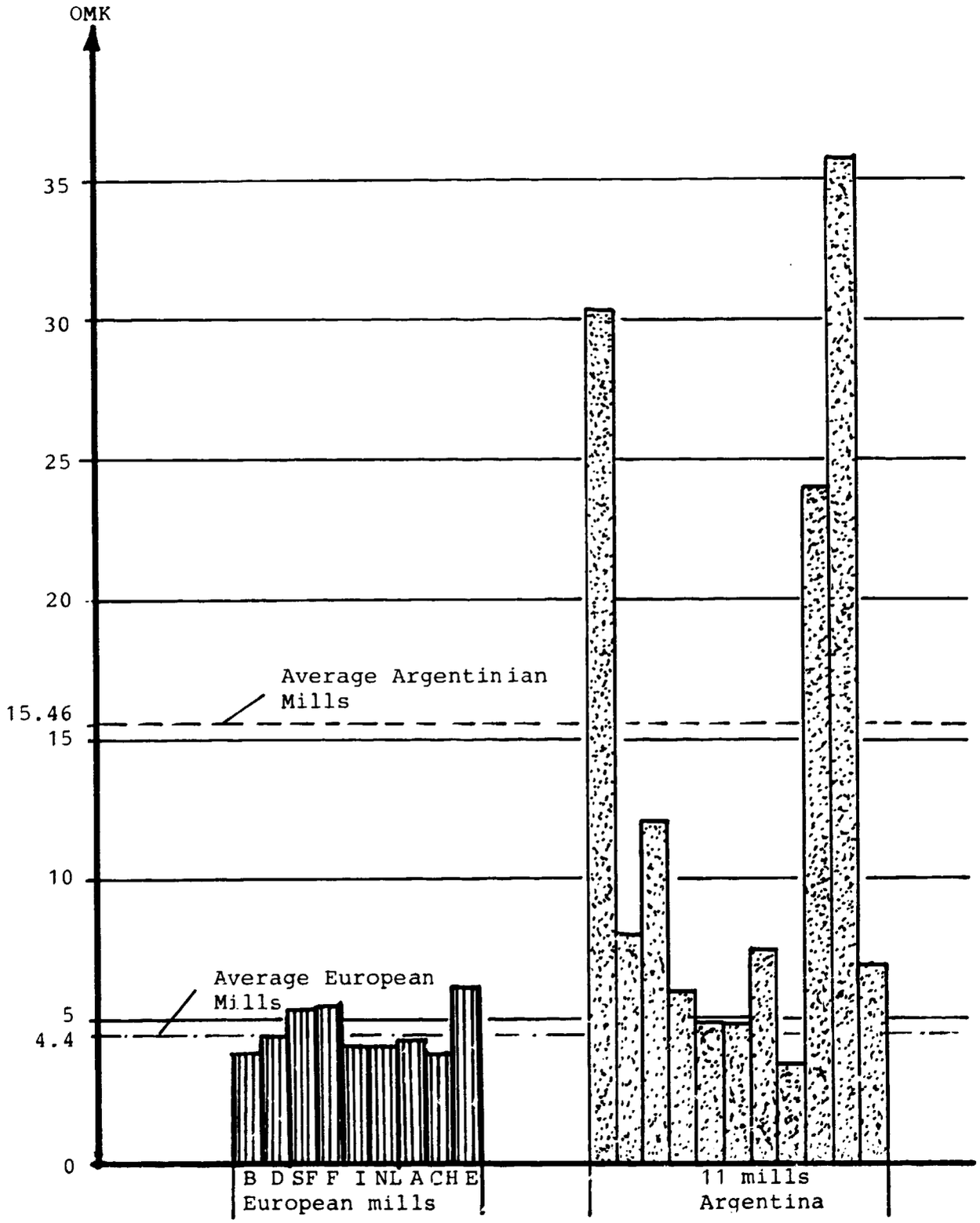
3) The maintenance and supervisory staff have been included in the calculation to make the data comparable with the available European productivity figures.

Labour productivity figures for each of the mills surveyed are given in the following table. Both in terms of kg/op-h and operative-minutes/kg and are compared with the average data of the European mills.

tr

It would be said that the relationship between the low productivity figures is synonymous with that of the wage structure which is comparatively low. Because of the discrepancy however between the O.M.K. of the best mills as opposed to that of the worst mills it is more likely to be reflected in the concept of modern versus old technology equipment.

OMK (Operative-Minutes/kg) Argentina
and selected European Mills, Basis Ne 24



4.718 Analysis of Statistical Data Ringspinning

In the following we comment on the data collected with the help of questionnaires which were prepared by the spinning mills participating in the survey. All data relates to the year 1982 if not statet otherwise.

The figures should be read with caution and be considered more as an indication since their method of compilation could not be checked by the mission and some of the figures presented by some of the mills were found to be not correct.

Number of Spindles installed

The number of spindles installed of the mills surveyed are 346'102 representing about 40 % of the active capacity (880'000).

Number of Spindles operated

The number of spindles operated were 321'316 or 92.83 % of the installed capacity.

Average Size of the Ringspinning Mills

The average size of the mills surveyed works out to 19'227 spindles. The total average based on total spindleage is about 19'900 spindles.

Total Production

The mills surveyed had an aggregate production of 38'830 tons, representing together with the production from OE-spinning plants of 6'406 about 45'260 t or 52 % of the national production of about 86'488 tons.

Production/Spindle/Year

The production/spindle/year was 145 kg on an average.

Operational Hours 1982

In 1982 the mills surveyed operated for 6'109 h on an average ranging from 5'856 h to 8'128.

This has to be compared with the national average for 1981 which was 4'836 (in 1981).

Average Spindle Utilization

The spindle utilization which is the relationship of effective spindle hours to theoretical spindles hours works out to 90.6 % which is low and should be in near 95 - 97 %.

Average Count

The average count was Ne 18.7 and above the national average of Ne 17 (1981).

Average Number of Counts spun and Range of Counts

The average number of counts spun was 11 and on the high side (see also 4.714).

Average Number of Mixings

The average number of mixings was 3.2 and also on the high side.

Average effective g/spi-h

Worked out to 25.3 being about 88.5 % of the calculated theoretical grams/spindle-hour of 28.6.

Average Spindle Speed

The average spindle speed works out to 9'776 and is on the lower side.

Average Technical Efficiency %

The average technical efficiency works out to 88.5 %. An optimum figure would be in the range of 92 - 95 % as reported by some of the mills.

Average Overall Efficiency %

The overall efficiency which is the product of technical efficiency and spindle utilization works out to 81.06 % and has to be considered to be low.

Labour Productivity, Kgs/Operative Hour

The average kgs per operative hour of 9.26 are on the lower side and result of the relatively low spindle speeds employed and the low overall efficiency.

4.718.1 SUMMARY RINGSPINNING

NO.	ITEM/CODE	TOTAL	AVERAGE
1	NO.OF SPINDLES INSTALLED	346,102	
2	NO.OF SPD. OPERATED	321,316	
3	DEGREE OF OPERATION (%)		92.83
4	PROD.IN TONS	38,830	
5	AV.KGS./SPDL /YEAR		145.3
6	AV.OPERATING HOURS		6109
9	AV.SPINDLE UTILIZATION(%)		90.64
10	AV.COUNT		18.7
12	AV.NO OF COUNTS		11.5
15	AV.NO OF MIXINGS		3.2
17	AV.EFF.G/Sph		25.3
18	AV.Theor. G/Sph.		28.6
19	AV.SPDL.Rpm		9,776
21	AV.TECHNICAL EFFICIENCY(%)		88.50
22	AV.OVERALL EFFICIENCY(%)		81.06
23	AV.ENDS DOWN		49
26	AV.OPERATIVES /1000 SPDLS.		2.63
27	AV.KGS/OP.HR		9.26
28	OP.MIN/KG		6.47
30	AV.AGE OF		
	BLOW ROOM		18
	CARDS		15
	DRAWING		12
	COMBING		11
	SPEEDS		14
	RINGFR.		19
	WINDING		8
	TWISTING		13

4.72 Cotton Weaving

4.721 Mill Buildings and Working Equipment

The same what was said for spinning applies to weaving also. Even though standards of buildings differ, as well as the individual lay-outs, no anomalies could be observed.

However, with increasing use of wide shuttleless looms the existing old buildings with narrow pillar spacing are a disadvantage.

4.722 Age of Equipment

Before we comment on age of the weaving equipment on the basis of the questionnaires received and the mills visited, we would like to review the major development which took place in weaving in the recent years.

There are several distinct types of machines for the weaving process. Therefore, the criteria in characterizing a weaving shed is more the type of loom than the dates on which the looms are installed. However, the type of loom indicates also directly the age-group to which the loom belongs. There are the following major loom types:

- power loom
- automatic loom (battery)
- automatic loom with Unifil (Pirn winding directly on loom)
- water jet loom
- air jet loom
- rapier loom
- projectile loom

The main developments have been concerned with the method of weft supply and the resultant effect on the proportion of time which is taken up by the operatives.

In the power loom, the oldest type of looms, most of the time of the operator is taken up by replacement of the empty weft pirn in the shuttle.

In the airjet loom, the rapier loom and the waterjet loom and the projectile loom the weft supply is taken from large packages requiring very little operative-time for replenishment. Alsothe newer looms work with higher speeds and are wider. The effect of these changes is a reduction in the labour content per meter of cloth produced which allows an increase in the number of looms per weaver.

A typical weaving cost comparison gives the following picture:

Battery loom with Unifil	Air-Jet	Projectile
126 %	100 %	100 %

Newer looms allow also the weaving of longer pieces, have less defects and reduced machine stoppages since the yarn is treated less harshly during weaving.

The analysis of the age structure showed the average age of the weaving preparating machines to be in line with the countries in Europe. However, most of the sizing machines surveyed are of a type which does not have the energy saving devices which are offered today with the latest equipment.

The looms surveyed showed the following average age:

- Sulzer	19	years
- Saurer	6	years
- Rüti	25.6	years
- Draper	31	years
- Crompton	20	years
- Kovo	20	years

The age distribution can be considered normal even though the modern machines installed are first generation machines with the resulting productivity gap if compared with the latest machines. This is also reflected in table no. 21241.

4.723 Machine Speeds Employed and Looms per Weaver

In the table on the following page we have presented some of the machine speeds found in the mills and compared them with the speeds and looms employed in best mills in Europe.

The data shows that there exists a considerable machine productivity gap for almost all the presently installed looms if compared with the latest equipment available.

As for the looms per weaver we have also compared the best surveyed mills with the actual data given to us by the mills. Also here it shows that a big productivity gap exists between mills in Argentina and the best surveyed mills in Europe.

