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**INDUSTRIAL MODERNIZATION IN THE CENTRAL AMERICAN
TEXTILE INDUSTRY:**

THE POTENTIAL FOR REGIONAL COOPERATION

Handwritten: 01/2003

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INDUSTRIAL MODERNIZATION IN THE CENTRAL AMERICAN

TEXTILE INDUSTRY:

THE POTENTIAL FOR REGIONAL COOPERATION

PREFACE

The present study has been prepared by the Regional and Country Studies Branch of UNIDO and constitutes one of a series of outputs of project DP/CAM/91/009 "Preparatory Assistance Diagnosis and Proposals for Industrial Modernization in Central America". The complete list of studies already prepared is contained in Appendix 4.

The project, which commenced in 1992, was financed by the United Nations Development Programme (UNDP) Special Plan of Economic Cooperation for Central America (PEC). The main aim of the project was to carry out industrial sector and subsector analysis with a view to elaborating policy and project proposals that would contribute to the modernization of Central American industry in the medium term. The principal areas of analysis included: industrial, trade and financial policy; agroindustry; textiles; metalworking; and leather and footwear.

Acknowledgement is due to the representatives of the Central American¹ governments, private sector, national and regional institutions and the UNDP as well as the national and international project personnel who contributed to the undertaking of field work and the final outcome of the project.

¹ The countries involved in the project were Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

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1. INTRODUCTION

The need for modernization in the Central American textile and clothing industry derives from developments both within the sub-region and at an international level. In the first place, starting with Costa Rica, El Salvador and Guatemala in 1986, followed by Nicaragua in 1987 and Honduras in 1990, the Central American countries have all embarked on a process of trade liberalization which will by the end of 1994 have reduced import duties on all goods to a maximum of 20 per cent (CEPAL, 1991). This will lead to firms being forced to approach international levels of competitiveness in order to survive in the local market, which has never been the case before.

The international textile and clothing industry has also been changing rapidly in recent years. This has had important implications for the determinants of competitiveness in the industry. Technological developments in the textile industry such as the introduction of open-end spinning and shuttleless looms have increased the capital-intensity of production so that textiles can no longer be thought of as a labour-intensive product. Clothing however continues to be a relatively labour-intensive industry and the most important changes in the determinants of competitiveness in this sector have been organizational rather than technological innovations. These changes involve greater emphasis on quality, the development of "niche" markets, a "quick-response" system of inter-firm relations, and much greater stress on cooperation amongst producers.

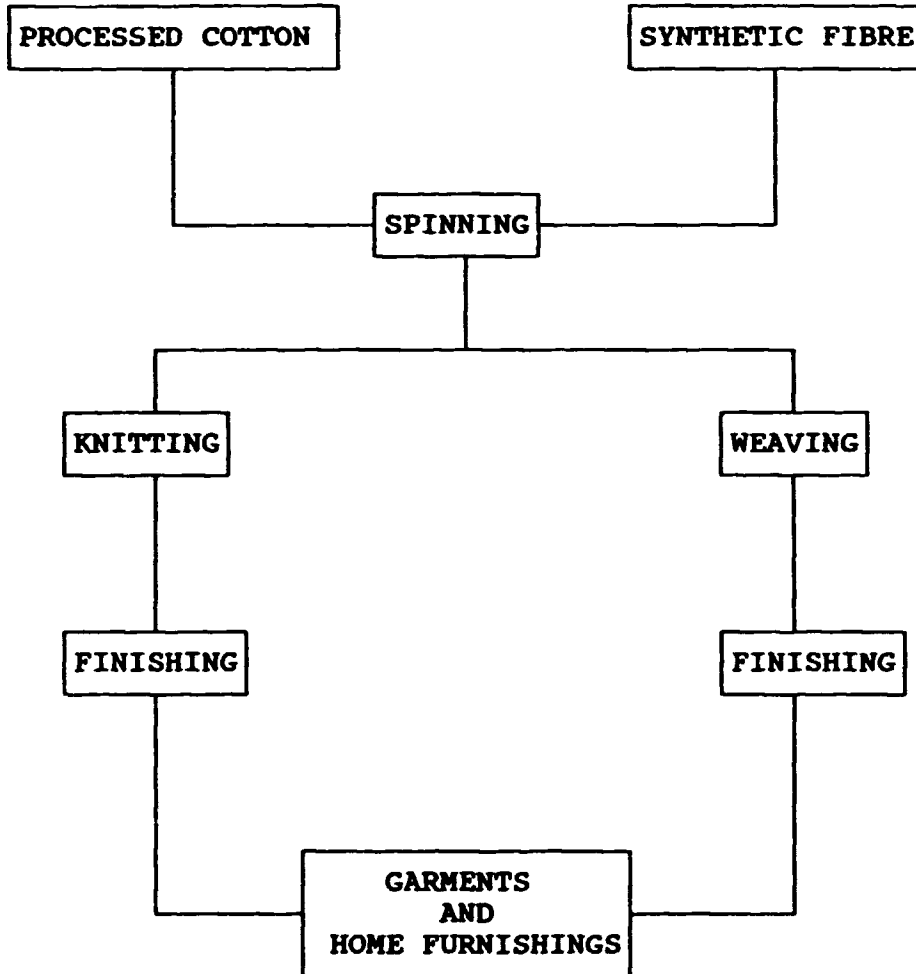
So far, in Central America, the process of reconversion to meet these new challenges has been relatively limited, affecting only a small minority of firms in the industry. However, unless many firms are to disappear in the near future, change in the industry is inevitable.

Programmes for modernization of the textile industry have been developed within a number of Central American countries with the support of UNIDO, but these have had a purely national focus and have tended to neglect the regional dimension. The reduced political tension within the sub-region and the progress made towards implementing a new common external tariff by the end of this year, has led to better prospects for increased intra-regional cooperation. This is an opportune moment therefore to consider the potential for increased complementarity and specialization within the Central American textile and clothing industry.

