THE BRAZILIAN TRADE LIBERALISATION:
THE REGIONALIZED IMPACTS ON THE PRODUCTIVE CHAIN OF COTTON, TEXTILE AND APPAREL INDUSTRIES.

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During the last 8 years Brazil has experiencing a large program of trade liberalisation overture. The paper analyses the regional impact of this process over the so-called textile chain (cotton-textile-apparel) utilising dates of production and sales from 1980 until 1994 for the most important regions productive in Brazil. In a synthesis, the commercial overture that happened in Brazil during the last 8 years didn't change the structural tendencies in the spatial division of labour of the productive chain of Cotton, Textile and Apparel industries. It incremented the *Cotton March to West*, the concurrence among decadent textiles regions as Pernambuco, Minas Gerais and São Paulo and those, more dynamics, as Santa Catarina and Ceará. On the other hand those that are still using old technologies, are closing the plants. But the cotton's farmers paid the price of this adjusting process.

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1. Introduction[1]

Protectionism was one of the main features of the Brazilian economy in the second half of the XXth Century. At the beginning of the industrialisation process, protectionism was a basic element for the import substitution strategy, but in more recent periods it has been considered as a limiting factor to increase efficiency and competitiveness.

This diagnosis was already found in analyses about Brazilian economy in the eighties and even during Sarney's presidency (1985/90) some measures were taken to reduce this excessive protectionism. But it was the government of President Collor (1990/92) which from the beginning of his mandate (in March 1990) gave the way to Brazilian economy. The following Presidents, Itamar Franco (1993/95) and Fernando Henrique Cardoso (1995-?) supported this policy with more or less enthusiasm.

The first president Collor's steps were the fluctuation of the exchange rate and the liberalisation of imports. This liberalisation put an end to import administrative constraint and promoted a program of gradual reduction of import tariffs.

One of the first segments affected by this program was the one of the Textile and Apparel industry. Events such as the 50% reduction of cotton areas in Brazil and the dissolution of several companies of textile and apparel sector were the starting points of this study. To face the lack of information about regional analysis well known in Brazil, we used sources uncommonly used in this kind of survey such as the Statistical System of the National Confederation of the Industry (CNI) and those of the offices of the Financial Secretary of State as well as the evaluations of physical output made by the Brazilian Institute of Geography and Statistics (IBGE). |We also questioned producers and manufactures. The methodology was based upon the comparison of series of two main periods. The first one located in the eighties and the nineties, and even in some cases until 1975, and a more recent period, analysed in details, from the trade liberalisation. Although this process began in the government Sarney, it is considered here, as starting with government Collor. At that time it made progress, becoming a clear and important objective of economical policy.

The following argument will be developed. The trade liberalisation, which occurred in the last eight years in Brazil, didn't change any of the structural tendencies of the space division of labour in the productive chain of Cotton, Textile and Apparel. It only accelerated the process and increased the existing conflicts among its several segments. It quickened the development of cotton to the West and increased the competition among the decadent textile areas such as Pernambuco, Minas Gerais and São Paulo, and the more dynamics, such as Santa Catarina and Ceará. The liberalisation is a road with two directions (import/export) on which those who accumulated a technological gap of more than twenty years are living their accelerated end. The agricultural producers of cotton are paying the price of this adjustment.

The paper is divided into 5 parts including an introduction. The second part of the paper gives a brief survey of the relationships inside the productive chain, as well as the

[1] This paper is part of the study Impactos Regionais dos Processos de Regulamentação e Privatização coordenated by Lenas Lavinas at IPEA.

impact of the trade liberalisation. Here the analysis is more focused on the general aspects of the problem.

In the third part we study the agricultural segment of the productive chain. Here the territorial impacts of the process are predominant. We examine the industrial segment of the chain from its space aspect about physical output, the volume of sales and the number of employment posts as well as the origin of purchases and the destination of sales. The last part makes a synthesis of this research.

2. The trade liberalisation and the productive chain: cotton, textile, and apparel.

The productive chain of the Cotton, Textile and Apparel is long and complex. It is probably the only productive chains with strong agricultural links where the integrated output doesn’t exist. In the Poultry farming the producing of chickens is the link in the chain co-ordinated by industry, which takes into account the farms output, the assistance to the producer, the genetic control and even, in same cases, the products distribution to the final consumer. In the chain of the Cotton, Textile and Apparel this integration doesn't exist. For the Textile manufacturing the process begins on the door of the factory with a cotton bale in feather. For the Apparel industries it begins with the purchase of pieces of fabric which are produced anyway.

Although there are other agricultural inputs for the Textile industry, such as wool and silk, the cotton is the fibre that reigns in the Brazilian industry and also in the world output production. In the Brazilian case more of ¾ of the textile production is made from cotton. This non-integration of the productive process is much more a characteristic of this industrial segment. In the production of silk, for example, integration between the agricultural segment and the industrial one exists and it is fundamental for the success of the industry.

The diagram 2.1 shows the generic flow of this productive chain in Brazil. Until the middle of the nineties the only sector periodically open to the imports was the one of the cotton fibre. It was imported directly by the spinnery industries. Later on with the commercial opening, cloths that will supply the Apparel industries will also be imported. Until then the segments of the Textile industry regulated its prices and production rhythms to the others. With the commercial liberalisation, for the first time, they begin to feel the effects of the international competition and to lose part of the control of the system. On the other hand the agricultural segment, already greatly affected, was still in more difficult situation, what explains the fall of the cotton production in the country.

The cotton was rather a culture native of North-east Brazil, (when the arboreal variety, the „mocó“, was dominant). Nowadays this area represents only a small portion of the production that is concentrated in the states of São Paulo and Paraná. The Centre-west appears as a new cotton production area. Until the first half of the seventies the Northeast represented about 40% of the production and the Southeast and the South about 56%. In the middle of the eighties that proportion was already of about 21% for the Northeast and 70% for the Southeast and the South, the Centre-west representing already about 7%. Nowadays, amid the nineties, the current actions used to face the crisis of the sector increase the participation of the Northeast and of the Centre-west for respectively 25% and 16,7%. See table 2.1.

Table 2.1 Regional distribution of the production of cotton -selected years

	NO	NE	SE	S	CW	BRAZIL
1975/76	0	42,9	32,2	24,1	0,9	100,0
1980/81	0,1	19,9	37,7	33,6	8,7	100,0
1985/86	0,1	21,8	37,6	33,2	7,2	100,0
1990/91	0,1	12,3	26,3	49,3	11,9	100,0
1994/95	0,0	25,0	24,7	33,6	16,7	100,0

Source: IBGE-LSPA EMBRAPA-CNPA

The herbaceous variety is a perennial culture, produced in the rest of the country. The states of São Paulo and Paraná are the largest producer. The productivity levels are quite high compared to the „mocó“, but compared to the international pattern it is still quite low. The crisis of the last years (at the end of the eighties and at the beginning of the nineties), and the consequent loss of profitability of the culture makes it migrate to more distant areas with cheaper lands.

The Brazilian production which guarantied the self-sufficiency of the product during the eighties producing in 1988, about 860 thousand tons of feather, dropped to the half volume in 1994/1995. In all the regions the fragility of the producer and the suppression of import tariffs got that feat.

The commercialisation of the product follows a long way among the producer (cotton in pit) and the industry (cotton bales in feather). That great number of mediators, not only weakens economically the producer, but also undertakes to improve the quality of the product that will arrive to the industries.

On the other hand, the industrial segment is also quite diversified. The only segment to have contact with the agricultural branch, and even so just with the „algodoeiras“(mills), is the one of spinnery. Those ones had always and even more now, the possibility to import cotton in feather. For the other components -weaving, finish, etc, the input are obtained from the industrial activity.

The Apparel industry receives the ready-made fabric. Those industries get often a stock from the trade wholesaler of cloths and not from the Textile industry. Today there is also the alternative of using imported woven, which can be obtained from direct import or through the local wholesaler.

In this context the trade liberalisation aggravated conflicts of interests. Textile industry tries to guarantee the providing of the cotton in feather at the lowest cost, having as alternative the international market. In order to guarantee a certain mark-up the „algodoeiras“ have to find a balance between the price fixed by the industry and the price that they fix to the producers. Textile industry, is no longer the only supplier of the industries of Apparel, which have the alternative to look for competitiveness, to close the doors, or to make a pressure in order to obtain a return of the protection against the external competition.