4.723.1

Weaving Data Comparison (CV = Comparative Values)

Article Type of Loom	Working Width	Specifications					Av. rpm	No. of looms/weaver	Remarks
		Warp Tex	Weft Tex	Ends per 10 cm	Picks per 10 cm	Grey Width cm			
Heavy fabric									
Sulzer	337 cm	90	113	246	149	160	220	7	-
CV PU	153 "	90	113	246	149	160	250-260	12-16	with 150 finished width
Heavy fabric									
Rüti	180 cm	90	90	265	152	168	240	20-21	-
CV F2001	190 cm	90	90	265	152	168	300-320	20-24	-
Tafetan									
Picanol	122 cm	49	49	209	130	110	190	11	-
CV MDC	122 cm	49	49	209	130	110	220-230	24-28	-
Tafetan									
Picanol	163 cm	30	30	216	207	152	160	12	-
CV MDC	163 cm	30	30	216	207	152	190-210	24-28	-

Weaving Data Comparison

Article Type of looms	Working Width	Specifications					rpm	No. of Looms per Weaver	Remarks
		Warp Ne	Weft Ne	Total Ends	Picks/ cm	Grey Width cm			
H. Fabric RütiC	190 cm	8,5	7	4554	17,5	170	185	12	
CV Rüti C	190 cm	8,5	7	4554	17,5	170	185-190	16-20	
H. Fabric CP4H	190 cm	6,5	5,5	4290	15,5	167,4	185	12	
CV CP4H	190 cm	6,5	5,5	4290	15,5	167,4	185	12-16	
5/257 CU1N	190 cm	20	16	7080	18	174,5	212	18	
CV CU1N	190 cm	20	16	7080	18	174,5	210-215	20-22	
6/107 CU1H	140 cm	30	20	3550	22,5	98	238	30	
CV CU1H	140 cm	30	20	3550	22,5	98	220-240	30-36	
3/87 Saurer	190 cm	16	16	3584	19,0	164,6	170	20	
CV Saurer 300	190 cm	16	16	3584	19,0	164,6	200-210	20-24	

Weaving Data Comparison

Article Type of Loom	Working Width	Specifications					rpm	No. of Looms per Weaver	Remarks
		WP	WF	Ends	Picks	Grey Width			
Saurer 4 Colours	1300	40/1	20/1	34	24	115	180	16	
CV 300	1300	40/1	20/1	34	24	115	200-210	20-24	4 Colours
Saurer 4 Colours	1800	40/1	20/1	34	19	150 finished	165	12	
CV 300	1800	40/1	20/1	34	19	150 finished	180-185	16-20	4 Colours
Saurer 300 single	1800	20/2	20/2	12	16	150 finished	200	10	
CV 300	1800	20/2	20/2	12	16	150 finished	210-220	12-16	
Sulzer	153"	26/1	26/1	34	24	150x2	200	10-12	
CV PU	153"	26/1	26/1	34	24	150x2	250-270	20-24	

Weaving Data Comparison

Article Type of Loom	Working width in "	Specifications					Av. rpm	No. of Looms/ Weaver	Remarks
		Warp Tex	Weft Tex	Ends per cm	Picks per cm	Grey Width cm			
Corduroy									
Sulzer	153"	37	49	25,7	49,6	172	221	20-25	
CV PU	153"	37	49	25,7	49,6	172	250-260	24	
Satin									
Sulzer	153"	30	37	49,8	22,8	170	230	12	
CV PU	153"	30	37	49,8	22,8	170	250-260	20-24	
Poplin									
Sulzer	153"	25	30	39,8	24,0	166	220	8-10	
CV PU	153"	25	30	39,8	24,0	166	260-270	20-24	

Weaving Data Comparison

Article Type of Looms	Working Width	Specifications					rpm	No. of Looms per Weaver	Remarks
		Warp Ne	Weft Ne	Total No. Ends	Picks/ cm	Grey Width			
Rüti C 210	210 cm	24/2+20/2	16	2300+2080	17,5	190	186	8	
280	280 cm	24/2+20/2	16	3120+2784	15,5	255	155	8	
CV C 240	240 cm	24/2+20/2	16	2635+2240	17,5	220	175-180	12-16	

4.724 Analysis of Statistical Data, Weaving

In the following we comment on the data collected with the help of questionnaires which were prepared by the mills participating in the survey. All data relates to the year 1982 if not stated otherwise.

The figures should be read with caution and should be considered more as an indication since the method of compilation could not be checked by the mission and some of the data of the mills were found to be incorrect.

However, as an indicator of where the industry stands vis-à-vis "best mills", most of the data can be used and has been used in this way.

Total Number of Looms installed

The mills visited had a total of 2'923 looms installed representing about 31,3 % of the installed capacity (if one considers that most of the looms were shuttleless looms).

Total Number of Looms operated

Out of a total of 2'923 looms installed 2'198 or 75.19 % were in operation.

Production in Linear Meters and in m2

Production in the mills surveyed in 1982 amounted to about 88 million linear meters or about 135 million m2.

This has to be seen together with the figures elaborated under position 2.125. Here we estimated that the total weaving production of the cotton sector amounted to 261 million m2.
Consequently the production made in the mills surveyed which presented only about 30 % of the looms installed made about 50 % of the production.

Average Operating hours/year

The average operating hours/year worked out to 6'539.

Loom Utilization

The loom utilization which is the relationship between effective loom hours and actual loom hours was 91.73 on an average and is on the lower side.

Average Picks/cm

The average picks/cm work out to 18.8.

Average Grey Width

The average grey width works out to 153 cm and shows that in most mills wide looms are installed which is an advantage.

Average Loom Speed

The average loom speed of the mills surveyed is 196 p.p.m. which is rather low when considering the high ratio of shuttleless weaving machines.

Average Warp Changes

The average number of warp changes amounted to 3'041 i.e. the average warp length was 2'090 m which is reasonable.

Average Technical Efficiency

The result of 92,53 % is good. However, the figures of three companies received (98,97 %, 99,49 %, 107,57 %) cannot be factual.

It can, therefore, be assumed, that the average technical efficiency will be about 89 - 90 %.

Average Overall Efficiency

The average overall efficiency works out to 84,88 % which is on the lower side and should be higher by 4-6 percentage points.

Average Production/Loom-h

The average linear meters per loom hour produced amounted to 6,43 which, however, represents a mixture of both single and double width looms.

Number of Operatives / 100 Looms

The average figure of 34,5 is high and should be not more than 20-26 considering the existing production programme.

Total Number of Styles

With the exception of 2 mills (72 respectively 294 styles) the majority has more or less a standard programme where the number of styles are within a normal range.

Average Production in Weft-m per Operative-Hour

This calculation is based on the number of looms per operative, multiplied by the metres of cloth produced per loom-h, resulting in the total meters of fabric produced per operative-h. Multiplying this result by picks/m of fabric and by reed width in meters the total weft-m inserted per operative-h are obtained.

The average of 65'275 weft-m per operative-hour (range from 14'809 to 148'682) corresponds with a medium European standard for conventional shuttle looms.

Out of the weaving mills surveyed a break-down gives the following picture:

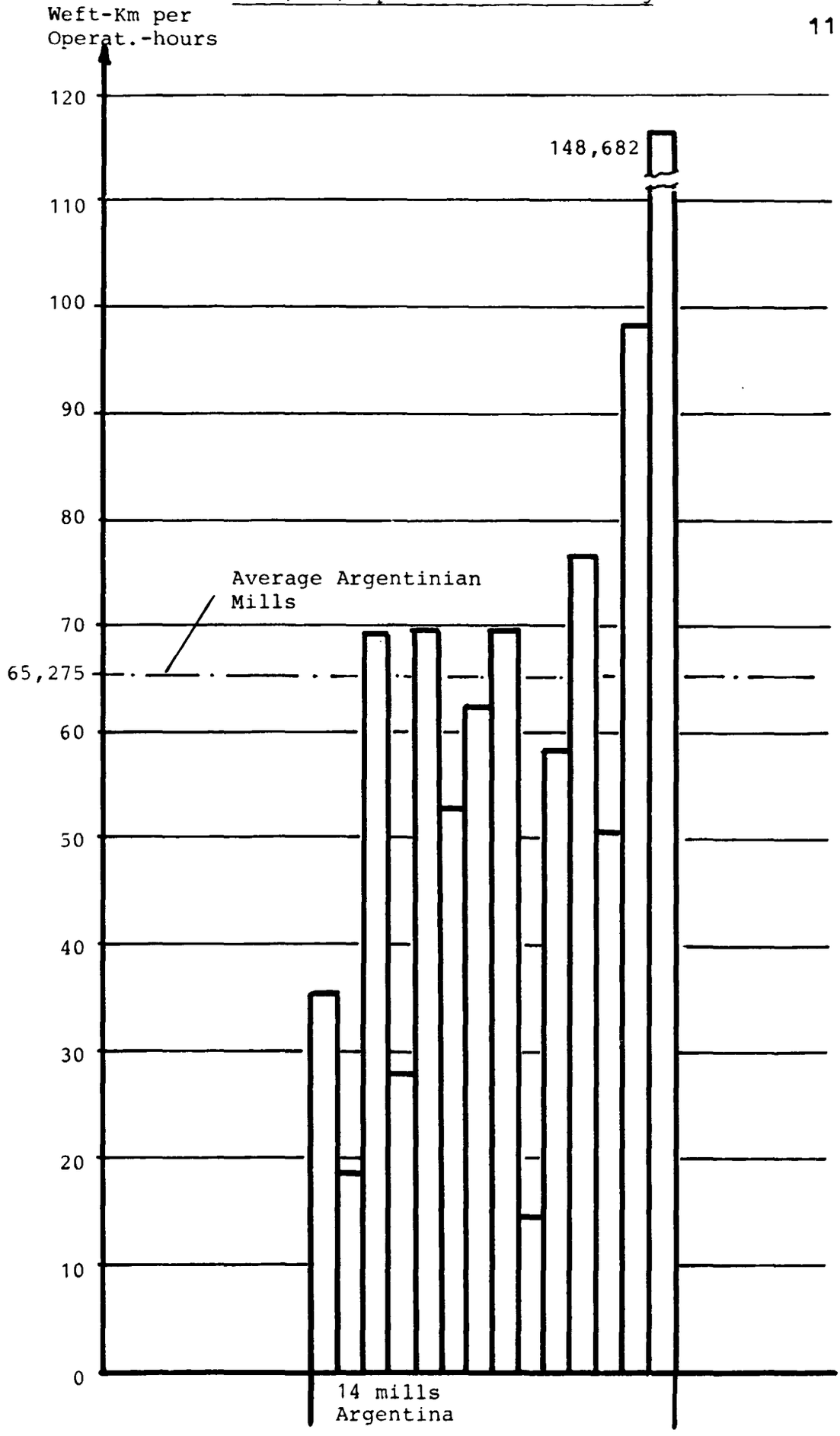
- less than 50'000 weft-m, 4 mills, = 17,6 %
- between 50 - 80'000 weft-m, 8 mills, = 62,5 %
- more than 80'000 weft-m, 2 mills, = 19,9 %

(The percentage given is related to the total linear meters produced by the 14 mills in 1982.)

Considering the advanced technology (shuttle-less weaving machines) used by the majority of the mills,the average result of 65'275 weft-m/operative-hour is rather unsatisfactory.