The purpose of this report is to identify the potential for and obstacles to a sub-regional strategy of modernization in the textile and clothing industry. It does not seek to provide a detailed analysis of the industry in the individual countries which needs to be carried out by the relevant national projects, but only a broad outline of the salient features of each Central American country's industry in order to identify strengths and weaknesses.

The approach taken in this study is to look at the textiles and clothing industry as a production chain which goes from the raw materials to the final consumer goods. Figure 1 shows the main stages in this production chain.

FIGURE 1: THE TEXTILE-CLOTHING PRODUCTION CHAIN



In the Central American context the main fibers used in the textile industry are cotton and man-made (synthetic) fibers. In the first intermediate stage of the chain, natural and synthetic fibers are spun into yarn of different types (cotton, polyester etc.) and count (thickness), or into thread for sewing.

At the next stage, yarn is converted into fabric either by weaving or by knitting. These are two quite distinct processes, usually found in separate firms. In weaving, flat lengths of cloth of different widths are produced through interlacing sets of yarns at right angles on a loom. In knitting, yarns are interlaced by latched or spring needles arranged in a linear or circular array to produce either flat or tubular goods.

Finishing involves cleaning and preparing fabrics, dyeing or printing, and enhancing functional properties of the fabric through chemical treatment. This is a particularly capital-intensive part

of the textile-clothing chain. Woven and knitted fabrics are often finished in separate plants because of differences in fabric structure and processing requirements.

The production of final goods can be divided into two parts, apparel and home furnishings. Apparel manufacture is the most important of these and involves design, cutting and sewing into garments. In Central America it is important to distinguish between those firms which produce mainly for the domestic market and usually carry out all three operations, and those "maquila" firms which produce predominantly for export and which only make-up garments from ready-cut imported fabric. The home furnishing sector includes carpets, rugs, sheets, curtains and towels which are often produced by integrated firms which produce their own fabric.

In this report the production chain is examined in each of the Central American countries in order to identify the particular areas of strength and weakness. This then forms the basis for analyzing the competitiveness of the textile-clothing chain and its various components for each country. The overview of the production chain in the individual Central American countries is presented in Sections 2-6 of the report.

Section 7 brings together the information on the five Central American countries to establish that there are differences in the structure of comparative advantage between the five countries, and that these are not currently being exploited within the sub-region, despite the benefits that could be achieved through intra-Central American complementarity and specialization.

Section 8 identifies the major obstacles which have prevented greater sub-regional cooperation in Central America. The report concludes with Section 9 which discusses measures which could be taken, in conjunction with action to modernize the textile and clothing industry at the national level, in order to encourage increased complementarity and specialization within the industry.

2. COSTA RICA

2.1 Significance of the Textile and Clothing Industry

Although the textile and clothing industry accounted for only 6.7 per cent of manufacturing value added in Costa Rica in 1990 having declined from 8.1 per cent ten years earlier, it is by far the largest manufacturing industry in terms of employment with more than 40,000 workers, representing 30 per cent of the total manufacturing labour force (Banco Central de Costa Rica).

The sector's total output has stagnated in the 1980s. This has been a result of the recession in the domestic market and the decline in exports to the rest of Central America. Exports to the rest of the world (mainly the USA) have grown rapidly from \$28.3 million in 1984 to \$340.9 million in 1989 (Ministerio de Comercio Exterior)². However this was not sufficient to offset the decline of the domestic and Central American markets (CODESA, 1990a, Table III.2). Nevertheless employment has increased rapidly, particularly in clothing during the 1980s, reflecting the rapid expansion of "maquila" operations.

2.2 The Production chain in the Costa Rican Textile and Clothing Industry

2.2.1 Raw materials

Costa Rica has very limited local production of cotton which in recent years has been running at about 1000 MT per annum. The local supply is regarded as irregular and as a result about 85 per cent of the cotton used by the textile industry is imported from the USA and from other Central American countries (Crowther, 1990). The country also relies on imports of synthetic fibers.

2.2.2 Spinning

There are four major firms producing yarn in Costa Rica. Of these three are 100 per cent locally owned firms producing for the domestic weaving and knitting industries while the fourth, and largest, is a 100 per cent foreign owned firm which supplies its own yarn requirements, but also sells part of its production on the domestic market.

There is little competition in this sector of the industry. One firm specializes in producing yarn for the knitwear industry, while the other firms tend to specialize in different counts of yarn.

² The figure for 1989 exaggerates the growth in foreign exchange earnings because a large part of the exports in that year came from firms operating under the system of temporary imports and from the Free Zones. If the imports of these firms are deducted from the total value of exports to calculate net exports, these would amount to \$132.5 million which still represents a significant increase over five years.

Spinning is technologically relatively backward. There has been little investment in recent years and there are few O-E rotors in operation. Capacity utilization varies considerably between firms, but is lower than elsewhere in Central America except Nicaragua (Bery, 1990).

The sector is almost exclusively oriented towards the domestic market and very little yarn is exported. Although it produces sufficient yarn for the weaving industry there have been complaints regarding quality although recently it has been reported that this has improved. There is an insufficient supply of yarn for the knitwear industry to meet domestic demand and the local product is also considerably more expensive than imports.

2.2.3 Weaving

Ten weaving firms cover about 50 per cent of the local demand for woven cloth while the remaining 50 per cent is met by imports mainly from Guatemala. Production is almost entirely for the domestic market and Costa Rica has not been competitive even at the sub-regional level.

Weaving, like spinning, is technologically backward. Many looms are narrow (45"), speeds are considerably below international standards and there are few shuttle-less looms. Also, as in spinning, capacity utilization is low compared to other Central American countries.

Polyester yarn is imported mainly from the United States and there are also some imports of cotton yarn.