Apparel industries managed to get free from the Textile oligopoly, but they must face the external competition. These industries have the same alternatives as Textile industry. However, because of the diversity of firms, the fighting strategies are also different. For example, shirt shops of the state of São Paulo make an agreement with departments of shirts in Korea, by sending the moulds, the type and texture of the fabric, the packing, etc, and receive the ready-made product for commercialisation, as if they were putting an order to the São Paulo neighbourhood. Another strategy has been to send those semi-ended shirts to the Asian Southeast, where they are finished and then sent back packed for the commercialisation. [2] Of course only the great companies can follow those strategies. However, the predominant companies are small or even family companies. For them the strategies consist of obtaining cloth -whatever its nationality is at the lowest price and at the lowest wages.

Those industries are concentrate regionally in the Southeast and in the South of Brazil. (See the table 2.2). More than 80% of the employees in the Textile industry is located in those areas and almost 90% of the Apparel industries. [3] These industries are very heterogeneous, even inside of the regions. For example the Textile industry of the Northeast has modern segments working with high technology, such as the mills of the state of Ceará, and precarious ones, such as the weavings of Pernambuco. The Textile industry in Minas Gerais is also characterised by delays in technological fields, especially the one located in Juiz de Fora. In São Paulo modern and precarious industries coexist.

Perhaps the industry of Santa Catarina is the most integrated at the following step of the chain, (Apparel), characterised by he division in small establishments. That industry presented the largest spatial mobility in Brazil during the eighties. ROLIM (1992)

Nevertheless the current imbalances due to the rate of exchange appreciation in the period, the only segment of the productive chain that was not protected during the process of commercial liberalisation was the producer of cotton. For the others that protection still existed, especially for those who use synthetic fibres, considered as the less competitive of the productive chain.

Table 2.2 Great regions-1985 Distribution of the employees

	NO	NE	SE	S	CW	BRAZIL
Textile	1,59	16,08	68,21	13,52	0,60	100,0
Apparel	0,19	9,10	55,05	34,64	1,02	100,0

Source:IBGE.

The whole results of the trade liberalisation in the setting of imports cannot still be totally evaluated because of the inadequacy of statistical information. Even so it is possible to settle some parameters for the future evaluations. The industries of the sector say they don't get to support an unfair competition, where dumping practices, degrading wages, reduced tributary load, lower interests, and so, would exist. These complaints expressed by the Brazilian Association of the Textile Industry, ABIT, mainly concern the import of cloths from the Asian Southeast, although they are woven in Korea, and the import of shirts. Often the complaints are focused on the products of synthetic fibres and the main harmful example of the competition is the great number of companies closing their doors in the city of Americana (in the state of São Paulo).

You can contest, or at least, minimise most of these arguments.[4] The incomplete data about the imports don't allow a detailed evaluation, even if it is necessary to recognise that imports have increased. However, the Brazilian imports in the nineties are mainly raw material imports, where cotton is predominant. Then comes the import of threads, and in the third row, cloths. It is important to point out that the important growth of the imports of that group is the cotton, a product that makes Brazil self-sufficient until few years ago. On the other hand there are signs of an expressive increase of exports.

[2] This information was done by a trader from São Paulo.
[3] The share of these regions is overstimated. It includes the industry of shoes that is concentrated there.
[4] Rolim (1996)

The comparison of the Brazilian cost structures with to some competitive countries is the starting point for the understanding of the impact of the commercial liberalisation in this sector.

The cost assessments for the cotton in feather in the crop 1993/94 were of US$ 1,36/kg in Brazil, US$ 1,42/kg in Argentina, US$ 1,86/kg in United States. [5] The feasible explanations for these results about to the cotton are probably related with the migration of the culture. (ROLIM,1996)

The estimates for the activities of spinnery and weaving allow discerning some of the points pointed out by ABIT. From Hrivanatz's study HRIVANATZ(1991) at first we calculated the difference between the structures of costs used in Germany, India, Japan, Korea, USA, on the basis of costs used in Brazil.

Broadly speaking, Brazil has an enormous advantage on the other studied countries as far as energy and raw material are concerned. The great Brazilian disadvantage is in the capital costs. In view of the structure of costs of each country and the importance of this data, we have the main explanation, in proportional terms, of the high costs of the Brazilian production.

Compared to Korea, considered as the great Brazilian competitor, there are some strange data. At first place the differential of total costs turns around 10%, the one of labour, 12% and the one of capital 41%. In the structure of Brazilian costs, labour has an equivalent proportion to the Korean, about 8%. Capital, however, represents 41% in Brazil and 27% in Korea. So it is difficult to understand the importance that entrepreneurs of this sector put in the weight of labour to the so-called „Custo Brasil".

These values take only into account the production costs. Although they are the basis of the formation of the sale prices, they don't integrate commercialisation costs and, mainly, the mark-up of the companies. These figures don't give either a good image of the differentials of productivity among the countries. Besides they concern the year 1991 when the raw material, the cotton, had not undergone the whole effect of trade liberalisation.

Even if we consider that in the following years the pressure on the raw material increased and that the increase of interests rate occurred in Brazil in more recent periods, the possible loss of competitiveness due to the increase of the called „Custo Brasil" can be found in that component: the high interests.

In its arguing in favour of the protection against the international competition the textile industry evokes the volume of unemployment. The data don't confirm this argument. (ROLIM,1996). The volume of employment in 1994 corresponds in half of the existing ones in 1990. It is probably due to the technological innovations in the sector and not to the outside competition. This innovation can be esteemed on the basis of the number of imports of machines that between 1989 and 1994 had an increase of 127%. That implies a huge productivity gain,

„...while a machine to weave equipped with a shuttle (180 strokes per minute) arrives to produce 9,8m of woven per hour, a machine without shuttle (700 strokes per minute) produces, at the same time, 38,2m of cloth, occupying less physical space and allowing a reduction of manpower of 50%." [6]

The other claiming argument from the Textile industry is focused on the loss of profitability of the sector, the consecutive bankruptcies, closings of companies and losses of work positions. Although they refer to the largest companies, those that had better

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5 Ipardes(1995),p.88.

6 Conjuntura Economica, ag.1995,p.44.

acting, the constant figures of the special study of the magazine Conjuntura Econômica, on the development of that sector seem not to confirm the argument.

The magazine considers 26 sectors. Only six of them obtained a percentile of profitability superior to the one of the Textile industry. In an ordering that goes from -3.28% to 31.89%, the indicator for the Textile industry is 14.43%. The 17 textile companies examined are located through the country as follows: 6 in Santa Catarina, 3 in São Paulo, 2 in Ceará, 2 in Minas Gerais, 2 in Rio de Janeiro. In Amazonas and Rio Grande do Norte, 1 company for each state. Only two have had negative net profit, one in Santa Catarina and another in Rio de Janeiro.

Given the weight of the Southeast in the share of the national Textile industry one could expect higher number of companies from this region. But almost half of those companies are located in two states, Ceará (NE) and Santa Catarina (S).

The largest companies of Apparel are, according to the research of the Economic Conjuncture, included with the one of Shoes. This distorts the evaluation of the sectorial indicators. However they had about 26% of production growth, reaching the largest production volume since 1986. [7] Among the 5 companies of Apparel, Saint Catarina has 2, Pernambuco, Rio Grande do Norte and Rio de Janeiro, have one company. None of them have negative result.

3. The Cotton.

3.1 Introduction.

The impact of trade liberalisation in nearly 4 years reduced half of the national production and lost the equivalent at 1,8 million of employees. If we consider that a great company of automobiles, like the old Autolatina (Ford + Volkswagen) in its best times, used about 60 thousand workers, the reduction of the planted area of cotton in the last five crops represents almost the number of employees in 30 Autolatinas.

The cotton production in Brazil reached its peak in terms of exploited surface and production volume in the crop of 1984/85. From that time, these values fall little by little reaching the half in the crop 1994/95. In spite of these problems, the productivity of the culture kept growing, reaching its peak in the crop 1990/91 and after a reduction in the following years, it already reaches close of those levels. See graph 3.1.

Among the different decisive factors, the reduction of the aliquots of import of 55% in 1987, to 10% in 1989 and 0% since 1990, was the most important of them.