In best mills in Europe with similar product mix, the weft-m per operative-hour can be as high as 150'000 - 180'000. This figure has also been reached by some of the plants in Argentina.

Comparison of Labour Productivity in
Weft/Km / Operative-hour-Weaving



S U M M A R Y W E A V I N G C O T T O N

NO.	ITEM/CODE	TOTAL	AVERAGE
1	NO.OF LOOMS INSTALLED	2,923	
2	NO.OF LOOMS OPERATED	2,199	
3	DEGREE OF OPERATION (%)		75.19
4	PROD.in 1000 lin m	88,468	
5	m/LOOM/YEAR		40,249
6	AV.OPERATING HOURS		6'539
7	LOOM UTILIZ.		91.73
8	AV.PICKS/CM		18.84
9	AV.GREY CL. WIDTH		153.8
10	AV.LOOM SPEED		196
11	AV.WARP CH.		3041
12	AV.TECHN. EFFICIENCY		92.53
13	AV.OVERALL EFFICIENCY		84.88
14	PROD./LOOM HOUR in METER		6.43
19	PROD-OPERTG. HRS.in WEFT-M		65,275
21	NO.of OPERAT. per 100 LOOMS		34.5
22	TOTAL NO.of STYLES		54
23	NO.of LOOMS/ STYLE		27
24	SECONDS(%)		2.7
25	MIN.PIECE LENGTH		177
26	AV.AGE of		
	SULZER		19.0
	RUETI		6.0
	SAURER		25.6
	DRAPER		31.0
	CROMPTON		20.0
	KOVO		20.0
	TOTAL AVER.		12.5

4.73 Cotton Processing

In the following chapters we have analysed the data as presented in the questionnaires or found during our mill visits: The data relates to the year 1982.

4.731 Mill Buildings and Working Environment

Most of the cotton processing plants visited were housed in up-to-date buildings, some of them were especially built to house indigo dyeing plants.

Capacity Utilisation

The overall capacity utilisation works out to about 60 % which is extremly low.

Millwise the capacity utilisation was as follows (table 4.732/1):

- 2 mills or 17 % have 80 % machine utilisation
- 3 mills or 25 % have 60-80 % machine utilisation
- 7 mills or 58 % have less than 60 % machine utilisation

Productivity

Productivity in yarn dyeing is expressed in operative minutes per kg of yarn dyed.

The average productivity figure works out to 2.8 operative-minutes/kg of yarn dyed. A good standard would be 1.5 op.-min./kg.

gherzi organisation zürich

4.732/1 Yarn Dyeing Plants 1982

Mill (No.)	Installed capacity (t/year)	Utilisation (%)	Workers (No.)	Worked hours (h/ workerxyear)	Productivity (op-min/kg)	Age of Machinery (min.-max.)	Number of m/c (No.)	Average (years)	Technol. level of machines	Re-dyeings (%)
1	1'200	36	15	2'258	4,7	20-30	16	26,7	low	4,5
2	530	40	9	2'574	6,6	6-10	6	8	high	5
3	1'450	63	16	1'816	1,9	3-20	16	14,3	med.	4,8
4	275	80	18	1'980	9,7	7-15	8	11,5	med.	1
5	384	29	6	2'240	7,1	3	12	3	high	4
6	380	12,6	6,5	2'232	18,2	15-30	15	27	low	1
7	1'000	23	5	2'200	2,9	20-45	9	39	low	?
8	3'417	27	68	1'750	7,7	14-30	28	27,4	low	1
9	1'800	64	20	2'095	2,2	11	12	11	med.	1,5
10	2'900	65	20	2'160	1,4	1,7	6	1,7	high	?
11	185	34	4,5	1'980	8,5	20	2	20	med.	0 (?)
12 Indigo	4'860	97	60	2'250	1,7	11	2	11	med.	0 (?)
Total or Average	18'381	59,3	248	2'051	2,8	1,7-45	132	19,4		2,85

The time required to dye one kg of yarn ranges from 1.7 operative minutes to 18.2 operative-minutes. The better managed big plants show also the better productivity figures.

A % breakdown shows the following distribution of the productivity figures:

- 1 mill (or 8 %) better than standard (1,5 op.min./kg)
- 2 mills (or 16 %) - 25 % above standard
- 1 mill (or 8 %) - 50 % " "
- - mill (or 0 %) - 75 % " "
- 1 mill (or 8 %) - 100 % " "
- - mill (or 0 %) - 150 % " "
- 1 mill (or 8 %) - 200 % " "
- - mill (or 0 %) - 300 % " "
- 4 mills (or 32 %) - 500 % " "
- 2 mills (or 16 %) more than 500 % above standard

tr

Age of Equipment

The average age of the equipment surveyed was 19.4 years ranging from 1.7 years to 45 years.

Technological Level

Only about 25 % of the machines installed are of latest technology.

Replacement of obsolete machinery would also mean introduction of new technology and procedures especially in light of a likely increase of the share of synthetic. This would indicate that parallel to the improvement of the technological level the standard of the technical staff would have to be improved through adequate measures.

Re-Dyeing %

The percentage of yarn which had to be redyed is within standard.

4.733 Fabric Dyeing and Finishing

Capacity Utilisation

The overall capacity utilisation worked out to 71 % and can be termed satisfactory if we consider the level of technology of this equipment installed, even though in some mills the utilisation is very much below standard as the following % breakdown shows:

- 2 mills = 22 % have 80 and more % utilisation,
- 4 mills = 44 % have 60-80 % utilisation
- 3 mills = 33 % have less than 60 % utilisation

Productivity

The average figure of 1.5 operative-minutes/kg is slightly above the standard figure of 1.3 op.-min./kg considered to be the optimum for the existing product mix and the machinery employed.

4.7331 Fabric Dyeing and Finishing 1 9 8 2

Mill (No.)	Installed capacity (Mill.m/year)	Utilisation (%)	Workers (No.)	Worked hours (h/worker x year)	Productivity (max-min/m)	Age of main m/c min-max.	Number of main m/c (No.)	Average age of main m/c (years)	Technolog. level m/c	% of Seconds
2	5'775	72	50	2'574	1,8	1-5	14	2,8	high	?
5	6'840	28	21	2'240	1,5	3	12	3	high	?
6	1'053	49	31	2'232	8,0	12-40	17	26,9	low-med.	3
8	2'646	34	98	1'750	11,4	8-35	35	23,5	low-med.	0,1
9	35'000	68	172	2'095	0,9	2-10	32	8,9	high	7-15
11	7'229	100	125	1'860	1,9	5-35	22	14,6	med.-high	3
3	3'760	65	53	2'197	2,8	2-20	25	12,8	high	1,6
12 Indigo	15'450	100	128	2'250	1,1	5-14	8	9,1	high	8
13	15'300	66	113	2'041	1,4	12-40	28	27	low	2,8
Tot. 9	93'053	71	791	2'079	1,5	1-40	193	17,9		4,7 %

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Age of Equipment

The average age of the equipment works out to 17.9 years and ranges from 2.8 to 27 years. In some mills the replacement of equipment is urgently requested.

The average age for bleaching and mercerizing is 20 years.

Technological Level

The technological level of the main machinery varies widely, however, modern technology is well presented with 47 %. Only 14 % has to be classified as conventional and outdated equipment.

% of Seconds

The % of seconds (substandard quality) was found to be about 4.7 % and is to be considered on the higher side (standard 2 - 3 %).

4.8 Woollen and Worsted Industry

Argentina is the 4th largest wool producer in the world having about 6 % (1981) of the world's greasy wool production. However, it has only a small local woollen and worsted industry of about 348'000 spindles and 5'900 looms (1980).

Most of the wool is exported and in 1981 Argentina had a share of 6 % in the export of virgin wool.

Surprisingly, Argentina has a very small export of wool tops only about 8 Mio kgs in 1980 compared to Uruguay which has an export of 21.1 Mio kgs.

The value added between greasy wool and wool tops is about 0.70 $/kg.

The mission could only see two worsted mills during the field study. Both mills, however, worked with acrylic due to the high risk connected with the processing of wool at present.

It is proposed that the wool sector is analysed in a separate in-depth study since during the present study too little data was made available to the mission to come up with comments and recommendations.

4.81 Trends in the Wool Sector of Argentina

In the absence of data on a mill level we give below some comments on trends which can be established on the basis of statistical data presented to us:

Exports of Wool Scoured

The export of scoured wool shows the following data for the year: 1932 - 1975 - 1981 (scource by FITA) in MTY.

1932 - 129'786 t = 100.0 %

1975 - 79'068 t = 60.9 %

1981 - 104'327 t = 80.4 %.

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There was a heavy decline between 1932 and 1975 by about 39 %.

After 1975 a recovery took place, so that the gap towards 1932 was only about 20 %.

Due to the lack of further data for 1982 and 1983, we cannot see, if the upwards trend ceased or continued or the recovery strengthened. It therefore can be assumed that the 1932 figure have not yet been reached.

The worldwide recession of the years 1980 - 1983 might be one of the reasons, that the export demand was lower, so that the exports came almost to stagnation point.

Consumption of Wool in Argentina

The consumption figures are shown below:

1932: 14'850 MTY = 100 %

1975: 45'000 MTY = 303 %

1981: 13'700 MTY = 92 %.

Though there was a heavy increase between 1932 and 1975 up to 30.3 %, the consumption figure for 1981 was below the figure of 1932 and reached only 92 % of the volume of 1932.

This sharp decline reflects the bad macroeconomic situation of the last 5 - 6 years in Argentina with a lot of bankruptcies and closures of textile mills.

Yarn Production

The yarn production in the years 1932 - 1975 - 1981 was as follows:

1932: 10'576 MTY = 100 %

1975: 28'200 MTY = 266 %

1981: 13 355 MTY = 126 %.

Although the increase from 1932 up to 1975 was only 166 % (compared with increase for total wool-consumption up to more than 200 %), there was in 1981 still an increase up to 126 % against 1932.

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But also here a sharp decline took place from 1975 to 1982, from 28'200 to 13'355 MTY, or by more than a half. The heavy decline of yarn production during the last years highlights once more the large recession Argentina had, and surely will face in the future.

Yarn imports: 1932 946 MTY
1975 16 MTY and
1981 195 MTY.

The above figures show that Argentina had reached in 1975 a high degree of self-sufficiency concerning wool-yarns, whilst in the last years the imports increased again, however, due to the very low demands, the recovery was not significant as compared with the data of 1932 (946 MTY).

Weaving Production

The yearly production is to be seen from the figures below (in MTY):

1932 - 10'569 MTY
1975 - 24'500 MTY
1981 - 13'205 MTY.

From this it can be seen that this follows the same trend as per the yarn production statement (see above). After a big increase up to 1975, the production fell to 13'205 MTY in 1981, due again to the worldwide recession and especially due to the overall economic deficiencies in Argentina during the last years.