Local firms are not competitive in terms of price and so they try to compete through product differentiation. The main source of competition comes from other firms within Central America, particularly Guatemala. The flat textiles industry has been well protected from competition from imports from outside the sub-region. It is estimated that the Effective Rate of Protection (ERP) has been almost 100 per cent in recent years (Viquez Fuentes and Pereira del Vecchio, 1989, Annex 4). However when the new harmonized external tariff is adopted, the ERP will probably fall to below 50 per cent creating considerable problems for the sector.

2.2.4 Knitting

The knits sector in Costa Rica is made up of more than twenty firms, the vast majority of which are integrated forward into clothing. In 1990 there were 5,400 workers employed in the sector (Banco Central de Costa Rica).

Technologically the industry is more advanced than spinning and weaving. Because investment requirements are lower in knitting, it has been much easier for firms to modernize gradually. Two firms are reported to have modernized extensively and to have installed Computer Aided Design (Crowther, 1990). Generally, equipment in this sector is in good condition. However capacity utilization is low reflecting the recession in the domestic market.

Despite substantial protection³, the industry faces considerable competition from imports which, it is estimated, account for more than half of the total market.

Traditionally the knitwear industry exported to the rest of Central America. With the decline of the Central American market, there has been a greater emphasis on exports to the rest of the world. Exports have been developed partly by firms with their own trade marks. Although many firms began exporting via sub-contracting, this has not become the dominant form of export in this sector. By the late 1980s, almost half of the sector's output was being exported, of which 88 per cent was to the rest of the world representing an almost complete inversion of the situation in 1980 when 93 per cent of exports were to Central America (CODESA, 1990a, Table III.1).

As there are only two local suppliers of yarn for knitting, the sector depends to a considerable extent on imports. These are not only cheaper than locally produced yarn but also have the advantage for firms which do not have their own dyeing facilities in that they can import dyed yarns.

2.2.5 Finishing

The finishing sector like spinning and weaving is characterized by equipment which dates from the early 1970s. Although this equipment is still functioning, it is inefficient in terms of energy use.

2.2.6 Clothing

In 1990 there were over 600 clothing establishments in Costa Rica employing almost 30,000 workers (Banco Central de Costa Rica). This is the most export-oriented sector of the textile-clothing chain, exporting almost two-thirds of its gross output. During the 1980s production for the domestic and Central American markets on the one hand and exports to the rest of the world on the other have evolved in diametrically opposite directions.

It is essential to distinguish between two types of garment operations in Costa Rica. One group of firms produces garments from their own designs and have cutting and making-up operations. These produce for the domestic market and may also export under the export contract system which requires a local content of at least 35 per cent. These firms have been hit by the recession in the 1980s and the resulting contraction of domestic demand. Despite being protected from extra-regional imports, with an estimated ERP of over 50 per cent (Viquez Fuentes and Pereira del Vecchio, 1989, Annex 4) these firms face competition from smuggled clothes and from cheap imports of second-hand clothes which make this a highly competitive sector.

³ The Effective Rate of Protection at the end of 1989 was over 70 per cent (Viquez Fuentes and Pereira del Vecchio, 1989, Annex 3).

The second form of garment operation in Costa Rica is the "maquila" type where firms simply make-up garments which are designed abroad from ready-cut imported materials. These firms operate either under the regime for temporary imports or in the Free Zones. These provide exemptions from all duties on raw materials and capital goods, export taxes and sales and domestic taxes. Under the temporary imports regime, firms are given 100 per cent exemption from profits tax while in the Free Zones they are given a 100 per cent exemption for six years followed by a 50 per cent exemption for the following four years.

There are more than 100 "maquila" firms operating in Costa Rica and as can be seen from Table 1 exports have grown rapidly in recent years. Such has been the success of Costa Rican garment exports that the US imposed quotas on exports of cotton trousers and shorts; men's and boys' shirts; and skirts in the late 1980s. However these quotas have not been fully utilized.

By their very nature, these "maquila" operations are highly dependent on imported inputs. As a result the national value added component in exports of textiles under the temporary imports regime is only about 2,5 per cent of the f.o.b. value of exports, and there is no evidence of a tendency for this to increase.

TABLE 1: EXPORTS OF CLOTHING FROM COSTA RICA, 1985-1991 (US\$mn)

Year	Free Zones	Temporary Imports	Other	Total
1985	-	-	10.6	10.6
1986	3.4	118.2	25.8	147.4
1987	12.3	137.7	45.4	195.4
1988	19.3	180.9	51.6	251.9
1989	42.6	230.1	50.4	323.1
1990	n.a.	n.a.	n.a.	n.a.
1991	n.a.	232.1(a)	72.0(b)	n.a.

Notes: (a) Total for 9 months

(b) Total for 11 months. Includes textiles.

Source: Ministerio de Economía y Comercio.

2.3 Competitiveness of the Costa Rican Textile Industry

The above discussion suggests that the Costa Rican spinning and weaving industries are technologically backward and internationally uncompetitive. They are also the most highly protected part of the textile-clothing chain. In contrast the garment and knitting industries are the sectors in which Costa Rica appears to enjoy a competitive advantage.

This is borne out by a study carried out by CODESA in 1990. This showed that during the 1980s the various indicators of international competitiveness of the spinning, weaving and finishing industry declined significantly, while that of the garment industry improved substantially from being a net importer to being a net exporter (CODESA, 1990a, Annex 2). In the case of the knitting industry, competitiveness declined in the first half of the decade but then improved after 1986.

TABLE 2: INDICATORS OF COMPETITIVENESS IN THE COSTA RICAN TEXTILE INDUSTRY, 1988

	Spinning, weaving and finishing	Knitting mills	Clothing
Net export ratio (a)	-0.59	0.02	0.78
Apparent competitiveness(a)	0.41	1.37	8.50

Note: (a) See Appendix 1 for definitions
Source: CODESA (1990a), Annex 2

By the late 1980s, Costa Rica had a clear competitive advantage in clothing and a more marginal competitive advantage in knitting, while it was at a competitive disadvantage in spinning, weaving and finishing.