As it was already seen, the production in the Brazilian territory is concentrated on the Centre-south, especially in São Paulo and Paraná, while new producing regions start to emerge, as the Centre-west and sub-areas of the Northeast that were not traditionally producers, as it is the case for the west of Bahia and the south of Piauí. The production in the Northeast of Brazil, that today is very reduced, suffered deep structural transformations, accentuated in the eighties and deepened by the current crisis.

3.2 The cotton of the Northeast.

The decadence of the cotton of the North-east is structural and the commercial liberalisation had little influence on it. But new producing areas of cotton appeared inside of the Northeast in which this impact can be noticed. The cotton produced in the Northeast was of the arboreal variety, commonly known as „mocó“. That variety is a permanent

[7] Conjuntura Economica, ag.1995,p.44.

culture, with cycle of about 5 years and with very reduced productivity levels. It defined a vast well-known area as the area of the consortium cattle-cotton, in its largest part in the semi-arid region of North-east of Brazil. The farmers planted the cotton with other subsistence cultures and after the crop the cattle fed with brushwood. That cotton when being benefited, becomes feather, and leaves as by-products the pie (that feeds the cattle) and the oil. A set of factors, among them the economic fragility of the producer and the outbreak of the plague of the „bicudo"(beaked), was responsible for the decadence and virtual disappearance of that system in the Northeast [[8]]. The production that still exists in the region is the herbaceous variety, whose culture demands a higher technology degree and larger capitalisation. It is planted in other sub-areas of the Northeast, particularly in the west of Bahia.

That system, already affected in its structure, cames through three episodes that make it seen as a relic: the lingering drought between 1979 and 1983; the plague of the „bicudo"(beaked) in 1983; the commercial liberalisation since 1989/90.

The commercial liberalisation of the nineties is just already a shovel of whitewash on a culture considered anachronic. Its contribution for the end of the culture is almost marginal. The „mocó" is over, although one cannot affirm that the production system that maintained it is disappeared.

The increase of the cultivated surface and production in the crops of 1993/94 and 1994/95 result, mainly, from the production in areas that are not part of the traditional producing regions of the Northeast, like Bahia. In those areas the production is more similar to the one of the Centre-south. It is a production system different from that of the cattle-cotton

3.3 The cotton of the Centre-south.

The analysis of the situation of the Centre-south, specifically the one of the Southern Zone, for the importance in the Brazilian production can be extended to the national production of herbaceous cotton and consequently, considering the almost disappearance of the „mocó", to the whole Brazilian production.

The largest Brazilian crop was the one of 1984/85, with the production of about 2836 tons of cotton in pit, equivalent to 1020 thousand tons of feather. [[9]] Until 1988 the import aliquot for the feather was of 55%, in 1989 it was already of 10% and since 1990, 0%. The impact of those tariff reductions was already noticed in the crop of 1988/89, but it was the following crop, 1989/90 that suffered the whole impact of the opening. Since 1989 the prices start to fall. The tendency will only reverse itself after 1992, although it has not yet reached its levels of 1989.

The prices of the feather resulted from a growing trajectory since 1986, while the one of the pit, received by the producers, stayed relatively stable. Such prices, although they are influenced by the international prices, react to the volume of existent stocks in the national market. We can notice, from table 3.1, that in 1984 the stocks were in the lowest level registered during the period. It is certainly a reflex of the great depression of the beginning of the eighties. With the resurgence of the textile industry production there is a retaking of the cotton production that culminated with the great crop of 1984/85 and a great accumulation of feather stocks. With such a volume of stocks the prices stay stable in 1985 and 1986, and the production of the crop 86/87 practically returned at the levels of those of the depression. The acceleration of the consumption and the using of the stocks

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8 Rolim & Carleial(1990)

9 2,77 pit=1 feather

accumulated along 1986, launch the prices again in ascending trajectory. With the increase of stocks, the announcement of the reduction of the import aliquot knocks downs the prices and also begins the process of downfall of the Brazilian production

The raise of the import starts in 1991. The stocks reduced in 1991 and 92 didn't raise the prices, they just accelerated the rhythm of imports. The peaks is reached in 1993 with 508,5 thousand tons of feather for a consumption of 829,5 thousand tons and a national production of 420,2 thousand tons, the lowest one of the last fifteen years!

Table 3.1 Supply of cotton in Brazil (1000 ton.)

	Stock	Initial	Prod.	Imp.	Provision.	Cons.	Surplus	Export.	Final stock
1980	01/03/80	118	577	0	695	572	123	9	114
1981	01/03/81	114	594,4	2	710,4	561	149,4	30,8	118,6
1982	01/03/82	118,6	680,5	0	799,1	580,6	218,5	56,5	162
1983	01/03/83	162	586,3	2,4	750,7	556,7	194	180,2	13,8
1984	01/03/84	13,8	674,5	7,8	696,1	555,2	140,9	32,3	108,6
1985	01/03/85	108,6	968,8	20,5	1097,9	631,4	466,5	86,6	379,9
1986	01/03/86	379,9	793,4	67,4	1240,7	736,6	504,1	36,6	467,5
1987	01/03/87	467,5	633,4	30	1130,9	774,7	356,2	174	182,2
1988	01/03/88	182,2	863,6	81	1126,8	838	288,8	35	253,8
1989	01/03/89	253,8	709,3	132,1	1095,2	810	285,2	160	125,2
1990	01/03/90	125,2	665,7	86	876,9	730	146,9	110,5	36,4
1991	01/03/91	36,4	717	105,9	859,3	700	159,3	124,3	35
1992	01/03/92	35	667,1	167,8	869,9	748	121,9	33,8	88,1
1993	01/03/93	88,1	420,2	508,5	1016,8	829,5	187,3	8,3	179
***1994**	01/03/94	179	483,1	330	992,1	850	142,1	8	134,1
***1995**	01/03/95	134,1	594,1	320	1048,2	900	148,2	13	135,2

Source: CONAB (*est.) - elaboration EMBRAPA-CNPA * * it includes the production of „mocó“

In 1989 with an initial stock of 253,8 thousands tons and a production of 709,you could expect a consumption that was of 810 thousand tons. Even so were 132,1 thousand tons of feather imported. The years of 1989, 90 and 91 are those of high imports and also high exports. It suggests speculative strategies of the textile industries, importing the feather, taking advantage of the reductions of aliquots and of the „algodoeiras“, exporting to get better international prices once imports made collapse the national prices. Such outline was applied till 1992 while stocks last prevented its pursuit.

Given the increase of the consumption, the low production of 1993, and the level of prices in 1992, great imports appear. It helped to restore the stocks and to pressure an increase of prices, which did not happen in spite of the increase of consumption.

In that process the producers faced the worst situation, because besides the deep fall of price of the pit, they didn't have the alternative of the external market. During that period of fall of prices the mark-ups of the „algodoeiras“ should have increased.

In these conditions the fall in the area and in the production of cotton in Brazil after 1985 are not surprising. One should notice that this didn’t result only from the extinction of the aliquots for the import of the cotton. The fall of the prices and the economic weakening of the producers had an antecedent provoked by the accumulation of stocks in the crops of the half of the eighties. This process was deepened with the aliquot zero.

The fall in the area and in the production didn't occur equally in the Centre-south. It was immediate in São Paulo, delayed to occur in Paraná, even succeeding to increase in that state as well as in the Centre-west. From the crop of 1991/92 the fall was abrupt in Paraná although it kept stable in the Centre-west. (See graph 3.2).

The state of Paraná overcomes São Paulo in area planted and production since the crop of 1978/79. From the super-crop of 1984/85 a tendency of area reduction start to pick in São Paulo substituted by more profitable cultures, accentuated by the commercial opening. On the other hand the cotton in the Centre-west start to enlarge the area from the crop of 1988/89.

At the beginning of the reduction of the import aliquots and of lowest prices the increase of the area in Paraná and in the Centre-west may appear as a paradox. It is important to undertake a certain delay of the agricultural offer to the movement of prices, but, more important is that with the fall of the profitability of the culture, it starts to migrate towards areas of cheaper lands where it is still possible to obtain some gain. That migration of the culture proceeds in general lines a logical „thuniana".

As well as the coffee, the cotton also had its march to the west. In São Paulo, in the thirties, it was in the axis Campinas-Ribeirão Preto and it is going moving to west in direction to Presidente Prudente, and to northwest, Araçatuba and São José do Rio Preto. Now it is at the far west of the state.