Spinning Spindles Installed (Worsted and Woollen System)

The spindles installed in 1976 were the same as in 1981 at about 347'000, with no changes apparent.

As figures for 1932 are not available, when comparing the spindles installed with the related production of

1975 = 28'200 MTY and
1981 = 13'355 MTY.

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This data reflects the poor productivity performance of the mills of the last years and the extremely low spindle utilization or production per spindle and year, which fell below 50 % in 1981 to that of 1975.

1975/76: 28'200'000 kg yarn: 347'000 spindles = 81 kg/spindle/year.

1981: 13'355'000 kg/year: 347'000 spindles = 38 kg/spindle/year.

This indicates that a lot of spindles must have been stopped, or were working on a single shift basis or less.

Looms Installed

Of the looms installed and restricted to the wool-textile sector the following figures show:

1932: 2'200 looms installed

1975: 6'000 looms installed

1982: 5'700 looms installed.

The large increase from 2'200 (1932) up to 6'000 looms in 1975 gives an impression of the strong development up to 1975. Also, if we take in consideration, that the looms installed were mostly shuttle looms up to this date - 1975 -, we can see from this figure the efforts Argentina has made to become independent from imports.

The decline of looms installed from 1975 (6'000) to 1981 (5'700) does not give a correct picture of what has happened.

Since we know, that the newly installed looms - from 1975 onwards - were mostly shuttleless looms with a more as double or three fold production capacity each, compared with that of the 6'000 conventional looms installed 1975, it is a matter of fact, that the production capacity of fewer looms installed 1981 is very much bigger than that of the 6'000 looms installed in 1975.

Although the weaving capacity of 1981 was bigger than in 1975, the production was down by 54 % ! (1975: 24'500 MTY = 100 %, 1981: 13'205 MTY = 54 %).

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This fact alone gives some idea, how low the weaving capacity utilization must have decreased duringthe last years. A lot of looms were stopped nearly the whole year or were run on a 1 shift only. Some weaving mills were completely stopped.

All this reflects the very bad economic situation in Argentina during the years which followed 1975.

The exports of wool fabrics, which in 1932 reached 146 MTY were down in 1975 by 9 MTY, but gained in 1981 to only 123 MTY, so that inspite of the highly increased weaving capacity the exports did not even reach the low quantities of the 1932 figure (146 MTY).

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4.9 Knitting Industry

None of the knitting companies were visited during the study. It is unterstood that the whole machine knitting sector consists of about 250 units with 6'000 - 7'000 circular machines. According to trade informations circular weft machines are predominant although there are also about 250 units with flatbed machines in operation for fully fashioned body garment.

Yarns are supplied by the local spinning industry or are imported in the case of synthetics. No figures on machine utilization and other relevant data could be made available to the mission. 80 % of the plants are said to be located in greater Buenos Aires.

Including garment making this sub-sector employs some 13'000 persons but there are only 4 large integrated companies with employment of 500 - 1'300 persons.

Industry sources indicate that the knitting sub-sector was less severely affected by the general economic recession than the cotton and wool industry. One of the reasons given was higher price competitiveness vis-à-vis imports and greater versatility of the machinery.

As regards exports and cost of input factors as well as financial charges this sub-sector suffers under the same difficulties as the cotton and wool industry.

tr 4.10 Garment Industry

Little information is also available about the garment sub-sector, although with 30 to 40 000 persons employed in 1 700 plants (1) it has half the size of the textile industry in terms of employment and contributes 0,3 % to the GDP.

The garment industry was a net exporter up to 1979 in value terms and during this year exports were more than 50 % higher as compared to those of the textile industry. After this period garment exports vary between 20 - 30 % of the total textile exports (exports by product groups see annex).

Almost 87 % of the garment operations with 88 % of total employment are located in the capital BA and the province of BA (17 % and 30 %). Cordoba and Santa Fé districts are the only other noteworthy locations of the industry with together 10 % of the plants and 8 % of the employment.

The majority of the plants (48 %) employs 5 workers or less, 43 % of the plants have between 6 and 50 workers and only 4 % of the plants employ more than 100 workers.

Except for the period during 1979/1980 when imports were liberalized, the garment industry depends wholly on the domestic textile industry for the supply of raw material.

Because of the predominantly oligopolistic structure of the textile industry, the garment makers feel that they have only limited influence on the supply of raw materials especially as far as prices, quality, continuity of supply and fashion are concerned. This fact constitutes one of the major problems of the garment industry. The present relation of the two federations representing the textile and garment sub-sectors appears not to be favourable for creating an environment which would be conducive to solve the above mentioned problems.

(1) Industry sources estimates today are about 3 000 units. Latest available official information: Datos Basicos de la Industria Manufacturera 1980/81, Dirección General de Información Industrial, Secretaría de Industria y Minería.

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The import tax on all textiles are presently fixed at a uniform 38 % (21 % for some exceptions) when in 1976 the tax was from 80 % to 200 %. This also explains to some extent the domestic market orientation of the local producers.

For the import of machinery and spares tariffs between 10 % and 35 % as against 80 % - 90 % in 1975/76 prevail, but the anomalies mentioned in previous parts of the report caused by incomplete definition of types of machinery have not been completely abolished.

Due of the most frequent complaints of the mill management was the scarcity of money for the financing of the working capital. Although the ratio, sales to working capital, is not disproportionately high and gives no indication of serious working capital deficiencies, it is in fact the deteriorating current ratio and the testing of the working capital by comparison with long-term debt, inventory and accounts receivable, which point to a critical operational weakness. The major problem will therefore be the financing of the additional working capital at acceptable conditions required to increase sales again which have decreased over the 4 year period from 1979 to 1982 by more than 50 %.

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5. COST OF PRODUCTS AND INTERNATIONAL COMPARISONS

5.1 Cost Structure and Competitivenes

The sources of data used are the following:

- Profit/loss accounts for the period Sept. 81 and Aug. 82
- Profit/loss a/c for the calender year 1982
- Profit/loss a/c for the month of Dec. 1982 and June 1983

They have been compiled from the questionnaires and have been verified and corrected during the mill visits with cost accounting departments. For international comparison and indexing June 1983 values have been used as basis and were converted at the prevailing exchange rate at that date (1 US $ = 8.5 $ a).

5.11 Cost of Yarn (Cotton and C/PES blends)

Values obtained from the companies investigated for the input factors show substantial variations particularly for cotton, wages and energy, while maintenance and others are fairly uniform (See Table 5.11/1). These variations oscillate between 73% for Ne 10 yarns and 58% for 40s combed.

Cost structure of various Companies (Converted on June 1983 Basis)

No. 5.11/1

Description		Raw material		Wages	Energy	Mainten. + others	Subtotal
		Quality	Cost				
OE	8/1	C 1/2	2,13	0,31	0,12	0,01	2,57
	8/1	C 1/2	1,85	0,07	0,03	0,02	1,97
	8/2	C 1/2	2,13	0,39	0,15	0,01	2,68
	12/1	C 1/2	1,85	0,11	0,04	0,04	2,04
	16/1	C 1/2	1,85	0,15	0,06	0,07	2,13
Carded	6/1	C 1/2	1,64	0,51	0,19	0,01	2,35
	7/1	C 1/2	1,64	0,51	0,22	0,01	2,38
	8/1	C 1/2	1,64	0,52	0,22	0,01	2,39
	8/1	C 1/2	2,34	0,14	0,04	0,01	2,53
	10/1	C 1/2	1,64	0,54	0,27	0,01	2,46
	12/1	C 1/2	2,34	0,17	0,05	0,01	2,57
	12/1	C 1/2	1,64	0,54	0,30	0,01	2,49
	14/1	C 1/2	1,64	0,57	0,35	0,01	2,57
	16/1	C 1/2	1,64	0,59	0,38	0,01	2,62
	16/1	C 1/2	2,34	0,20	0,05	0,01	2,60
	16/1	C 1/2	2,13	0,40	0,10	0,01	2,64
	18/1	C 1/2	1,64	0,66	0,34	0,01	2,65
	20/1	C 1/2	1,64	0,71	0,59	0,02	2,96
	20/1	C 1/2	2,34	0,23	0,07	0,01	2,65
	24/1	C 1/2	2,34	0,27	0,08	0,02	2,71
	24/1	C 1/2	1,64	0,77	0,66	0,02	3,09
For Represent. value	24/1	C 1/2	2,16	0,38	0,11	0,06	2,71
	24/2	C 1/2	2,13	0,60	0,15	0,01	2,89
	30/1	C 1/2	2,34	0,34	0,10	0,02	2,80
Combed	12/1	C 1/2	2,66	0,22	0,06	0,04	2,98
	16/1	C 1/2	2,66	0,24	0,07	0,04	3,01
	20/1	C	2,66	0,28	0,08	0,04	3,06
	24/1	C	2,66	0,32	0,09	0,04	3,11
	30/1	C	2,36	0,50	0,12	0,01	2,99
	30/1	C	2,66	0,38	0,12	0,04	3,20
	30/1	C	2,76	0,56	0,18	0,14	3,64
	40/1	C	2,76	0,65	0,21	0,16	3,78
65/35 Poly/ Cotton	20/1		2,67	0,24	0,14	0,05	3,10
	26/1		2,67	0,26	0,15	0,06	3,13
	40/1		2,67	0,32	0,15	0,06	3,24

1 US $ = 8.5 $ a

For wages corresponding variations amount to 5% - 14%, while interest and depreciation charges generally correspond to approx. 20% of total costs, excluding the fixed cost component for administration and sales.

The main reason given for variations of raw material prices is the financial situation of companies for timely procurement of cotton and quality considerations, while the difference in wages is accounted for by labour productivity.

For international comparisons representative figures for a carded 24 Ne yarn have been selected. The result is shown in Table no. 5.11/2 which indicates that with relatively high raw material cost and real interest total cost amount to $ a 33.83 which yields a sufficient sales margin of 7% on the domestic market. The export price fob of US $ 3.74 is not competitive with international fob prices which averaged US $ 2,40 at that time. Exports of Argentina in 1982 of 4221 tons of yarn at an average price of US $ 2,80/kg indicate that the majority of the exporters sold at a loss at marginal prices. This fact has been confirmed during the interviews in the field, although some companies with better than average cost structure exported profitably.

Cost Comparison
(en US $)

No. 5.11/2

Description	Representat. cost in Argentina of 24 carded	Local Market	Export calculation
Raw material	2,16		
Wages	0,38		
Energy	0,11		
Maintenance	0,01		
Other costs	0,05		
Interest	0,46		
Amortisation	0,21		
Other fixed costs	0,30		
Adminstr. & Sales	0,30		
Total cost June 1983			
in US $		3,98	3,98
In $ a.		33,83	
Nett sales price		36,20	
After 90 days		55.-	
Exporting			
- 2% S/50% = 1% financing			
- 5% redemeable			
Nett cost F.O.B. in US $			3,74
Sales prices of other countries (FOB)			
S. Korea			2,22
Taiwan			2,40
Pakistan			2,08
Brazil			2,25
India			2,63
Turkey			2,50

Calculation on the exchange rate of 8.50 $ a. = 1 US $

Average value for June 1983

A more detailed comparison of the cost structure of Argentina's spinning operations with seven major internationally competing countries is carried out on the basis of a model developed by the International Textile machinery Manufactures (ITMF) and demonstrates clearly the areas of comparative disadvantage.