However within these average figures for the main sectors of the textile-clothing chain, it is possible that Costa Rica enjoys a competitive advantage in some products or processes in sectors where it is apparently not competitive. Thus within spinning, weaving and finishing Costa Rica had positive net exports of polyester yarns, although this was more than offset by trade deficits in other yarns and fabrics (CODESA, 1990a, Annex 2).

It is therefore necessary to disaggregate further to identify the specific products in which Costa Rica enjoys a competitive advantage. In what follows this is done on the basis of data for U.S. imports of textiles from Costa Rica, using the Balassa indicator of Revealed Comparative Advantage (See Appendix 1 for an explanation of this indicator). Costa Rica's share of U.S. imports of a specific product is expressed as a ratio of the country's share in total U.S. imports of textiles and garments. The leading products in terms of RCA in 1990 are shown in Table 3.

TABLE 3: REVEALED COMPARATIVE ADVANTAGE OF COSTA RICAN TEXTILE EXPORTS TO USA, 1990

Product	RCA
MMF brassieres	11.6
MMF underwear	6.7
MMF suit type coats	6.0
Wool suit type coats	5.9
Cotton underwear	5.2
Cotton trousers (men & boys)	3.6
Cotton suit type coats	3.5
Wool suits (men & boys)	2.8
MMF suits (women & girls)	2.5
SLR skirts	2.3
Wool coats	2.2
Wool suits (women & girls)	2.2

Source: Appendix 2

As can be seen from Table 3, Costa Rica's competitive advantage lies very clearly in garments. Within this sector of the industry, although simple products such as brassieres and underwear occupy a leading position, it is also noticeable that Costa Rica has a revealed comparative advantage in more sophisticated products such as suits, jackets and coats. This reflects the fact that with its higher wage levels compared to other Central American countries, it has had to take advantage of its relatively skilled and well-educated labour force to move into more sophisticated products with greater value added.

3. EL SALVADOR

3.1 Significance of the Textile and Clothing Industry

In 1985-7 the textile and clothing industry accounted for almost 13 per cent of manufacturing value added and 27 per cent of manufacturing employment in El Salvador. This represented a sharp fall in the industry's share of value added from almost 30 per cent in the mid-seventies, although its contribution to employment held up much better (UNIDO, 1990, Table 2.3).

The falling share in value added reflected an absolute decline in production since 1970 which became particularly marked in the 1980s. El Salvador's exports of textiles which developed significantly during the 1970s were interrupted by the civil war in the 1980s. In 1989 production began to recover and in the early 1990s the prospect of expansion was given a further boost by the peace accords.

3.2 The Production Chain in the Salvadorean Textile and Clothing Industry⁴

3.2.1 Raw Materials

In 1980 El Salvador was a major producer and exporter of cotton but during the 1980s production declined considerably so that by 1990 local production only covered 30 per cent of demand (Bery, 1990). Synthetic fibers are also mainly imported.

3.2.2 Spinning

El Salvador has the largest spinning industry in Central America in terms of production capacity. The industry specializes in the production of cotton yarn in which it is internationally competitive. Most of the mills are at or above the minimum efficient scale (estimated at 15,000 spindles).

El Salvador has two of the most modern mills in Central America. There has been new investment during the 1980s, mainly in fine spinning, although some open-end rotors have also been introduced. Capacity utilization in this sector is high at 94 per cent (Bery, 1990).

The spinning industry in El Salvador receives considerable protection from imports⁵. The import duty on yarn is 20 per cent if it is imported as an intermediate product and 30 per cent if it is prepared for sale to the public, whereas the duty on raw materials

⁴ Since the consultant was not able to visit El Salvador this section is less detailed than that on the other Central American countries and depends heavily on the work of the national counterpart.

⁵ This information refers to the situation in mid-1991 and import duties were due to be reduced somewhat in mid-1992.

is only 5 per cent. Imports also pay a 5 per cent stamp duty. Assuming that raw materials account for 55 per cent of the cost of yarn⁶, this gives an ERP of 43 per cent on yarn as an intermediate product and 66 per cent as a final product.

3.2.3 Weaving and Finishing

Although it is the region's leading producer of yarn, El Salvador ranks behind Guatemala in terms of fabric production and weaving capacity. Woven fabrics are in general not internationally competitive with locally produced cloth being more expensive than the imported product. There are however some woven products, most notably towels, in which El Salvador is highly competitive. Although there has been some technological modernization with the introduction of shuttleless looms during the late 1980s, these still represent a small proportion of total capacity. The indicators are that firms are able to achieve a high level of utilization of existing capacity.

Since weavers are able to import yarn at a total duty of 25 per cent and the duty on fabrics is 40 per cent, the ERP on weaving and finishing is estimated at 56 per cent, higher than on yarn as an intermediate product but lower than for yarn for sale to the public.

3.2.4 Knitting

The knitting industry is relatively efficient by Central American standards and some firms export to the United States, but little detail is available on this sector of the industry.

3.2.5 Clothing

While in other Central American countries (except Nicaragua), maquila activity was the dynamic sector of the clothing industry in the 1980s, in El Salvador which was the first Central American country to develop a significant maquila industry, this has declined in the 1980s. One indicator of this is that employment in maquila firms in the garment industry in the early 1990s was only 6000 compared to between 16,000 and 20,000 in the 1970s (Castaneda, 1990).

The domestic market has been affected by the civil war during the 1980s and demand has contracted. In the latter half of the 1980s production of clothing and footwear in El Salvador was about a third lower than in 1980. However the peace accords do offer prospects for a recovery in domestic demand and a resumption in large-scale export activity.

The clothing industry in El Salvador is the least protected sector of the textile-clothing chain, since the duty on imports is 40 per cent, the same as for imports of fabrics, except for some cases of fabrics such as denim which enjoy a lower than normal import

⁶ This figure is derived from international data on cost structures in textile production.

duty. Thus for most garments, the ERP can be estimated to be only 40 per cent.