That movement also had compensation in Paraná, where the culture, begun in the northeast of the state, moved to the northwest and west. The performance of the co-operatives was significant for that march and also for the expansion of the area. However the basic subject stays in the reduced prices of the lands and in the substitution of cultures. [[10]]

The cotton in the Centre-west is nothing else that the continuity of this march. It goes up by the south of Goiás and east of Mato Grosso , in the pursuit of the northwest of São Paulo and for the west of the state in direction to Mato Grosso do Sul. See map 3.1.

The expansion in that area has been explained by a privileged topography that allows the mechanisation of whole the process, even of the crop; for the most regular climate, that it allows larger homogeneity of the fibre; for the fact of the production to happen in great areas with high technology and productivity; and also for the expectations maids starting from Hidrovia Tietê-Paraná and for Ferronorte. [[11]] The productivity in this area has been overcoming the one of Paraná in the last crops.

Another aspect of the crisis of the Brazilian culture of cotton is the reduction of the volume of direct employment in the agriculture. The estimates below consider the labour coefficients for area and a certain number of worked days, that in the case of the Northeast is of 170 days a year, considering the installation of the culture, its maintenance and crop. The total values for the Northeast are the sum of the values for the area of the mocó and of the herbaceous. The values for the Centre-south follow also similar methodology of calculation, although the coefficients are slightly different.

On the basis of those estimates the calculation of the current losses caused by trade liberalisation was made considering as basis the volume of employment of 1988, from where the values esteemed for every year were subtracted. The results are presented in table 3.2.

If the price for the modernisation of the complex Cotton/Textile/Apparel went that way, it would be very high and badly distributed sectorially and regionally.

A synthesis of this section would say that:

[10] Ipardes(1995) pp. 46-61
[11] Ipardes(1995) pp. 37-38

- the trade liberalisation deepened a crisis already existent in the cotton production in Brazil, leading to the reduction of the half country production, stopping it to be self-sufficient.

Table 3.2 Estimates of lost employment in the culture of cotton due to the trade liberalisation - 1989-1994 (*)

	BRAZIL	PARANÁ	S. PAULO	NORTHEAST		
				Mocó	Herbaceous	TOTAL
1989	143.300	18.000	31.300	19.113	55.125	74.238
1990	216.700	-7.000	29.000	42.193	142.874	185.067
1991	241.100	-49.000	34.100	64.028	140.863	204.891
1992	242.200	-78.000	45.400	74.248	131.475	205.724
1993	497.300	41.000	75.000	98.345	200.341	298.685
1994	460.600	76.000	73.500	102.006	114.300	216.306
SUM	1.801.200	1.000	288.300	399.933	784.978	1.184.911

Source: ROLIM, 1996. (*) The estimates for Brazil, São Paulo and Paraná were made with coefficients different from those used for NE. (Differential close to7%)

- this crisis had differentiated effect in the different areas of the country.

- it contributed to the apparition of new regions of herbaceous cotton in the Northeast. It didn't affect the crisis in the production of cotton „mocó".

- it accelerated a process of shifting of the culture toward to new areas, Centre-west, West of Paraná, West of São Paulo and even to Rondonia, to the detriment of the traditional areas inside of the own state of São Paulo and of Paraná.

- the adjustment was achieved on the agricultural producers, by the „algodoeiras" as by the Textile industry. The remaining producers got to show won of productivity through the reduction of production costs.

- the losses of employment due to the reduction of the exploited area are equal to 30 great factories of automobiles.

4. The INDUSTRIAL SEGMENT.

4.1 INTRODUCTION.

The basic procedure in the analysis of these data was the comparison of the degree of likeness among the series of indexes of physical production and of sales. To Brazil as a whole the comparison was made with the total of the manufacturing industry. For the states we tried to detect those with similar trajectories. That was made through the observation of the group of generated graphs and, in a more rigorous way, through the use of coefficients of no-parametric statistics. The coefficient of concordance of Kendall, that shows the ordinal correlation between two or more series. It varies from 0 to 1, It shows that the higher it is, the bigger the correlation among them is. It doesn't care about the absolute levels, but if there is likeness among the trajectories of the series. The second coefficient, ordinal correlation of Spearman, is used to measure the correlation between pairs of series. It also varies between 0 and 1. The difference among them is that the first can measure a group of series and the second only a pair. (SIEGEL, 1956)

Considering Brazil as a whole, the trajectory of the indexes of industrial physical production for the Manufacturing industry, Textile and Apparel, in the period between 1975 and 1990, with annual data, and the period 1991-1995, where took place the effects of the commercial liberalisation, with monthly data, some facts pointed out which can be summarised as follows:

- The first observation is that the correlation of the trajectories of the two sectors with the Manufacturing industry decreases, K = .68, basically due to the trajectory of the Textile industry, K = .71, once the Apparel industry and the one manufacturing maintained the same coefficients, K = .75. See table 4.1.

- The Textile industry since 1975 to the middle of the nineties had a trajectory much more similar to the one of the Manufacturing industry as a whole than with the Apparel industry.

- The industry of Apparel was in crisis during the whole second half of the eighties, with a slight recovery in 1992 and 93, to enter in decadence again.

- Since the second half of 1994, coinciding with the settlement of the Real [[12]], the two sectors, particularly Textile, enter a period of increase of production, more intense than the one of the previous yearly cycles. The fall of the production levels in the first semester of 1995 is cyclic; the difference is in the fact that it was deeper than it used to be in previous years. The increase of the second semester of 94 was also more intense.

Table 4.1 Brazil-Manufacturing, Textile, Apparel industries Coefficient of Concordance of Kendall 1975-1990(yearly) 1991-1995(monthly)

	1975-1990	**1991-1995**
All industries; Textile; Appar.	K = .78 (=35.06	K = .68 (=113.55
Textile, Apparel	K = .82 (=24.66	K = .84 (=92.42
All industries; Textile	K = .93 (=27.79	K = .71 (=78.05
All industries; Apparel	K = .75 (=22.63	K = .75 (=75.03

4.2 The Regional Trajectory

The studied states were Ceará, Pernambuco, Minas Gerais, Rio de Janeiro, São Paulo, Paraná and Santa Catarina. Initially the performance of the industrial physical production was analysed in those states, with data from the IBGE. Soon after, with data from the Federations of Industries of each state, collected with a common methodology developed by the National Confederation of the Industry, the system CNI, the indexes of the volume of sales and employees were analysed. Finally, with data from the State Secretariats of Finance, the origins of the purchases and the destiny of the sales of the considered sectors.

The industrial segment of the productive chain is composed by the Textile and Apparel [[13]] sector. Although the segment Shoes doesn't make part of the given productive chain, the level of aggregation of the IBGE and of the other sources of information, make impossible to exclude it. However its participation in the sector is relatively reduced and concentrated in the states of São Paulo and Rio Grande do Sul (not considered in the sample).

The selected states represent, respectively, about 83% and 72% of the employees, of the Textile and Apparel industries. (See table 4.2). Ceará, Minas Gerais and Santa Catarina are the states where the Textile sector presents larger participation in the structure of the local industry. Apparel has the main share in the states of Ceará, Santa Catarina, Rio de Janeiro and Pernambuco. Disputing the second

[12] The new Brazilian currency wich cames from a stabilization plan.

[13] The Brazilian statistics includes the shoes manufactures in this sector.

rank in both industries comes Rio de Janeiro, Santa Catarina and Minas Gerais. (See table 4.3).

Table 4.2 Share of selected states in the Brazilian production. Textile and Apparel- 1985 Employees.