Some adjustments had to be made for wages - only including direct labour on the basis of 7.5 min./kg and a value of 0,0338 US $/ minute - to make them comparable to the ITMF model.

The calculations are made once including financial charges and once without these. (See tables 5.11/3 and 5.11/4).

The total costs do not include fixed costs of administration. In the case of Brazil, India, Corea and Turkey the costs are substantially higher than prevailing world market prices which is explained by subsidised export prices in these countries.

Comparison Yarn Cost in US $/Kg

(without interest charges)

No. 5.11/3

Descripción	Argent.	Brazil	Germany	India	Japan	S. Korea	U.S.A.	Turkey
Raw material	2,00	1,81	2,04	1,75	2,08	2,07	1,81	1,60
Waste	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16
Wages	0,28	0,16	0,37	0,12	0,18	0,06	0,25	0,62
Energy	0,11	0,08	0,14	0,12	0,21	0,16	0,08	0,09
Mainten. + others	0,06	0,04	0,03	0,03	0,04	0,03	0,04	0,07
Depreciation	0,21	0,30	0,30	0,20	0,34	0,19	0,29	0,31
Production cost	0,82	0,74	1,00	0,63	0,93	0,60	0,82	1,25
Total cost	2,82	2,55	3,04	2,38	3,01	2,67	2,63	2,85
	(in % of the total cost)							
Raw material	70,92	70,98	67,10	73,52	69,10	77,52	68,82	56,14
Waste	5,67	6,27	5,26	6,72	5,31	5,99	6,08	5,61
Wages	9,93	6,27	12,17	5,04	5,98	2,24	9,50	21,75
Energy	3,90	3,13	4,60	5,04	6,97	5,99	3,04	3,15
Mainten. + others	2,13	1,56	0,98	1,26	1,32	1,12	1,52	2,45
Amortisation	7,45	11,76	9,86	8,40	11,29	7,11	11,02	10,87

Exch. Rate: 8,5 $ a. = 1 US $

Comparison Yarn Cost in US $/Kg

(including interest charges)

No. 5.11/4

Descripción	Argent.	Brazil	Germany	India	Japan	S.Korea	U.S.A.	Turkey
Raw material	2,00	1,81	2,04	1,75	2,08	2,07	1,81	1,60
Waste	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16
Wages	0,25	0,16	0,37	0,12	0,18	0,06	0,25	0,62
Energy	0,11	0,08	0,14	0,12	0,21	0,16	0,08	0,09
Mainten. + others	0,06	0,04	0,03	0,03	0,04	0,03	0,04	0,07
Depreciation	0,21	0,30	0,30	0,20	0,34	0,19	0,20	0,31
Interest	0,46	0,56	0,21	0,19	0,24	0,21	0,25	0,18
Production cost	1,25	1,30	1,21	0,82	1,17	0,81	1,07	1,43
Total cost	3,25	3,11	3,25	2,57	3,25	2,88	2,88	3,03
	(in % of the total cost)							
Raw material	61,54	58,19	62,76	68,09	64.-	71,87	62,84	52,80
Waste	4,92	5,14	4,92	6,22	4,92	5,55	5,55	5,28
Wages	7,69	5,14	11,38	4,66	5,53	2,08	8,68	20,46
Energy	3,39	2,52	4,30	4,66	6,46	5,55	2,77	2,97
Maintenance	1,85	1,28	0,92	1,16	1,23	1,04	1,38	2,31
Amortisation	6,46	9,64	9,23	7,78	10,46	6,59	10,06	10,23
Interest	14,15	18.-	6,46	7,39	7,38	7,29	8,68	5,94

be

In the case without interest only countries like W. Germany, Japan, USA and Turkey are more expensive than Argentina. This is due to higher manpower costs, non-availability of local raw material in W. Germany and Japan, and higher depreciation. Argentina has no comparative advantage over her direct competitors like Brazil and India and countries like USA and Turkey which grow cotton locally.

Including the interest charges Argentina becomes one of the countries with the higher cost on the same level as W. Germany and Japan with no other offsetting advantages in raw material or cheap labour combined with high productivity which is the case to some extent in Brazil and Turkey.

be

5.12 Cost of Fabrics

As has been mentioned already in the preceding technical part of the study, the availability of data is rather limited for the weaving sub-sector and again, the variations in the article costing of varicus mills are found quite striking similar as in spinning. The differences mainly originate from the areas of financial charges and cost of yarn.

When comparing the costs of some typical articles with their world market prices it is obvious that as in spinning there is little chance of exporting on a profit basis for the average Arg. producer, although some of the products included in the comparison table 5.12/1 are presently exported for reason of increased capacity utilization. The quality of both yarn and fabrics has generally been found satisfactory and absolutely comparable to international standards.

Average Cost Comparison of Fabrics in US $/m²

Table No. 5.12/1

Description	Yarn count Ne	Cloth construction	g/m²	Width cm	Yarn: Raw material	Yarn: Production costs	Chem. prod.	Wages	Energy	Maintenance	Inter.	Amort.	Sub-Total	Sales and admin.	Total	Hong-Kong FOB	Pakist.	Germany
Dyed yarn	9,6 x 11,4	27,7 x 17,3	485	150	0,92	0,48	0,21	0,22	0,03	0,08	0,25	0,10	2,29	0,40	2,69	1,7[illegible]		,1
in %					34,20	17,84	7,80	8,17	1,11	2,97	9,29	3,71		14,87	100.-			
Grey cloth	12 x 16	50 x 29	375	155	0,71	0,45		0,18	0,03	0,08	0,25	0,10	1,80	0,40	2,20	1,33		1,[illegible]
in %					32,27	20,45		8,18	1,36	3,63	11,36	4,51		18,18	100.-			
Bleached sheets	16 x 16	24 x 18	185	150	0,35	0,28	0,03	0,11	0,09	0,09	0,25	0,10	1,30	0,40	1,70			1,[illegible]
in %					20,58	16,47	1,76	6,47	5,29	5,29	14,70	5,88		23,52	100.-			
Industrial fabric dyed	20 x 16	24 x 18	170	150	0,32	0,30	0,09	0,11	0,09	0,09	0,25	0,10	1,35	0,40	1,75	0,[illegible]	0,[illegible]	
in %					18,28	17,14	5,14	6,28	5,14	5,14	14,28	5,71		22,85				
																Cotton Outlook		GTO

be

In Table 5.12/2 the ITMF model has again been used for the comparison of cost structures of various countries with those prevailing in Argentina.
The highest cost are found in Argentina which has the highest cotton cost of all cotton growing countries and the highest financial costs.

Average Cost Comparison of Fabrics in US $/m²

Fabric: 24 s x 24 s / 30 x 25

186 g/m² 150 cm wide, raw

Table No. 5.12/2

Country	Yarn		Chem. products	Wages	Energy	Main-tenance	Interest	Amortiz.	Total
	Raw material	Production cost							
				Value in US $					
Argentina	0,35	0,23		0,10	0,03	0,08	0,25	0,10	1,14
Brazil	0,34	0,24		0,07	0,03	0,04	0,18	0,10	1.-
Germany	0,38	0,23		0,19	0,04	0,04	0,07	0,10	1,05
India	0,33	0,15		0,05	0,04	0,05	0,08	0,08	0,78
Japan	0,39	0,22		0,10	0,06	0,05	0,06	0,09	0,97
S. Korea	0,39	0,15		0,03	0,05	0,04	0,08	0,09	0,83
U.S.A.	0,34	0,23		0,12	0,02	0,04	0,08	0,09	0,92
				In % of total					
Argentina	22,72	14,93		6,49	1,94	5,19	16,23	6,49	
Brazil	24,28	17,14		5.-	2,14	2,85	12,85	7,14	
Germany	26,20	15,86		13,10	2,75	2,75	4,82	6,89	
India	27,96	12,71		4,23	3,38	4,23	6,77	6,77	
Japan	28,46	16,05		7,29	4,32	3,64	4,37	6,56	
S. Korea	31,70	12,19		2,43	4,06	3,25	6,50	7,31	
U.S.A.	25,75	17,42		9,09	1,51	3,03	6,06	6,81	
Turkey	23,07	20,76		7,69	1,53	5,38	5,38	5,38	

be 5.13 Cost of Processing

The basis for the calculation has been data provided by the processing departments of integrated mills which have also been confirmed by some of the big commission processing plants.

The following cost were evaluated =

fabrics - bleaching 0,25 US $/lm
dyeing 0,40 US $/lm
printing 0,70 US $/lm

yarn - bleaching and
dyeing up to 0,90 US $/kg

Contrary to spinning and weaving cost the processing cost structure compares favourable with US and Central European countries and is on average not substantially higher than the cost of low wage countries.

be 5.14 Cost of Cotton

As has already been shown in the spinning cost comparison the cotton price paid by the mills is not subsidized and corresponds more or less to world market prices. It is generally higher than the price paid by mills in cotton growing countries. The 10% export tax on cotton fibre that was introduced to stabilize local cotton prices, has been abolished since April 1983.

The following table shows the difference in price paid by various mills for certain types of Cotton per kg:

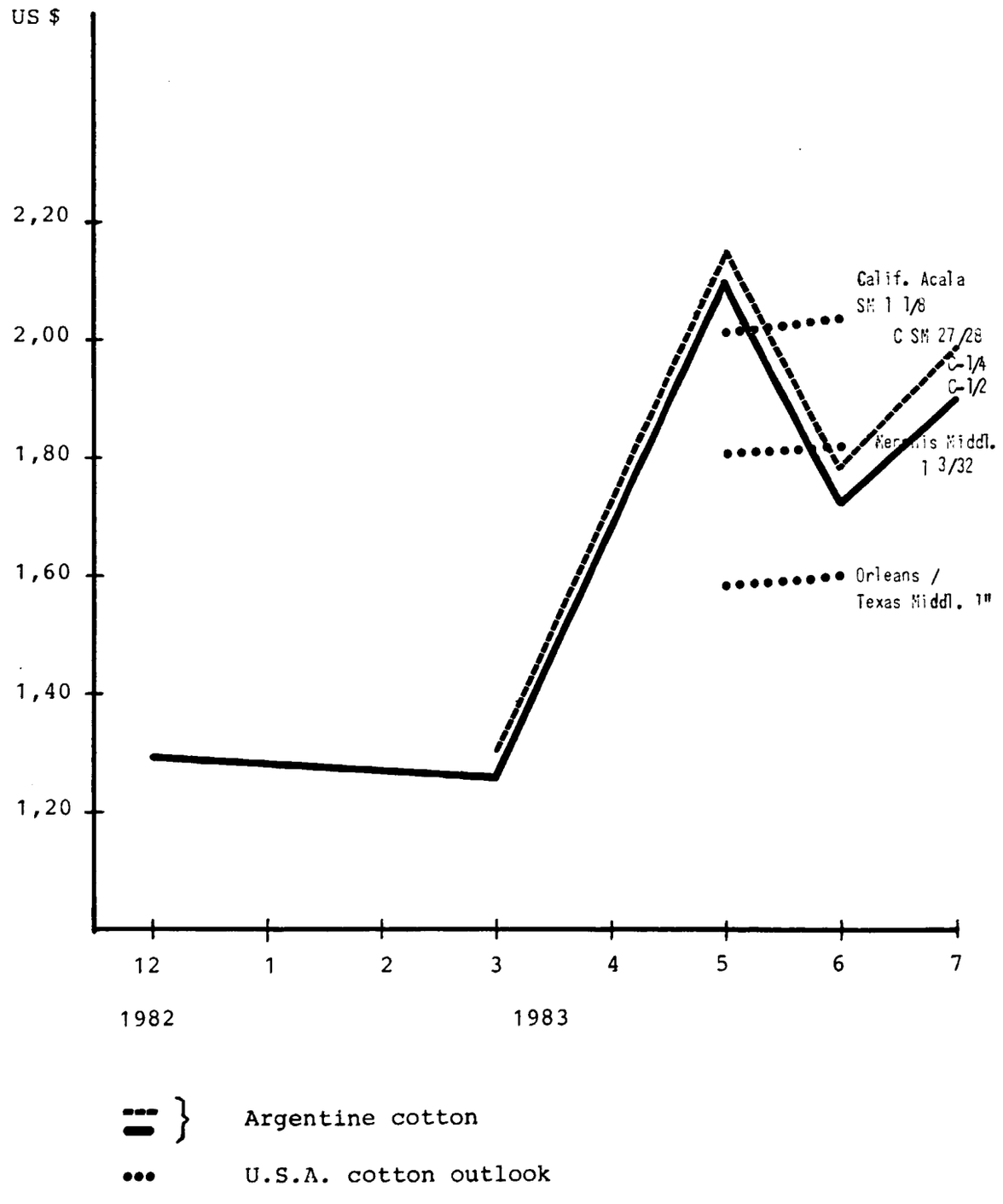
Cotton type	Price $ a	Date	Exchange rate	Price US $
C 1/2	6.19	12.82	4.85	1.28
	8.40	3.83	6.8	1.24
	8.84	3.83	6.8	1.30
	17.22	5.83	8.2	2.10
	15.27	6.83	8.5	1.80
	14.00	6.83	8.5	1.65
	16.9	7.83	9.1	1.86
C 1/4	8.675	3.83	6.8	1.28
	18.00	7.83	9.1	1.98
C	17.70	6.83	8.9	1.98
	18.00	7.83	9.1	1.99

The Table 5.14/1 demonstrates that cotton prices paid by the mills are by and large within the range of international prices for the type predominantly used (C 1/2) which corresponds to Calif Acala SM and Memph. Middl.

fu

Prices for Different Types of Cotton - fob.

Table 5.14/1



5.2 Financial Performance of the Textile Sector

The financial performance and status of the textile sector(1) deteriorated during the period from 1979 to 1982. The mills lost money on operations due to increased operating cost and high financial charges. The liquidity position remained precarious or grew worse and the capital structure deteriorated. Return to investment was substandard and could not attract investor interest. The following table illustrate the situation on the basis of key financial ratios calculated for integrated and spinning mills. Also an example of a best practice mill and a poor performance mill is shown as an example of the diversified picture of the textile industry.

(1) Based on 18 questionnaires, financial statements and information collected during the mill visits.

be

Financial Ratios of Cotton Mills in %

	1979	1981	1982
	All Cotton Mills		
Current Ratio	106	101	117
Debt / Equity	52/48	60/40	61/39
Op. Profit / Sales	6	1.7	(-9.4)
Gross Profit / F. Assets	3.5	0.7	(-3.4)
GP / Equity	7,4	1.8	(-8.7)
Sales / Work. Capital	116	83	82
Sales / Finished Stock	360	196	256
	Spinning Mills		
Current Ratio	133	93	86
Debt / Equity	36/64	58/42	54/46
Op. Profit / Sales	34	(-19)	(-1.2)
Gross Profit / F. Assets	12.6	(-4.9)	(-0.4)
GP / Equity	19.7	(11.6)	(- 9)
Sales / Work. Capital	88	59	79
Sales / Finished Stock	1687	483	2123
	Best Practice mill		
Current Ratio	323	1825	256
Debt / Equity	15/85	4/96	32/68
Op. Profit / Sales	46	12	6
Gross Profit / F. Assets	27	5	3
GP / Equity	32	5	4
Sales / Work. Capital	135	104	100
Sales / Finished Stock	19658	1585	n.a.
	Poor performance mill		
Current Ratio	35	12	9
Debt / Equity	56/44	73 /27	77/23
Op. Profit / Sales	7	(-126)	(-119)
Gross Profit / F. Assets	1.3	(-12)	(-12)
GP / Equity	2.8	(-44)	(-50)
Sales / Work. Capital	97	112	137
Sales / Finished Stock	1093	1745	0

be

The declining profits in the textile sector caused a large number of bankruptcies and closures. The government introduced several measures mostly unsuccessful, amongst others official debt refinancing systems, one of which ('Bono') provided a 50% debt refinancing at 3% rate within 7 years, including 3 years of grace.

Only a small percentage of the total debt was refinanced and the critical situation by laying-off workers, shifting of assets to the financial market, importing and distributing products which they previously produced. Anothers smaller part of the industrialists invested and tried to improve the productivity and overall efficiency of their mills.

While the tax system compared to other countries constitutes no undue burden, (20% value added tax, provincial tax 1,5% on gross profit, corporate tax on profit maximum 33%) the benefits of investment incentives did not show until now an overall noticeable impact, because they only accrue to companies that are willing to transfer their operation into the interior and South of the Country. The main benefits are that the companies are free of income tax, value added tax and reduced or taxfree import of machinery and spares.

Export prospects are poor given the cost structure of the companies in the context of the overall critical economic situation which cannot be easily compensated by a 5% (yarn) and 10% (all other textiles and apparel) reimbursment on the fob value and a modest export credit line at preferential interest (6% instead of actual 18%) on 50% of the Sales value. Encouragement of exports will need an overall rehabilitation and stabilization of the Country's economic and financial situation more than specific subsidies on a sector basis.

An investigation published by F.I.T.A. shows that effective protection through import tariffs for fabrics had been restored by December 1982 at almost the same level as in the beginning of 1978 (53%) while it had been strongly negative during the 1979-80 period.

be

The import tax on all textiles are presently fixed at a uniform 38% (21% for some exceptions) when in 1976 the tax was from 80% to 200%. This would also explain to some extent the domestic market orientation of the local producers.

For the import of machinery and spares tariffs between 10% and 35% as against 80% - 90% in 1975/76 prevail, but the anomalies mentioned in previous parts of the report caused by incomplete definition of types of machinery have not been completely abolished.

Neither for cotton yarn and fabrics as well as wool products have the existing import quota restrictions of the USA and the EEC been a constraint during the last 5 years with an average of less than 50% of quota fulfilment.

tr

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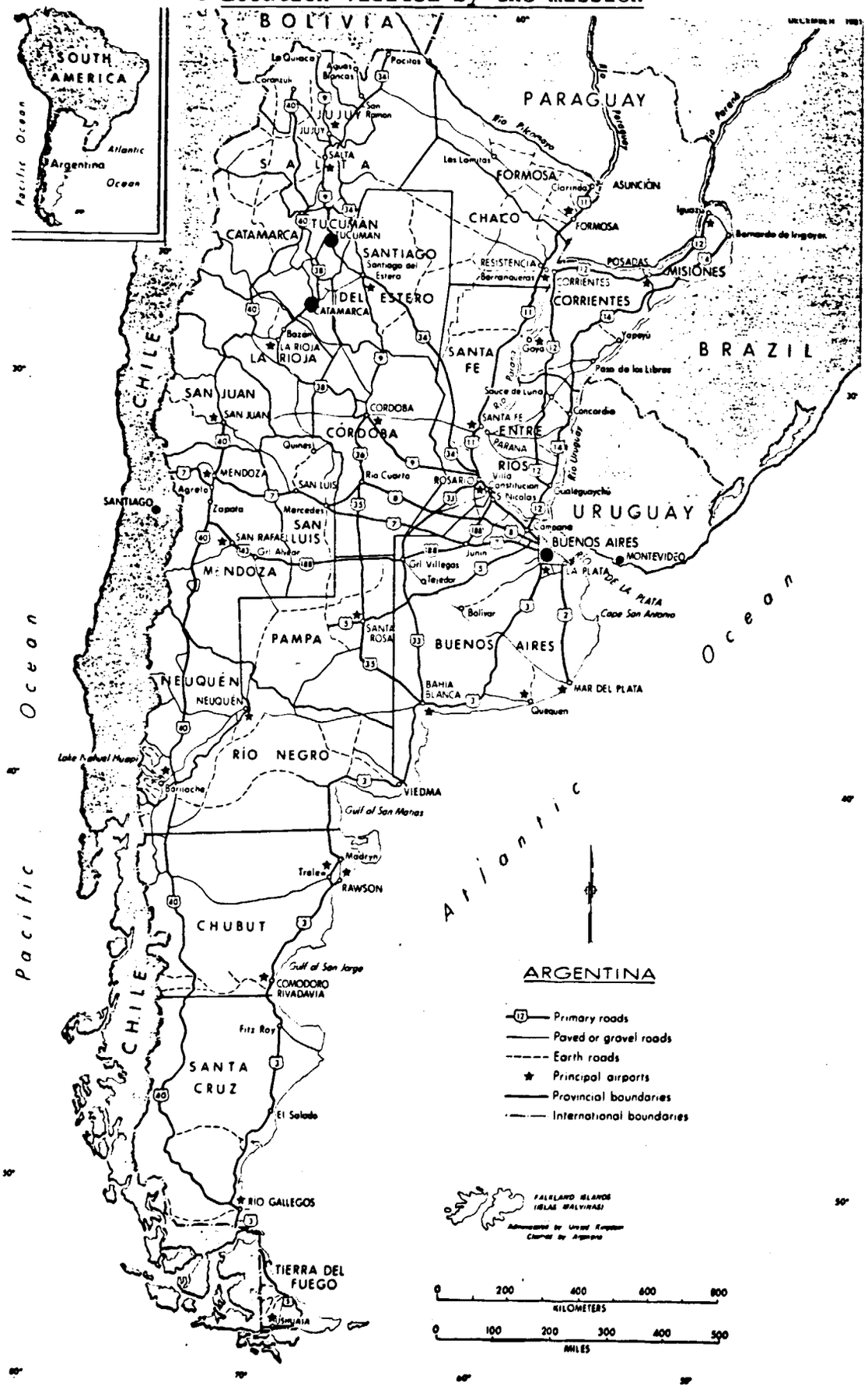
● Location visited by the mission