3.3 Competitiveness of the Salvadorean Textile Industry

The above discussion suggested that the most competitive part of the textile-clothing chain in El Salvador was spinning, although in the Central American context, other sectors might also be competitive at least for some products.

Aggregate data for textiles and for clothing in the late 1980s indicate that in both broad categories the Revealed Comparative Advantage was negative, but only slightly so (see Table 11 below). Unfortunately there are no detailed studies available of various alternative indicators of competitiveness for the El Salvadorean industry, of the kind which have been carried out in Costa Rica. However partial data on the Net Export Ratio for selected textile products reveal that El Salvador appears to have a strong competitive position in textile yarns (SITC 651), Textile Articles n.e.s (658), Women's Outwear Not Knit (843), and Undergarments knit (846).

TABLE 4: REVEALED COMPARATIVE ADVANTAGE OF SALVADOREAN TEXTILE EXPORTS TO USA, 1990

Product	RCA
Carded cotton yarn	41.9
Combed cotton yarn	13.5
Cotton pile towels	11.8
Cotton dressing gowns	10.2
MMF underwear	7.5
MMF dresses	5.5
Cotton dresses	5.1
Playsuits, sunsuits etc.	4.7
Other cotton apparel	2.4
Other MMF apparel	2.4

Source: Appendix 2

Table 4 gives further support to the view that El Salvador enjoys a strong comparative advantage in cotton spinning which is indicated by the high RCA for both carded and combed cotton yarn. It also confirms the industry's strength in other textile products, particularly cotton towels. Finally it indicates a competitive advantage in specific products within the clothing sector, particularly cotton dressing gowns, dresses (both cotton and synthetic), and other garments made from synthetic fibers.

4. GUATEMALA

4.1 Significance of the Textile and Clothing Industry

In 1985-7 the textile and clothing industry accounted for 8.9 per cent of manufacturing value added and 15.1 per cent of manufacturing employment in Guatemala (UNIDO, 1990, Table 2.3). The early 1980s saw a significant fall in production which only began to recover slowly in the second half of the decade. Until the late 1980s the textile industry was mainly oriented towards the domestic and the Central American markets. Since the mid-eighties however, exports of textiles and garments have grown rapidly and foreign exchange earnings have increased from \$5.5 million in 1986 to \$108.6 million in 1991 accounting for almost 10 per cent of total Guatemalan export earnings.

As a result the share of the industry within manufacturing is likely to have increased since the mid-eighties. In the case of value added, this is somewhat moderated by the high import content of exports (see below) but the employment effect has been more significant. One estimate is that exports have created 70,000 additional jobs in the industry between 1985 and 1991 (Gremial de Exportadores).

4.2 The Production chain in the Guatemalan Textile and Clothing Industry

4.2.1 Raw materials

Guatemala is the largest producer of cotton in Central America, although as elsewhere in the sub-region, production declined during the 1980s. Until 1982 cotton was the second largest export after coffee, but since then it has been overtaken by sugar, bananas and other products. However despite declining production, good quality local cotton is available on the market. A problem which has been noted however is that unless a buyer enters into a contract for a year's supply, the best quality cotton is exported. Firms which do not have sufficient working capital to buy a whole year's supply are then forced to pay higher prices to buy in the U.S. market, or make do with inferior grades of cotton (Bery, 1990).

In the case of synthetics, basic fibers are not produced in Guatemala and are imported from outside Central America, especially from the United States and Mexico.

4.2.2 Spinning

Two major firms account for over half the production capacity in spinning and there is very little competition in this sector. The market leader is a fully integrated producer, while another major enterprise produces thread for the retail market.

Equipment in the industry is relatively modern and open-end rotors have been introduced in the 1980s on a larger scale than anywhere else in Central America. While cotton yarn is

internationally competitive in terms of quality and price, synthetic yarn, for which there are only two producers is expensive and of low quality.

Capacity utilization in spinning is high and local production is insufficient to meet domestic demand. As a result 20-30 per cent of the total local demand for yarn is supplied by imports, mainly from El Salvador, Mexico and the USA.

The industry receives considerable protection since imports of cotton yarn face a total import duty (including surcharge) of 23 per cent, and synthetic yarn prepared for retail sale has an import duty of 33 per cent. With raw materials paying an import duty of only 8 per cent, the Effective Rate of Protection for spinning is substantial, varying from 41 per cent for yarn as an intermediate product to 64 per cent as a finished good.

4.2.3 Weaving

There are about thirty firms producing woven products in Guatemala. The two largest firms account for about 45 per cent of total production and the six largest for between 70 per cent and 75 per cent (Camara de Industria). There is little specialization in the industry since most firms have tended to adopt a strategy of growth through diversification which has meant that there is competition in most product lines. Nevertheless the dominant position of one integrated firm leads it to act as an informal price leader.

Technologically the weaving sector lags somewhat behind spinning. There has been some investment in shuttleless looms in recent years, but these still account for a relatively small share of total capacity and thirty year old looms are still in operation. Capacity utilization is high, although not as high as in spinning.

Imports account for about 20 per cent of production costs in flat textile products. At present the industry is well protected since the import duty on fabrics is 33 per cent compared to 23 per cent on yarn. Since international cost data indicate that the value added in weaving represents 27 per cent of the cost of fabric, this would give an ERP of 67 per cent on weaving in Guatemala, which is likely to fall to less than 50 per cent when the new harmonized tariff is introduced.

4.2.4 Knitting

There are more than forty medium and large firms producing knitwear in Guatemala, roughly equally divided between circular knit and flat knit fabrics. Five firms account for roughly two-thirds of production of flat knit products, while in circular knit fabric, two firms make up around 40 per cent of production.

Guatemala has the most advanced knitwear sector in Central America despite the relatively small size of plants (Marroquin, 1990). This reflects the continuous investment that has been made in the industry to introduce new technology. Capacity utilization

is low, except in the case of socks, although it is not as low as elsewhere in Central America (Marroquin, 1990). This reflects the decline in local demand in recent years which has meant that some equipment cannot be used.