	Textile	Apparel		Textile	Apparel
CEARÁ	3,86	3,22	They are PAULO	49,23	37,88
PERNAMB.	3,85	2,49	PARANÁ	2,77	1,68
M.GERAIS	7,9	9,95	STA CATAR.	8,0	8,05
R.DE JAN.	7,75	8,74			
TOTAL EST.	**83,36**	**72,01**			

Source IBGE

Table 4.3 Share of Textile and Apparel in the industrial structure of selected states - 1985 Employees

	Textile	Apparel		Textile	Apparel
CEARÁ	12,24	19,03	SÃO PAULO	6,84	
PERNAMB.	8,93	10,77	PARANÁ	3,78	
M.GERAIS	10,7	7,23	STA CATAR.	9,06	
R.DE JAN.	5,15	10,84			

Source:IBGE

4.2.1 Physical production (IBGE).

4.2.1.1 The Textile industry.

About the physical production it can be said that at regional level the Textile industry, (see graph 4.1 and table 4.4), presents the following characteristics:

- Historically there is a similar trajectory among Minas Gerais, São Paulo and Santa Catarina. There is a tendency of stabilisation in reduced levels of production. It is a stagnant line.
- Pernambuco and Rio de Janeiro are in a deep decadence since 1986.
- Since 1994 it has been different behaviours. Rio de Janeiro seems to have entered in a recovery period. Pernambuco, after a brief interval, retakes the descending trajectory. São Paulo has a fall accentuated in the last three months and Santa Catarina maintains its cyclic pattern. Minas Gerais accentuates the stagnant line.
- It seems to be settled down a competition pattern where the states of Rio de Janeiro and Santa Catarina are carrying away the best part to the detriment of Pernambuco and Minas Gerais and also, in some way, São Paulo (almost 50% of the Brazilian production).

Table 4.4 Selected states –Textile -Coefficient of concordance of Kendall 1981-1993(yearly) 1994-1995(monthly)

Groups of States	1981-1993	1994-1995
NE,PE,MG,RJ,SP,PR,SC	K = .53 (=44.87	K = .43 (=57.19
NE,PE,MG,RJ,SP,SC	K = .72 (=52.50	K = .52 (=59.43
NE,MG,SP,SC	K = .69 (=33.36	K = .63 (=47.61
MG,SP,SC	K = .74 (=26.81	K = .65 (=47.66
PE,RJ	K = .97 (=23.27	K = .47 (=17.8

4.2.1.2 The Apparel industry.

Despite its heterogeneity this industry tends to present larger concordance of trajectories among the studied states. The graph 4.2 and the table 4.5 illustrate that assertion.

The synthesis on this sector is as follows:

- The three larger producers, Minas Gerais, Rio and São Paulo, responsible for about 58% of the employees of the industry in 1985, present a declining tendency since 1986, Rio de Janeiro just sketches a reaction in the most recent periods.
- Apparently a more important dynamism is appearing in other producing regions such as the Northeast, Santa Catarina and Paraná.
- Regions in difficult situation were already structurally in recession before the trade liberalisation.

Table 4.5 Selected states-Apparel -Coefficient of concordance of Kendall 1981-1993(yearly) 1994-1995(monthly)

Groups of States	1981-1993	1994-1995
NE,PE,MG,RJ,SP,PR,SC		K = .56 (=74.29
NE,PE,MG,RJ,SP,SC		K = .71 (=81.10
NE,MG,RJ,SP,SC	K = .71 (=42.83	K = .68 (=65.07
NE,MG,SC	K = .75 (=27.07	K = .70 (=40.11
MG,RJ,SP	K = .85 (=30.68	K = .71 (=40.79
RJ,SP	K = .97 (=23.27	K = .88 (=33.37
RJ,SP,SC		K = .79 (=44.90
NE,SC	K = .74 (=17.67	K = .87 (=33.06

4.2.2 Sales and Employees (CNI)

Another source of information was the indexes of industrial activity produced by the Federations of Industries under the co-ordination of the National Confederation of Industries (CNI). The Federations of the states always collected information of the levels of sales and employment from its members. However the methodologies didn’t always coincided or didn’t have continuity in the work. Recently CNI began to set up a national system of monthly economic statistics where each Federation collects and manages groups of indexes of sales, employment, utilised capacity, etc, with a homogeneous methodology. That system has its basis on January 1992. The sample considered in each state represents at least 50% of the sector, classified according to the IBGE.

The system, although it is already operating, is still in a phase of improvement and it moves toward an effective methodological unification. In some states it is more consolidated than in others. Although the indexes are only indicators and not absolute values, one can evaluate the trajectory of activities in the different states.

It was not possible to obtain all the information for all the states. Thus, we only worked on the index of Total Sales and Employment.

4.2.2.1 The Textile Industry.

The main results can be synthesised as it follows. (See table 4.6 and 4.7, graphs 4.3 and 4.5).

- For the Textile industry the recurrent pattern of the sales is the one of an inverted U, whose top is the middle of the year. The difference in 1995 is that up to where the data allow to evaluate, the expansion phase did not still occur.
- The states with larger trajectory concordance are Ceará, Minas Gerais, Rio de Janeiro and Santa Catarina.

- Pernambuco and Paraná stand out for the particularity of its trajectories. Pernambuco as being in a decadent trajectory since July 1993. Paraná because of its trajectory with very high oscillations.

- Ceará is the one that presents the best trajectory. It is the only one to have increase of sales in the first semester of 1995, where the ascending branch of inverted U appeared.

Minas Gerais maintained some stagnant stability along 1993 and the first semester of 1994, and a deep fall of sales in 1995. The same thing happens to Rio de Janeiro and Santa Catarina in 1995. The difference is that for this last state the fall was not so deep.

- None of the states, except in some periods, maintained equivalent levels of employment to the average of 1992. The common point is the reduction of the employment, but at the end of 1994 there was an increase in Pernambuco and Santa Catarina.

- São Paulo and Paraná present the lowest employment levels among the considered states. At the end of 1994, at the beginning of 1995, the level of the employment in São Paulo suffers an abrupt fall

Table 4.6 Sales of the Textile and Apparel industry- Coefficient of Concordance of Kendall January 1992-July 1995

Groups of States	TEXTILE	APPAREL
CE,PE,MG,RJ,,PR,SC	K = .51	K = 46
CE,PE,MG,RJ,SC	K = .66	K =
CE,MG,RJ,PR,SC		K = .68
CE,MG,RJ,SC	K = 75	K = .80

Table 4.7 Sales of the Textile Industry- Coefficient of Correlation of Spearman January 1992-July 1995

	CE	PE	MG	RJ	PR	SC
CE						
FOOT	.46					
MG	.49	.41				
RJ	.63	.62	.60			
PR	.X	X	X	X		
SC	.69	.44	.67	.69	X	

(*) X Means no-significant Coefficient

4.2.2.2 The Apparel Industry

Here, the synthesis points out for what follows. (See table 4.8 and graph 4.4).

- For the Apparel industry the cyclical pattern looks like a normal U, whose apexes are the months of November/December.

- Santa Catarina and Minas Gerais are the states with the most increased levels of sales.

- The correlation, with regard to the employment levels, is negative among the states in the main cases.

- There is a general tendency of fall in the employment levels in the last months of the first semester of 1995, except Paraná.

- Pernambuco comes in a long trajectory of stagnation and fall in the employment. Ceará follows a contrary trajectory. It comes in ascension since the first semester of 1994.

- Paraná and Santa Catarina follow a trajectory of ascension of employment since the first semester of 1994. It begins to revert after the end of 1994, more intensively in Paraná.

Table 4.8 Sales of the Apparel industry –Coefficient Correlation of Spearman January 1992-July 1995

	CE	PE	MG	RJ	PR	SC
CE						
PE	X					
MG	.56	X				
RJ	.64	X	.67			
PR	.45	X	.33	.26		
SC	.48	X	.80	.70	.51	

4.2.3 Origin of the Purchases and Destiny of the Sales (Secretariats of Finances)

The analysis that follows has been made on the basis of data from the Secretariats of Finance of some states. [] The origin of the purchases of the Textile and Apparel industries shows at first the integration degree of the states. The changes in the percentiles of external purchases are an indicator of the impact of trade liberalisation. That measure is not perfect because nothing prevents that a product imported by a wholesaler of São Paulo is resold for the industry of Ceará. That operation would be counted in Ceará as a purchase from another state and not as a purchase from the exterior. If that wholesaler was in Ceará and did the same operation, it would be counted as an internal purchase. In spite of those problems these information can work as indicator of the impact of the trade liberalisation. (See tables 4.9 and 4.10).

In synthesis:

- There is an increase of the purchases done in the exterior, reflex of the trade liberalisation, so much for the Textile industry that for the Apparel industry, in all considered states. The percentiles are particularly high at the end of the period and in the states of the Northeast.

- On the other hand there is also an increase of the percentile of the sales to the exterior, indicating that the liberalisation is not a unique direction process. That increase for the Apparel industry, in some cases, is proportionally bigger for exports than for imports. In the state of São Paulo, it is particularly expressive.

- The high proportion of sales inside Santa Catarina reveals the intense processes of industrial reorganisation in course in that state.