Annex No. 2

STATUS OF QUESTIONNAIRES RECEIVED AND MILLS VISITED

CODE	COTT. SPDLS.	COTT. ROT.	WOOL SPDLS.	COTT. LOOMS	WOOL LOOMS	PROD. 1000 to	PROJ. 1000 Ma(L)
1	2944	336	0	40	0	3129	4544
2 B	15960	0	0	182	0	4524	8366
3	26012	504	0	176	0	8079	14239
4	7776	0	0	0	0	1814	0
5	0	0	0	0	0	0	0
6 B	20072	0	0	380	0	2604	10536
7 T	29184	0	0	394	0	4281	7729
8	14754	0	0	140	0	0	7363
9 B	0	0	7112	0	48	725	1068
10 B	42260	504	0	0	0	1621	0
11	0	0	0	214	0	0	582
12	0	0	0	192	0	0	1831
13 B	37296	1120	0	0	0	3529	0
14 T	12096	0	0	0	0	1607	0
15 T	14000	0	0	0	0	1621	0
16 B	16480	0	0	0	0	770	0
17 B	18696	0	0	294	0	1114	4161
18	0	0	0	0	36	0	124
19	24000	0	0	0	0	1170	0
20	9600	0	0	8	0	0	0
21 B	0	0	9229	0	60	1061	2598
22 C	0	1344	0	0	0	826	0
23	17892	216	0	202	0	1516	3922
24 T	26320	0	0	0	0	0	0
25 C	11520	0	0	0	0	0	0
26	0	0	0	718	0	0	11295
27	18000	0	0	40	0	0	0
28	0	0	0	0	0	0	0
TOTAL	384102	4024	16440	2530	144	40521	80578
THEREFORE							
COTTON	384102	4024		2970		39745	76818
VALUES 1981	1125000	22296		19100		75721	261000
IN %	32.30	15.80		15.30		49.20	27.40
THEREFORE							
WOOL			16440		144	1781	3760
VALUES 1981			347000		5700		
IN %			4.70		2.50		

QUESTIONNAIRES RECEIVED: COTTON 20
WOOL 2

VISITS MADE: COTTON 13 — 7 Bs.As. (B) 2 Catamarca (C) 4 Tucumán (T)
WOOL 4 — 4 Bs.As. (4)

INDUSTRIA DE LA INDUMENTARIA

EVOLUCIÓN DE LAS EXPORTACIONES SECTORIALES

(en u$s - Valores FOB)

SUBCAP NADE	DESCRIPCIÓN	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982*
42.03	PRENDAS DE VESTIR DE CUERO	76.223	375.109	1.841.210	9.353.654	16.807.496	8.481.538	14.879.664	28.957.471	55.362.457	54.352.270	28.536.806	12.217.440	10.374.922
	SUBTOTAL PRENDAS DE CUERO	76.223	375.109	1.841.210	9.353.654	16.807.496	8.481.538	14.879.664	28.957.471	55.362.457	54.352.270	28.536.806	12.217.440	10.374.922
60.02	GUANTES DE PUNTO	17	-	-	14.768	11.014	17	710	6.368	41.797	3.969	12.080	16	30.992
60.03	MEDIAS Y SÍMIL. DE PUNTO	341	490	850	4.408	4.583	144	2.961	22.069	4.751	26.359	177.265	111.630	235
60.04	ROPA INTERIOR DE PUNTO	1.666	-	-	70.378	140.574	271.308	784.076	2.375.272	2.691.229	99.840	1.519	368.180	439.504
60.05	ROPA EXTERIOR DE PUNTO	2.560.841	608.094	810.836	1.995.432	825.095	85.786	1.301.717	2.903.686	5.496.898	687.043	247.015	677.866	2.063.629
	SUBTOTAL PRENDAS DE PUNTO	2.562.865	608.584	811.686	2.084.986	981.266	357.255	2.089.464	5.307.395	8.234.675	817.211	437.879	1.157.692	2.534.358
61.01	ROPA EXTERIOR HOMBRES Y NIÑOS	67.295	122.955	412.702	681.093	1.048.866	109.519	2.975.867	8.137.561	12.867.257	17.590.851	19.330.097	3.121.351	852.915
61.02	ROPA EXTERIOR MUJERES, NIÑAS, ETC.	126.424	93.230	738.842	361.516	276.303	50.069	972.681	3.622.637	8.516.142	9.469.029	4.554.867	720.662	458.519
61.03	ROPA INTERIOR HOMBRES Y NIÑOS	16.911	30	2.550	67.132	32.126	1.138	174.387	327.692	336.967	158.815	1.569.570	897.945	190.563
61.04	ROPA INTERIOR MUJERES, NIÑAS, ETC.	30.529	3.162	35.236	369.415	149.196	53.290	213.502	1.057.777	1.156.823	2.042.405	1.339.061	220.090	22.858
61.05	PAÑUELOS DE BOLSILLO	278	-	-	17.267	19.213	2.796	3.288	12.889	8.272	-	16.610	3.307	-
61.06	CHALES, PAÑUELOS, BUFANDAS	1.047.225	7.865	9.727	31.126	16.108	7.839	70.726	145.924	140.431	1.676.786	57.839	60.475	6.551
61.07	CORBATAS	-	-	228	5.019	5.964	6.417	31.551	50.126	44.736	93.809	64.824	53.635	8.199
61.08	PARTES Y GUARNICIONES P/ROPA	-	-	-	2.302	580	-	141	3.411	-	-	61.928	2.049	-
61.09	CORSETERÍA	5.406	3	25	16.327	13.087	1.517	20.672	106.791	268.023	1.850	4.196	3.241	15.622
61.10	GUANTES Y SIMILARES	1.836	1.485	673	3.472	5.318	253	24.674	171.817	425.463	962.770	1.784.065	850.865	360.308
61.11	OTROS ACCESORIOS CONFECCIÓN	-	73	10.631	1.463	4.536	201	15.044	13.515	5.069	2.804	2.121	15.394	1.924
62.04	ARTÍCULOS PARA ACAMPAR	19.402	7.843	2.921	112.843	55.260	37.788	112.585	295.235	99.534	101.450	10.740	37.844	106.158
	SUBTOTAL PRENDAS DE TEJIDO PLANO	1.315.306	236.646	1.213.535	1.668.975	1.626.557	270.827	4.615.118	13.945.375	23.868.717	32.100.569	28.795.918	5.986.858	2.023.617
	TOTAL SECTOR	3.954.349	1.220.339	3.866.431	13.107.615	19.415.319	9.109.620	21.584.246	48.210.241	87.465.849	87.270.050	57.770.603	19.361.990	14.932.897

FUENTE: INDEC Y ELABORACIÓN PROPIA

(*) DIEZ PRIMEROS MESES

Annex No. 3

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INDUSTRIA DE LA INDUMENTARIA

EVOLUCIÓN DE LA OCUPACIÓN, DE LAS HORAS-OBRERO TRABAJADAS Y DEL VOLUMEN FÍSICO DE LA PRODUCCIÓN (INDICE BASE 1970=100)

TRIMESTRE Y AÑO	OBREROS OCUPADOS	HORAS-OBRERO TRABAJADAS	VOLUMEN FÍSICO DE LA PRODUCCIÓN
1970	100,0	100,0	100,0
I	97,3	86,8	83,0
II	100,3	103,8	105,1
III	100,9	103,7	105,4
IV	101,5	105,6	106,5
1971	104,8	100,2	106,9
I	101,7	86,1	90,0
II	104,5	102,9	115,3
III	105,6	104,8	111,2
IV	107,2	106,8	111,2
1972	107,4	99,7	115,8
I	106,8	86,9	101,7
II	106,6	106,7	122,6
III	107,8	100,1	122,6
IV	108,5	105,2	116,1
1973	110,4	114,2	111,2
I	109,2	84,3	86,9
II	108,8	158,6	109,9
III	110,7	105,6	110,8
IV	112,9	108,3	137,2
1974	118,0	108,9	133,0
I	114,3	88,6	107,1
II	120,7	117,0	131,6
III	117,5	112,8	142,9
IV	119,6	117,0	150,2
1975	119,1	112,5	125,0
I	120,6	93,9	114,8
II	121,4	119,9	130,7
III	118,6	119,3	127,3
IV	115,8	117,0	127,3
1976	111,9	104,0	116,0
I	115,4	97,1	113,4
II	114,4	112,6	111,5
III	110,1	101,8	103,8
IV	107,5	104,5	135,4
1977	99,2	95,4	109,4
I	105,3	84,2	91,6
II	97,3	95,5	105,1
III	98,7	101,4	104,5
IV	95,3	100,5	136,3
1978	87,9	86,1	85,2
I	87,3	69,9	65,2
II	89,5	94,0	89,0
III	87,9	93,2	93,4
IV	86,8	87,4	93,2
1979	82,7	84,8	99,8
I	82,5	94,0	63,7
II	84,9	83,2	111,0
III	83,3	82,8	113,1
IV	80,2	79,0	111,5
1980	65,0	63,5	89,1
I	67,5	55,0	95,4
II	64,6	65,5	105,4
III	64,4	67,3	78,7
IV	63,5	66,0	76,8
1981	57,4	54,2	56,1
I	62,0	51,2	59,1
II	58,7	57,1	57,5
III	54,8	53,2	51,8
IV	54,0	55,1	56,0
1982	52,2	51,1	49,7
I	52,3	41,9	46,1
II	50,4	50,3	46,0
III	52,4	54,0	49,8
IV	53,8	58,0	55,5

FUENTE: ENCUESTA INDUSTRIAL, INDEC.