The industry is heavily dependent on imported inputs which accounted for almost three-quarters of total purchases in 1989 (Instituto Nacional de Estadística). Synthetic yarns are imported mainly from Mexico and Colombia.

Most of the firms produce entirely for the domestic market or with some exports to the rest of Central America. A few firms have significant exports outside the region, particularly one of the leading producers which has modernized extensively in recent years and now exports 40 per cent of its production.

4.2.5 Finishing

Most firms have some finishing operations. The equipment here tends to be relatively old (about 25 years) and un-modernized (Bery, 1990). There is also considerable excess capacity in finishing where normally only one or two shift operation is practiced compared to three shifts in spinning or weaving.

Chemicals and dyes for finishing are imported, mainly from Switzerland and Germany. Because of long lead times, stocks of six to twelve months are required.

Exports of finished flat goods are relatively limited. The CEPAL report estimated that only 10 per cent to 20 per cent of output was exported, mainly to the rest of Central America. This figure did not however include the largest producer which exports 30 per cent of its output, particularly to the USA. Total exports of yarns and fabrics during the 1980s have been stagnant however, growing at only 0.2 per cent per annum over the decade (Gremial de Exportadores de Productos No Tradicionales, n.d., Table 13).

4.2.6 Clothing

There are over 300 firms producing garments in Guatemala with an estimated 60,000 sewing machines (Apparel Manufacturers Exporters Committee, n.d., p.1). The most rapidly growing sector of the industry in recent years has been that producing for the export market while production for the domestic market has been relatively stagnant.

Production for the domestic market is characterized by short production runs and limited specialization of the labour force. A number of firms were not fully utilizing their production capacity.

Imported inputs account for about a quarter of total purchases by the domestic clothing industry, including both fabric and accessories. Import duties on clothing are 33 per cent, the same as on imports of fabrics, so that the ERP for garment making is actually lower than for weaving or knitting, although the industry still receives significant protection. However there are complaints about

competition from smuggled and second-hand clothes which enter the domestic market, making this a highly competitive sector.

TABLE 5: EXPORTS OF CLOTHING FROM GUATEMALA, 1986-1991

Year	Clothing Exports (mnUS\$)	Employment(a) ('000)
1986	3.8	5
1987	8.7	10
1988	21.9	20
1989	37.0	42
1990	53.7	60
1991	86.8	70

Note: (a) Employment generated by exports of textiles and garments.

Source: Gremial de Exportadores

Exports of garments from Guatemala have grown rapidly in recent years as can be seen from Table 5. Data on exports is not always consistent among different sources and the figure given here represents the foreign exchange generated by exports rather than the total value of exports which also includes a large imported component. It is estimated that in 1991 the local value added component of textile and garment exports was 44 per cent (Gremial de Exportadores).

Most garment exporters in Guatemala operate under a system of temporary imports which exempt them from paying customs duties and taxes on imports of raw materials, packing materials, machinery, spare parts and accessories. They are also exempt from income tax for ten years and from all export taxes.

As already mentioned, it has been estimated that exports of textiles and clothing have generated 70,000 jobs in Guatemala by 1991. This exaggerates the real employment effect however since the figure includes firms which produce partly for export and partly for the domestic market. In some cases employment has been created in small sub-contracting workshops as for example in San Pedro Sacatepequez where indigenous producers have been organized to produce shirts for Van Heusen.

Although the export sector is at present heavily dependent on imported inputs, there has been some development of "full-package" exports recently, which is reflected in the increase in the local value added component from 35.6 per cent in 1989 to 44 per cent in 1991 (Gremial de Exportadores). This is higher than in other Central American countries for which data is available and indicates the relative strength of the Guatemalan textile industry.

The major products currently exported from Guatemala are trousers, dresses, polo shirts and ordinary shirts. In 1990 the USA imposed quotas on Guatemalan exports of cotton trousers and these are currently being extended to wool trousers. It is possible that these will be extended to other products in the not too distant future, so that the rate of growth of exports may well slow down.

4.3 Competitiveness of the Guatemalan Textile Industry

Not surprisingly in view of the fact that Guatemala is the largest of the Central American countries it has a relatively strong textile industry all along the production chain. As a significant cotton producer, it is also not surprising that Guatemala has a particular strength in cotton textiles.

In aggregate it appears that Guatemala has a Revealed Comparative Advantage in clothing but a small Comparative Disadvantage in textiles (see Table 11 below). Unfortunately there have been no studies of the competitiveness of the textile industry in Guatemala, similar to that quoted for Costa Rica relating trade and production.

At the three digit SITC level, Guatemala's Revealed Comparative Advantage is strongest in Women's Outwear Not Knit (843) and Men's Outwear Not Knit (842). Table 6 gives a more detailed indication for specific products.

TABLE 6: REVEALED COMPARATIVE ADVANTAGE OF GUATEMALAN TEXTILE EXPORTS TO USA, 1990

Product	RCA
Carded cotton yarn	9.7
Cotton gloves and mittens	5.5
Cotton trousers (women & girls)	3.2
Cotton dresses	2.9
Cotton or MMF knit fabric	2.8
Wool coats	2.5
Cotton non-knit shirts	2.4
Cotton trousers (men & boys)	2.3
Cotton skirts	2.0

Source: Appendix 2.

Table 6 confirms that Guatemala enjoys a comparative advantage in some products throughout the textile chain. Cotton yarns and knitted fabrics stand out within the textile industry, while in clothing Guatemala appears to be competitive in a variety of cotton products. It is interesting to note that while the fabric industry appears to be strongest in knitted fabrics, the reverse is true in the case of clothing.

5. HONDURAS

5.1 Significance of the Textile and Clothing Industry

The textile and clothing industry ranks second in importance within the Honduran manufacturing sector after food processing in terms of both value added and employment. In 1990 the industry accounted for 13 per cent of manufacturing value added and an even higher proportion (19 per cent) of manufacturing employment (SECPLAN, 1991, Annex 4).