- Santa Catarina and the Northeast, are the regions that appeared with better performance in Apparel industry. They are the ones that buy more products from outside.

5. Last Considerations.

While a general conclusion, we can say that up to now the trade liberalisation did not change any structural tendency in the space division of labour of the sector, it just deepened the existent ones. A second general conclusion is that the bill of the adjustment was paid, in its largest part, by the agricultural producers and perhaps by the small and medium industrial of the Apparel industry.

The cotton production was severely affected by the liberalisation of the imports. It was not due to any pressure of costs, on the contrary it was in a context of stable prices but with great stocks that forced the prices down. This fall plus the increase of the mark-up of the „algodoeiras“, reduced more the prices received by the producers. The consequence was the reduction for half of the cultivated area in the country. The culture still maintains itself, largely because the migration to areas with cheaper lands than those where traditionally the cultivation occurred. The march of the cotton continued in direction to the west of São Paulo and of Paraná, reaching the Centre-west and occupying new areas in the Northeast, the west of Bahia and the South of Piauí. In the traditional regions of production in the Northeast, the areas of the „mocó“, the culture practically disappeared.

The Textile and Apparel industries were historically the most protected Brazilian industries. After the process of commercial liberalisation, started under the government Sarney, they still went on being the most protected. That long protection led these industries to produce with very surpassed technology. At the beginning of the process, the tax for importation of raw materials and machines was immediately reduced. They could do investments for modernisation. Many of those investments implied in voluminous labour reductions. Nowadays the numbers of that contingent of unemployed are used to illustrate the harmful effects of the competition!!

In those areas where there were already structural problems in these industries, the situation seems to get worse. It is the case, for example, of Pernambuco, Minas Gerais and even São Paulo. The good surprise seems to be Rio de Janeiro, which gives signs of having left a long decadence period. On the other hand new areas had consolidate, as it is the case of Ceará and Santa Catarina, and another blunt as promise, as it is the case of Paraná. In those areas the differentiation is in the integrated organisation of the chain productive and/or in the modernisation of equipment and also in the strong participation of the external section. See map 3.1.

The results of other works of the project, referring to the deregulation and/or privatisation of the sector of electric energy and of the port sector, point out that the increase of tariffs of electric energy in Brazil is a strong probability and the dispute that will aim the Brazilian port at better conditions of competitiveness is still indefinite.

The definition of those elements will have important impacts on the current tendencies of the space division of labour in the country, particularly in what it refers to the chain Cotton-Textile-Apparel. The two emergent regions, in the South and in the Northeast of Brazil, present characteristic particularly sensitive to them.

The industry of the South is provisioned with cotton from Paraná, Mato Grosso do Sul, Paraguay and Argentina. (ROLIM, 1996) This gives this region some advantage in relation to the most traditional areas like Rio de Janeiro, Minas and São Paulo. Although it is not the reason of its largest competitiveness. It resides inside the largest integration of the productive chain. However if the tariffs of electrical energy suffer increases differentiated along the national territory that picture will be more and more uncertain. Let us suppose that the prices of energy are lower proportionally to the traditional areas. They could reverse the tendency that, currently, is unfavourable to them. However, if the electrical energy is more expensive in those areas, it could mean the stroke of grace to its textile industries. In the same way the advantages in the provisioning of raw material, the cotton in feather, will be defined by the format that will be brought to adopt the current structure of transport. If a harbour between Rio de Janeiro and São Paulo succeeded in supplying those two centres with advantage in relation to Santa Catarina's provisioning, basically done by surface roads, the balance would lean all over for these regions again.

Table 4.9 Textile Industry- Origin of the purchases and destination of the sales

CEARÁ						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
YEAR	CE	BR	FOREIGN	CE	BR	FOREIGN
1990						
1991						
1992	20,0	76,4	3,6	13,6	73,2	13,2
1993	19,9	49,5	30,6	14,2	77,8	8,0
1994	35,4	30,4	34,2	22,2	68,6	9,2
1995	18,7	52,9	28,4	19,5	67,9	12,6
SOURCE: Given Gross - Sec.Fazenda CE-Dpto. Collection *January to September						
PERNAMBUCO						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
	PE	BR	FOREIGN	FOOT	BR	FOREIGN
1990	31,63	63,66	4,71	16,80	82,32	0,88
1991	29,18	61,60	9,22	13,69	83,72	2,58
1992	31,48	62,24	6,28	14,17	81,68	4,15
1993	28,19	61,97	9,84	14,31	80,87	4,82
1994	32,13	59,77	8,11	16,05	80,02	3,93
1995	29,56	51,77	18,67	18,63	79,37	2,00
SOURCE: Given Gross - Sec.Fazenda PE-Dpto. Collection						
SÃO PAULO						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
	SP	BR	FOREIGN	SP	BR	FOREIGN
1990	66,8	25,8	7,4	57,8	36,7	5,5
1991	62,8	27,8	9,4	55,5	35,5	9,1
1992	64,9	28,2	6,8	54,1	35,5	10,4
1993	64,0	26,6	9,4	54,2	38,2	7,6
1994	65,2	25,6	9,2	52,9	40,5	6,7
1995	60,8	23,3	15,9	54,6	40,1	5,3
SOURCE: Given Gross - Sec.Fazenda SP - Diplat-Assiat *January to April						
PARANÁ						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
YEAR	PR	BR	FOREIGN	PR	BR	FOREIGN
1990	81,52	16,09	2,39	44,95	48,68	6,37
1991	84,45	13,81	1,74	47,35	46,84	5,81
***1992**	76,82	20,29	2,89	47,48	46,52	6,00
***1993**	65,58	28,54	5,88	50,10	43,29	6,61
***1994**	69,61	22,49	7,90	40,51	50,50	8,99
1995						
SOURCE: - Sec.Fazenda PR-Ass. Economic * Provisory data						
SACRED CATARINA						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
Year	SC	BR	FOREIGN	SC	BR	FOREIGN
1990	50,0	11,1	38,9	61,5	10,2	28,3
1991	78,0	20,5	1,5	67,8	18,5	13,7
*** 1992**				63,5	20,1	16,3
1993	68,1	18,8	13,2	53,8	20,4	25,8

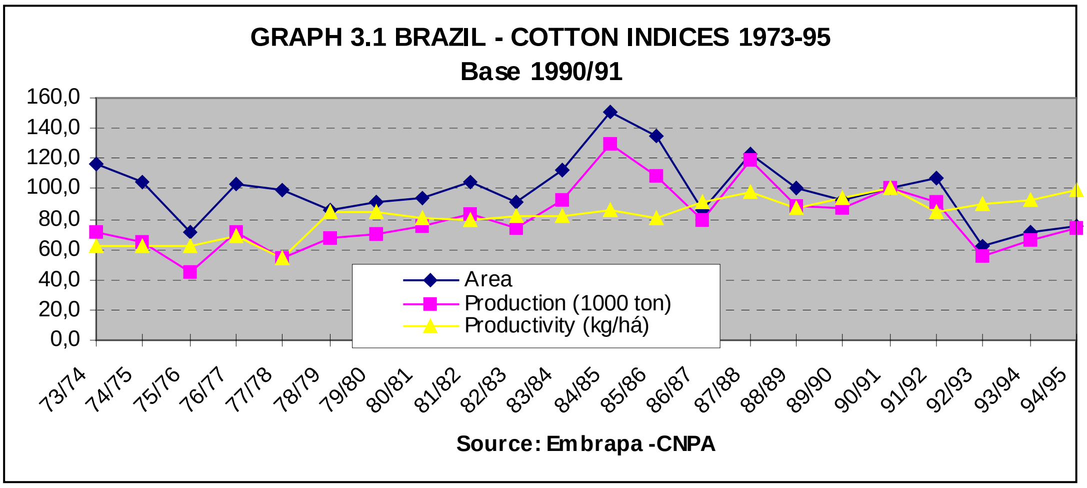
1994	60,2	18,6	21,2	46,9	16,4	36,7
Source - Sec. Plan. Ger. of Tributary Cadaster (*)Inconsistent Data due problems in the registration						