Imports of Machines to Argentina and Duties Imposed

Annex No. 5

Machine	1975		1976		1977		1978		1979		1980		1981		1982	
	Duty		Value		Duty		Value		Duty		Value		Duty		Value	
	%	US $	%	US $	%	US $	%	US $	%	US $	%	US $	%	US $	%	US $
Prepar. of Spinning																
Opener																
Remaining	90	1 392 663	65	5 058 248	65	2 867 754	10	6 109 429	?	187 768	0	14 056 767	5	12 213 610	10	1 723 902
Spinning and Twisting																
Spinning	80	1 124 877	65	1 210 910	50	4 064 567	50	70 779	-	-	32	528 909	5	1 154 534	10	243 602
Others	90	-	65	551 614	65	2 230 865	10	3 599 446	20	1 329 048	0	11 798 898	5	9 843 249	10	1 776 590
Winding (excl. automatics)	80	28 546	65	19 136	65	166 354	50	64 444	-	-	35	303 965	40	191 825	35	64 614
Remainder	90	1 281 576	65	364 438	65	697 147	10	1 787 334	?	580 304	0	6 314 433	5	3 831 426	10	2 832 447
Weaving																
Looms (excl. automatics)	80	-	65	-	65	-	50	-		-		-	40	1 851		-
Others		-		-		-		-	?	2 684 973	0	7 806 216	5	2 881 931	10	2 087 494
Remainder		-		-		-	10	-	?	2 277 126	0	8 012 596	5	6 167 972	10	2 521 237
Knitting																
Flat bed knitting (excl. Jacquard)	80	7 549	65	-	65	-	50	13 494	?	9 522	35	17 035	40	97 745		-
Others	5	18 984 952	5	1 761 878	10	2 605 958	?	2 596 794	?	124 814	0	1 837 126	5	2 193 309	10	750 419
Remainder	90	160 473	65	25 918	65	64 918	10	1 778 407	?	13 297 024	0	8 246 215	5	7 413 397	10	469
Warping	80	-	65	4 030	65	-	50	-		-	35	47 793	40	20 653	35	9 161
Finishing																
Cylinder drying	80	-	65	113 941	65	-	50	12 168		-	35	34 812	40	160 772	35	18 939
Washing	80	963		-	65	5 055	50	57 668		-	35	165 825		-		-
Bleaching	80	-	65	-	65	-	50	-		-		-	40	25 078		-
Stenter	80	-	65	-	65	-	50	-	?	67 108	35	407 072		-	35	358 785

ABRIATIONS USED - ABRIACIONES USADAS

	English	Español
BA	Buenos Aires	Buenos Aires
BCRA	Central Bank of the Argentine Republic	Banco Central de la República Argentina
CICELPA	Investigation Centre of Cellulose and Paper	Centro de Investigación de Celulosa y Papel
CICIHA	Investigation Centre of Industrial Construction	Centro de Investigación de Construcción Industrializada
CID	Investigation Centre of Documentation	Centro de Investigación de Documentación
CIDI	Investigation Centre of Industrial Design	Centro de Investigación de Diseño Industrial
CIIM	Investigation Centre of Mining and Minerals Industry	Centro de Investigación de la Industria Mineral
CIMHER	Investigation Centre of Machine Tool Industry	Centro de Investigación de Máquinas Herramienta
CIT	Investigation Centre of Textiles	Centro de Investigación Textil
CITECA	Investigation Centre of the Technology of Meat Production	Centro de Investigación de la Tecnología de la Carne
CITIC	Investigation Centre of the Technology of the Rubber Industry	Centro de Investigación de la Industria de Caucho
CITIL	Investigation Centre of the Milk Industry	Centro de Investigación de la Industria Lechera
CITIP	Investigation Centre of the Plastic Industry	Centro de Investigación de la Industria de Plástica
FITA	Industrial Federation of the Argentinean Textile Industry	Federación Industrial Textil Argentina
GDP	Gross Domestic Product	Producto Bruto Interno
ITMF	International Textile Manufacturing Federation	Federación Internacional de la Industria Textil
MTY	Metric Tons per Year	Toneladas Métricas per Año
Ne	Yarn Count	Título inglés
OE	Open End	Rotores
PBI	Gross Domestic Product	Producto Bruto Interno
ppm	Picks per Minute	Golpes por Minuto
Rh	Rotor Utilization	Utilización de Rotores
su	Spindle Utilization	Utilización de Husos
m2	Square meters	

Exchange rate June 1983 1 US $ = 8,50 $a

Argentina - Value Added and Labour Force - 1981 Annex No. 7

	Value added at factor prices		Labor force		VA per worker	
	US $ Bln.	%	Thousands	%	US $	%
Agriculture	8,8	14,0	1 450	13,1	6 069	107,0
Industry	22,5	35,7	3 099	28,0	7 260	128,0
Services	31,6	50,3	6 520	58,9	4 847	85,0
Total / Average	62,9	100,0	11 069	100,0	5 683	100,0

Export Duties and Incentives

Annex No. 8

	July 74		Jan. 75		Jan. 76		Jan. 77		Jan. 78		Nov. 78		Dec. 79		Nov. 80		Dec. 81		Jan. 83		Actual	
	Duties %	Incent. %	D %	I %	D %	I %	D %	I %	D %	I %	D %	I %	D %	I %	D %	I %	D %	I %	D %	I %	D %	I %
Wool	-	?	-	?	?	-	15	-	5	-	5	-	?	-	-	-	10	-	22	-	22	-
Hairs	34	-	34	-	-	-	10	-	10	-	-	-	-	-	-	-	10	-	20	-	20	-
Combed tops	-	?	-	?	-	?	-	-	-	5	-	5	-	10	-	10	-	10	10	-	10	-
Wool yarn	-	20	-	20	-	20	-	5	-	10	-	10	-	10	-	10	-	10	-	-	-	-
Wool fabrics	-	25	-	25	-	25	-	10	-	15	-	15	-	15	-	15	-	10	-	5	-	5
Cotton fibres	25	-	25	-	20	-	5	-	-	-	-	-	-	-	-	10	-	7	10	-	-	-
Cotton yarn	-	20	-	20	-	20	-	5	-	5	-	10	-	10	-	10	-	10	5	5	-	5
Cotton fabrics	-	25	-	25	-	25	-	10	-	10	-	15	-	15	-	15	-	10	-	10	-	10
Knitted fabrics	-	25	-	25	-	25	-	20	-	20	-	20	-	20	-	20	-	10	-	10	-	10
Clothing	-	30	-	30	-	30	-	20	-	15-25	-	15-25	-	15-25	-	15-25	-	10	-	10	-	10
Wool blankets	-	30	-	30	-	30	-	15	-	20	-	20	-	20	-	20	-	10	-	10	-	10
Sheeting	-	30	-	30	-	30	-	15	-	15	-	15	-	15	-	15	-	10	-	10	-	10

EMPRESAS QUE ABANDONARON LA ACTIVIDAD TEXTIL

CAMPOMAR S.A.
PICCALUGA S.A.
PERONA BARBOUTH S.A.
PEDRO RIAL SRLL
ILPA S.A.
WORSTIX S.A.
ROYALTEX S.A.
PHILA S.A.
REYSOL S.A.
ANGEL BRASERAS S.A.
NIHONKEORI S.A.
@TULDA S.A.
GABY SALOMON S.A.
BERNALESA S.A.
ZOCCOLA GONZALEZ S.A.
UGOLINO Y JUAN GIARDINO
YAMIL Y NURI CABULI
ITALAR S.A.
ALPESA S.A.
HILMESA S.A.
INDUSTRIAS LLAVE S.A.
ARANDO S.A.
TEXTRICO S.A.
ATLANTEX SRL.
BENZAQUEN SRL.
ELEMECA SRL.
TELPATEX S.A.
HUAMAC PATAGONICA S.A.
HADDATEX S.A.
IMERITO SRL.
INDULINO S.A.
SERWATKA S.A.
TACOMA SRL.
TEXMEN SRL.
TEXTIL MARGATEX S.A.
TOBAL S.A.
WINTER S.A.
HALIFAX S.A.
ALGODONERA FLORENCIO VARELA S.A.
ALGODONERA LOMAS S.A.
ALGODONERA PLATENSE S.A.
ATTIE HNOS.
ANDES TEXTILES SRL.
ASTERID SRL.
DOMINGO BINELLO S.A.
JUAN CAPA
CHENILLATEX S.A.
COTTONTEX S.A.
DEL VAL HNOS.
ESTAB.ROHALEP
ESTAB.SUDAMERICANO GRATRY S.A.
FORMIO ARGENTINO S.A.
GOUROCK ROPES AND CANVAS LTDA.
FIATA S.A.
FILGON S.A.
GOMEZ BUSTILLO, A.
J.A.GERINO
JOSE LANIADO
LEDATEX SRL.
LA QUIRURGICA ARGENTINA
MELLUCCI E HIJOS
MULTITEX SRL.
MANUF.TEXTIL DERBY SRL.
MITEXTIL S.A.
PENCHATEX S.A.
POLIFIL SRL.
SAIKIN HNOS.
TEXTIL ARGENTINA S.A.
TASA S.A.
TEXTIL ESCALADA S.A.
TEXTIL INDIANA
EDUARDO BOTTO
NARCISO MUÑOZ

Fixed Quotas for the Exportation from Argentina to the EEC (in tons)

	1978	1979	1980	1981	1982
Cotton yarns					
Original quotas	2 839	2 853	2 868	2 904	2 921
5% more	-	-	143	145	146
Total quotas	2 839	2 853	3 011	3 049	3 067
Total exportation	2 892	1 156	2 792	1 262	-
Tops of wool	-	7 254	7 834	9 017	9 789
+ more	-	-	362	-	-
Total quotas	-	7254	8 196	9 017	9 789
Total exportation	-	3 111	2 635	3 156	-

Fixed Quotas for the Exportation of Wool Fabrics to the ECC, exclusively to UK

(in tons)

Annex No. 11

	1978	1979	1980	1981	1982
Quota original	60	245	265	285	305
Authorization for the increasing of quotas of the year 1978 in 45 t and to be reduced in the years 1979 - 1980 and 1981	+ 45	- 15	- 15	- 15	-
Adjusting the contract from 1980 an increase of 5 % was solicited on the quotas of the year 1979			+ 11,5		
The contract is foreseen for an increase of 20 t yearly to beginning 1980			+ 20	+ 20	+ 20
Quotas total adjusted	105	230	281,5	290	325
Total export	354	185	27	5	

Note:
The number of exportation achieved for 1978 is refered to all operations of the total year. However the quotas were applied after the month of August.

Calculation Indexes

Annex No. 12

Period	Total costs	Wages	US $ exchange rate $ ley (10 000 $ ley = 1 $ a)
Financial year September 1981 - August 1982	5 335 913,6	2 659 449,00	15 837,50
Financial year 1982	8 860 520,3	5 081 031,40	26 866,67
Dezember 1982	16 300 720,5	11 226 701,20	48 500,00
June 1983	31 646 533,3	26 252 219,84	85 000,00
Source	Development of economic indexes from January 1981 to June 1983 (INDEC)		Information bulletin Organization Techint

tr

Country Data - Argentina

Area

Total: 2 781 142 km2
Agricultural: 1 913 070 km2

Population

28,6 million (mid 1982)
Rate of growth 1,6 (from 1970 - 1980)

Density

10,3 persons per km2
2,6 persons per km2 (rural population / agricultural land)

Income Distribution (1976 - 1979)

% of domestic income,	highest quintile	50,3
	lowest quintile	4,4

Gross Domestic Product in 1982

	US $ mio.	%
GDP at market price	72,2	100,0
Gross domestic investment	12,4	17,2
Gross national saving	7,7	10,7
Current account balance	- 2,4	- 3,3
Exports of goods, NPS	9,1	12,6
Imports of goods, NPS	6,8	9,4

Annual Rate of Growth (%, constant prices)

	1970 - 75	1975 - 80	1979 - 81
GDP at market price	3,8	1,9	- 3,5
Gross domestic investment	2,0	6,3	- 6,1
Gross national saving	- 0,4	3,0	- 16,0
Exports of goods, NPS	4,8	11,2	- 2,2
Imports of goods, NPS	2,1	12,4	1,3