However the 1980s was a period of stagnating production and falling employment in the industry. Production and employment fell during the first half of the decade, and although there was a slight recovery during the second half of the 1980s, the growth rate was low. The industry is mainly oriented towards the domestic market with exports only accounting for some 3 per cent of total output (SECPLAN, 1991, Annex 6 and 7). The industry is also heavily dependent on imports.

The most dynamic sector of the industry in recent years has been the clothing firms located in the Export Processing Zones. These have increased their exports from around US\$20 million in the mid-eighties to over US\$200 million in 1991 (FIDE).

5.2 The Production Chain in the Honduran Textile and Clothing Industry

5.2.1 Raw materials

Honduras is not a major cotton producing country in the Central American context. Locally produced cotton is regarded as being of poor quality and the amount produced has declined in recent years. As a result the country's major textile producer has switched from buying local cotton to importing from Nicaragua and Paraguay. There are no factories producing synthetic fibers in Honduras so that the industry relies entirely on imports, mainly from the United States and Mexico.

5.2.2 Spinning

There are two important spinning factories in Honduras. One is the country's largest textile company and is a fully integrated mill with weaving and finishing departments. The other is primarily a spinning mill producing sewing thread. Between them the two companies operate 26,250 spindles (Bery, 1990, Table 1).

There has been little new investment in recent years and as a result open end technology has not been introduced in Honduras. Equipment, although somewhat dated, is generally satisfactory. Quality control and production planning are adequate, although one of the firms had a rather primitive quality control laboratory.

Both spinning mills operate at full capacity. The integrated mill produces exclusively for its own use, while the sewing thread producer exports a significant part of its output. There is no

domestic supply of yarn for non-integrated producers which must therefore rely on imports. There have however been reports of plans by a South Korean firm to set up a spinning mill in Honduras.

Spinning is not highly protected in Honduras. Producers are able to import yarn at a total duty of 10 per cent. Since this is the same duty that applies to imports of cotton and of synthetic fibers, the Effective Rate of Protection for spinning is also roughly 10 per cent. However yarn imported ready for sale to the public must pay a duty of 25 per cent, which does give significant protection to the manufacturer of sewing thread.

5.2.3 Weaving

In addition to the two spinners mentioned in the previous sector, there is one other major firm producing woven cloth in Honduras. Between them they have more than 800 looms of which about half are accounted for by the integrated producer. The sewing thread manufacturer has about 100 looms. Each firm produces a variety of different fabrics.

The technological level in weaving is similar to that in spinning. Again there has been little new investment in recent years and there are very few shuttle-less looms. Capacity utilization is high and the industry is unable to satisfy the entire domestic demand.

The industry imports yarn. The integrated producer relies on imports for about 25 per cent of its total yarn requirements, while the non-integrated weaver is entirely dependent on imported yarn.

Competition within the industry is extremely limited. The three firms are all related through family connections. They have also been protected from foreign competition with total duties payable on imported fabric of 35 per cent. Assuming that the value added in weaving accounts for 27 per cent of the total cost of fabric, this represents an Effective Rate of Protection on weaving of over 100 per cent. Moreover the textile industry in Honduras has also been protected from imports from other Central American countries.

5.2.4 Knitting

The knitting industry comprises some thirteen firms employing around 2,500 workers (SECPLAN). A number of the firms are extremely small employing only a handful of workers.

Technologically the industry is relatively backward compared to the other countries of the region and there is no electronic machinery used. This is particularly true in the case of flat knit fabrics. The technological and administrative capabilities of the firms is very limited. Quality control is inadequate except in the case of those firms which produce for export.

There is a very low level of capacity utilization in the industry. This does not reflect insufficient demand since local production covers only a small proportion of the domestic market.

Despite the considerable protection which it receives from imports, the poor quality of products and consumer preference for foreign articles, means that the industry finds it difficult to compete with imports.

The industry relies entirely on imported raw materials, either from Central America or the rest of the world. Most of the industry produces exclusively for the domestic market, although there are a small number of highly export-oriented firms.

5.2.5 Finishing

Two of the main textile companies producing flat goods have finishing while the third only has a limited capacity for bleaching and dying. Some of the larger knitting factories also have dying facilities.

Although the equipment in this area is not the most modern, it is generally in good condition and functions adequately. A major problem is that because production is mainly for the small domestic market, a large variety of products has to be produced. One firm produces fifteen different families of items, with 83 different items. As a result production runs are short and this increases down-time and consequently production costs.

Finishing is characterized by substantial scale economies and the production capacity far exceeds the demand of the domestic market. As a result there is substantial excess capacity. The integrated firm reported that whereas the spinning department was functioning 24 hours a day, 360 days a year, and weaving 24 hours a day, 300 days a year, finishing only operated 12 hours a day, 300 days a year. In this case the problem was intensified by the fact that part of the firm's output was exported as greige cloth to the USA.

Finishing depends on imports of chemicals and dyes which are often imported from Europe. This sometimes causes problems because of delays in getting shipments and limits the ability to respond quickly to changes in demand.

Competition in finishing is extremely limited. This may create problems for those firms which do not have their own finishing facilities. One knitting firm reported such difficulties in getting a large textile company to even offer to dye its cloth.

5.2.6 Clothing

In 1990 the clothing industry employed more than 12,000 workers (SECPLAN, 1991, Annex 4). There were more than a hundred firms in the formal sector producing garments, not to mention a large number of informal enterprises.

It is necessary to distinguish between two sectors in the clothing industry:

- the traditional sector producing mainly for the domestic market;

- the "maquila" located in the export processing zones and producing exclusively for export.