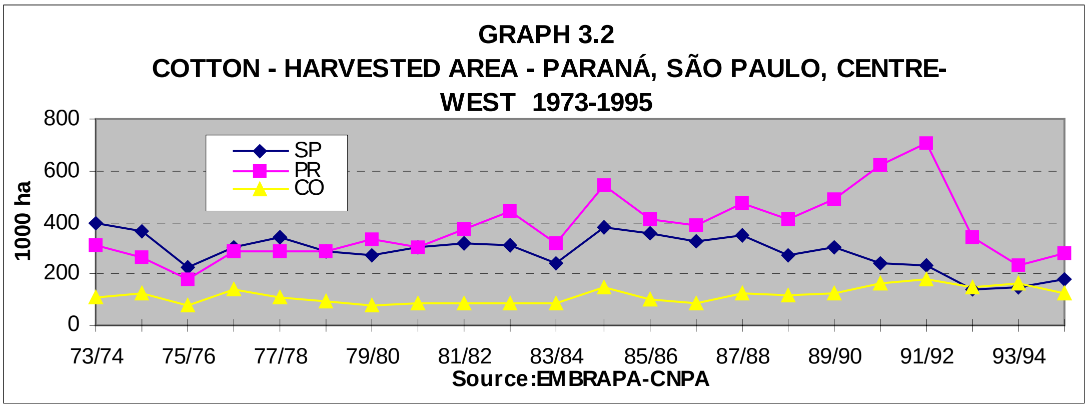
Table 4.10 Apparel Industry Origin of the purchases and Destination of the sales

CEARÁ						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
	CE	BR	FOREIGN	CE	BR	FOREIGN
1990						
1991						
1992	50,5	49,4	0,03	13,4	84,7	1,9
1993	45,7	54,2	0,19	14,4	83,2	2,4
1994	48,6	49,2	2,22	23,8	74,7	1,5
1995	43,6	52,9	3,50	16,2	83,1	0,7
SOURCE: - Sec.Fazenda CE -Depto. Collection * Jan. Set.						
PERNAMBUCO						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
	PE	BR	FOREIGN	FOOT	BR	FOREIGN
1990	50,2	49,4	0,4	19,9	79,0	1,01
1991	35,1	48,2	16,6	16,2	78,2	5,6
1992	26,2	68,7	5,2	13,2	76,5	10,3
1993	23,0	49,8	27,2	11,2	78,0	10,8
1994	23,4	60,7	15,9	15,0	77,0	8,3
1995	21,8	76,3	1,9	21,6	77,3	1,1
SOURCE - Sec.Fazenda PE-Dpto. Collection						
SÃO PAULO						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
	SP	BR	FOREIGN	SP	BR	FOREIGN
1990	69,7	26,6	3,7	46,0	49,6	4,3
1991	69,9	25,2	4,8	45,5	46,8	7,7
1992	70,4	25,4	4,3	41,8	47,2	10,9
1993	77,3	19,7	3,0	50,2	40,0	9,8
1994	75,3	20,1	4,6	43,2	45,0	11,7
***1995**	73,9	19,4	6,6	43,0	44,7	12,3
SOURCE: - Sec.Fazenda SP - Diplat-Assiat * Jan. to April						
PARANÁ						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
	PR	BR	FOREIGN	PR	BR	FOREIGN
1990	38,1	61,5	0,4	53,2	46,5	0,24
1991	40,6	58,9	0,54	54,8	44,4	0,8
***1992**	34,6	64,3	1,1	48,3	50,0	1,8
***1993**	38,6	60,6	0,84	50,0	48,4	1,6
***1994**	43,5	55,2	1,3	52,1	46,3	1,6
SOURCE: Sec.Fazenda PR-roasts. Economic *Provisory Data						
SANTA CATARINA						
	ORIGIN OF THE PURCHASES			**DESTINATION OF THE SALES**		
	SC	BR	FOREIGN	SC	BR	FOREIGN
1990	28,2	3,0	68,8	45,1	3,8	51,1
1991	46,7	6,2	47,1	60,0	10,2	29,8
1992	76,6	6,5	16,8	76,8	12,0	11,2
1993	16,7	12,4	70,9	25,6	14,9	59,5
1994	44,6	6,8	48,6	64,5	10,2	25,3
SOURCE Secretariat of the Planning and Fazenda						

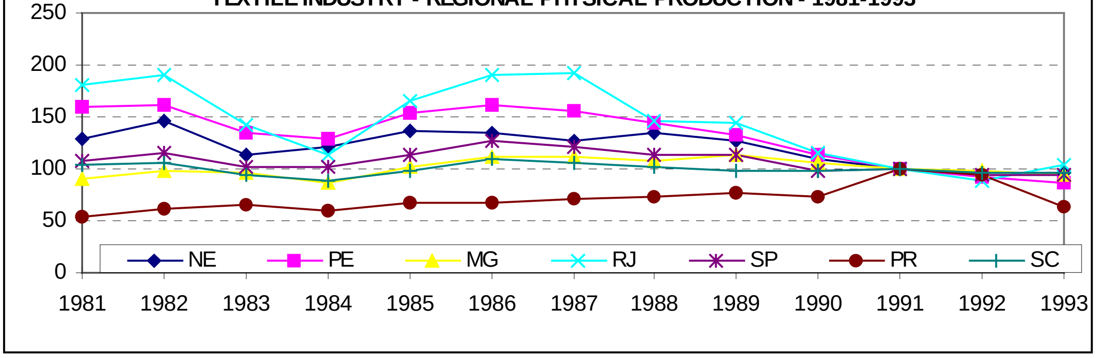
The providing of the industry of the Northeast is made with cotton from Africa. This reduction in the transport costs gives a great advantage to this region that hardly will be overcome even if other harbours in the Centre-south of the country come to exercise a great supremacy. The fragility of the area will stay in its deficiencies of electrical energy.

As it was already said, the Brazilian trade liberalisation did not alter the structural tendencies of the space division of labour in the chain productive Cotton-Textile-Apparel. However the deregulation and/or the privatisation of the sectors of electrical energy and of the harbours would make it. As important as those elements, will be the definition of the agricultural policy for the production of cotton in Brazil.

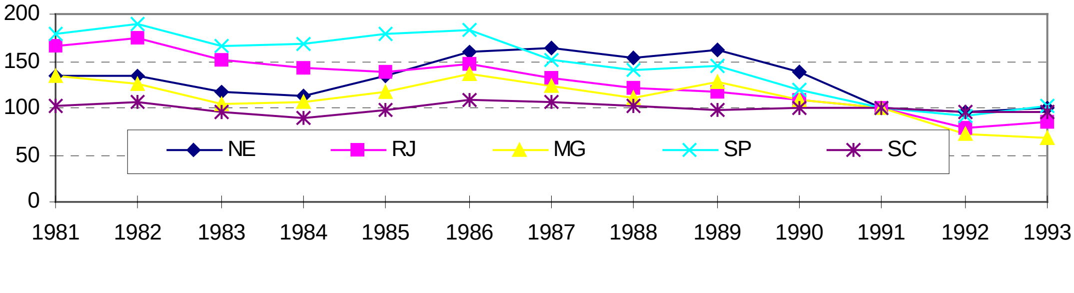




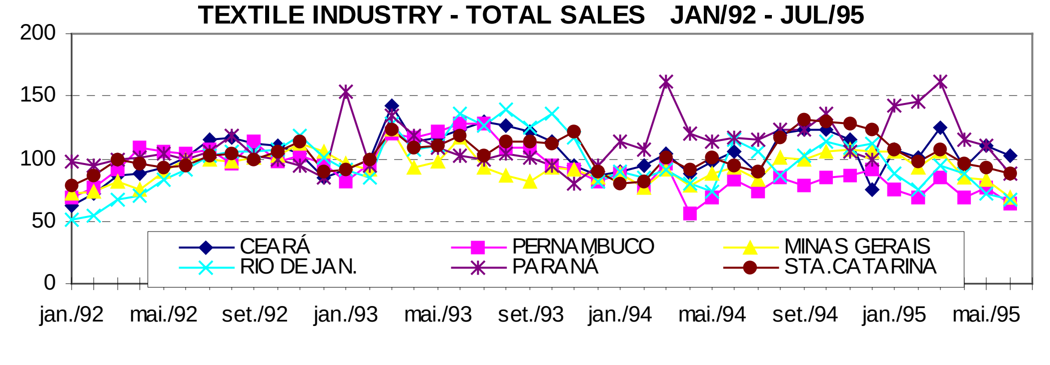
GRAPH 4.1
TEXTILE INDUSTRY - REGIONAL PHYSICAL PRODUCTION - 1981-1993

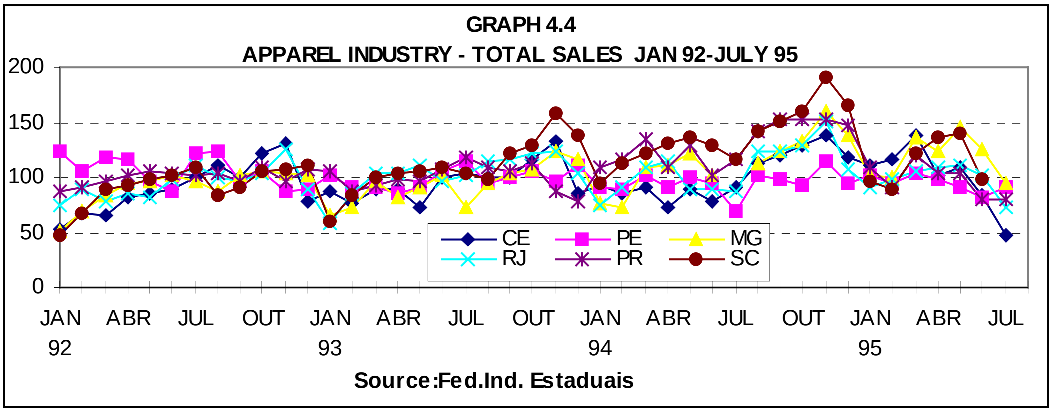


GRAPH 4.2
APPAREL INDUSTRY - REGIONAL PHYSICAL PRODUCTION 1981 - 1993



GRAPH 4.3
TEXTILE INDUSTRY - TOTAL SALES JAN/92 - JUL/95




GRAPH 4.4
APPAREL INDUSTRY - TOTAL SALES JAN 92-JULY 95
200
150
100
50
0
CE
PE
MG
RJ
PR
SC
JAN 92
ABR
JUL
OUT
JAN 93
ABR
JUL
OUT
JAN 94
ABR
JUL
OUT
JAN 95
ABR
JUL
Source:Fed.Ind. Estaduais

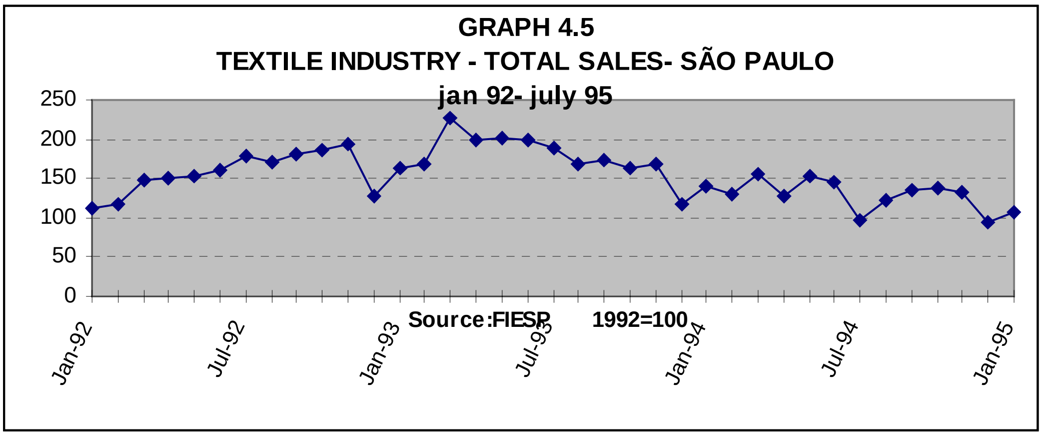
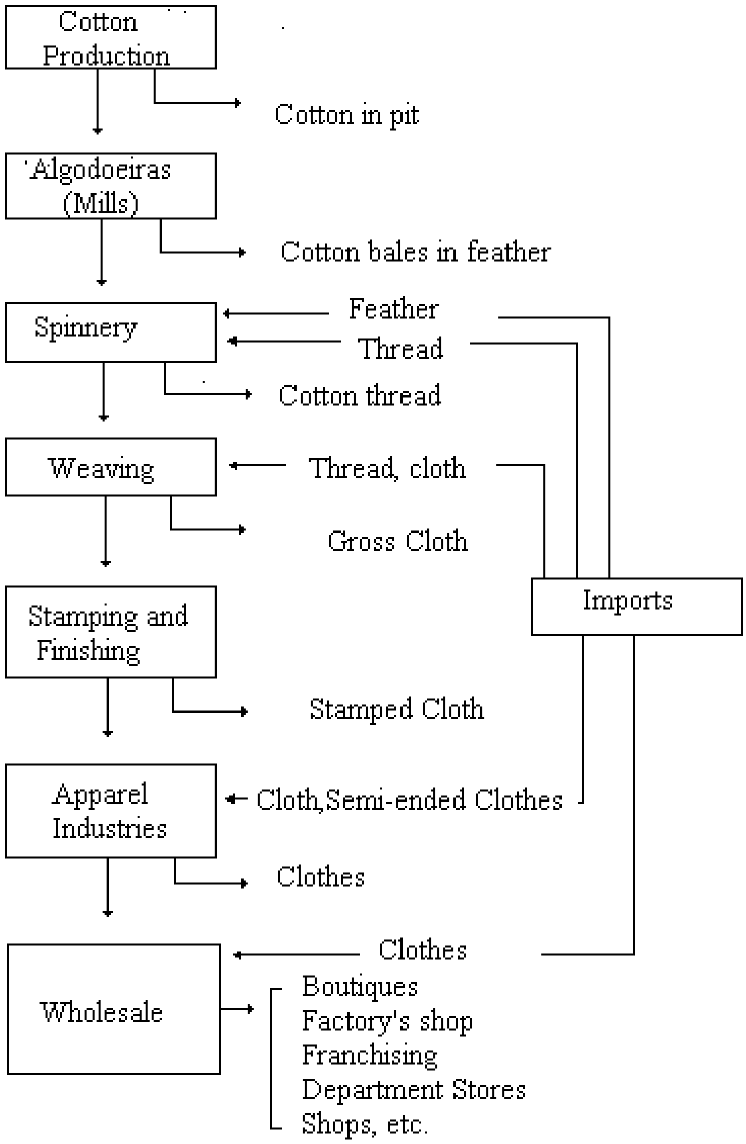
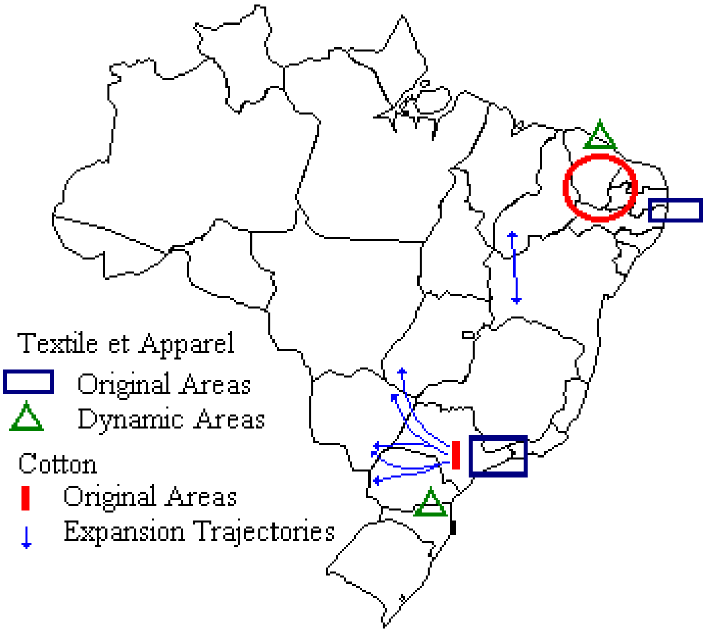

GRAPH 4.5
TEXTILE INDUSTRY - TOTAL SALES- SÃO PAULO
jan 92- july 95
250
200
150
100
50
0
Source:FIESP 1992=100
Jan-92
Jul-92
Jan-93
Jul-93
Jan-94
Jul-94
Jan-95

Diagram 2.1
The Productive Chain



IPARDES(1995): Basis from which new elements were incorporated

Map 3.1
The Original Areas and the Expansion Trajectories



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