The former has been stagnant in terms of production and employment during the 1980s, reflecting the depressed state of the domestic market. In most cases these firms are technologically unsophisticated. They produce a variety of products in a number of different styles so that production runs are short and there is limited specialization amongst the workers. Efficiency is generally low because of a lack of control in production. One-shift working is the norm in the industry and many firms do not utilize all their machines.

This is the most competitive sector of the industry with a large number of medium-sized firms and competition from micro-enterprises as well. The garment manufacturers also face competition from imports including contraband and imported second-hand clothes. The tariff (including surcharges) on clothing is 35 per cent, the same as on fabric, implying that the ERP is roughly 35 per cent, which is lower than for weaving but higher than spinning.

The garment industry relies heavily on imports of denim, printed fabrics, thread, buttons, zips, labels etc. Very little of the output of this sector of the industry is exported.

In contrast the maquila firms are entirely oriented towards exports which have grown rapidly in recent years.

TABLE 7: EXPORTS OF CLOTHING FROM HONDURAS, 1985-1991

Year	Exports (mnUS\$)
1985	26.2
1986	32.5
1987	42.8
1988	63.4
1989	90.0
1990	117.0
1991	202.0

Source: FIDE

Firms in the Export Processing Zones are permitted to import all machinery and inputs duty free, are exempt from all income, sales or corporate taxes, and are able to withdraw profits and capital at any time. It is estimated that a total of 16,000 jobs have been created through exports of garments (FIDE).

Firms producing for export are able to specialize to a much greater extent than those producing for the domestic market. They also have to meet the demanding criteria of the U.S. principals in

terms of quality and delivery dates. Firms which convert from producing for the domestic or regional market to exporting to the U.S.A. report changes in technology as a result of technical assistance from overseas and the streamlining of production operations.

The most important apparel products exported from Honduras in terms of value are men's cotton trousers, men's cotton shirts, bras, and cotton underwear. Maquila firms rely almost entirely on inputs supplied from abroad. There are virtually no linkages between the domestic textile industry and the maquila. One maquila company reported that it was much easier to work with imported inputs because delays in local supplies could potentially disrupt the whole production schedule.

5.3 Competitiveness of the Honduran Textile Industry

The above analysis of the textile-clothing chain in Honduras gives some indication of the relative competitiveness and level of technological development of different parts of the industry. It suggested that spinning, weaving and finishing suffered from a lack of investment in recent years which has held back technological advance in the sector. Moreover, the knitting industry is probably even less competitive than the flat goods industry. However there are indications that in garment manufacture, Honduras does have the capability to be internationally competitive in some product lines.

A more complete picture of the situation can be achieved through analyzing the insertion of different parts of the production chain into the international economy, and in particular by estimating indices of Revealed Comparative Advantage for different products.

TABLE 8: INDICATORS OF COMPETITIVENESS IN THE HONDURAN TEXTILE INDUSTRY, 1980, 1985, 1990

	1980	1985	1990
Net Export Ratio (a)			
Textiles	-0.43	-0.91	-0.87
Clothing	-0.12	-0.91	-0.45
Apparent Competitiveness (a)			
Textiles	0.98	0.10	0.13
Clothing	1.15	0.10	0.23

Note: (a) see Appendix 1 for definition

Source: Own elaboration from SECPLAN (1991), Annex 6, 7, 8.

An estimate for 1986-88 indicates that at an aggregative level Honduras has a Revealed Comparative Disadvantage in both Textiles and Clothing (see Table 11 below). This is confirmed by Table 8 which

uses two alternative measures of international competitiveness for the textile and clothing industry. The Table also shows how the competitive position of the Honduran textile and clothing industry deteriorated during the 1980s, particularly in the first half of the decade.

Despite this gloomy overall picture, at a more disaggregated level there are indications that Honduras enjoys a competitive advantage in certain textile products. At the three digit SITC level, it is particularly strong in underwear, both knitted and non-knit (846 and 844).

TABLE 9: REVEALED COMPARATIVE ADVANTAGE OF HONDURAN TEXTILE EXPORTS TO THE USA, 1990

Product	RCA
MMF brassieres	12.9
MMF suits (women & girls)	8.7
Cotton underwear	7.0
Cotton twills and sateens	4.7
Cotton knit shirts (men & boys)	4.4
Cotton non-knit shirts (men & boys)	4.0
Cotton trousers (men & boys)	4.0
MMF underwear	3.7
Cotton dressing gowns	2.1

Source: Appendix 2.

Table 9 identifies those products in which Honduras appears to have a comparative advantage as indicated by exports to the U.S.A. These confirm that Honduras is specialized in production of certain fairly simple garments such as brassieres and underwear and men's cotton shirts and trousers. These tend to be low value added products which can benefit from relatively cheap local labour. The only non-garment product in which Honduras has a significant revealed comparative advantage is cotton twills and sateens.

6. NICARAGUA

6.1 Significance of the Textile and Clothing Industry

In the mid-1980s the textile industry in Nicaragua accounted for over 6 per cent of value added and 12 per cent of employment in the formal manufacturing sector (UNIDO, 1987, Tables I.5 and I.7). If the clothing industry were also included then together they would account for close on 10 per cent of value added and 20 per cent of employment.

Whereas elsewhere in Central America the industry declined in the first half of the 1980s and then recovered somewhat in the latter half of the decade, in Nicaragua the industry showed the opposite pattern, with output reaching a peak in the mid-eighties and then falling sharply. This reflects the specific features of Nicaragua's politico-economic development in the seventies and eighties with a sharp fall in production after 1976 as a result of the political turmoil leading up to the 1979 Revolution, and a subsequent recovery in the early eighties accentuated by the government's emphasis on basic needs (Jenkins, 1988).

As the country's economic difficulties deepened in the late 1980s however, textile production declined to the levels of 1970 by the early 1990s. The new government which came to power in 1990 has closed a number of the large state firms which accounted for 80 per cent of the industry's production under the Sandinistas, and is currently seeking to privatize several of them.

6.2 The Production Chain in the Nicaraguan Textile and Clothing Industry

6.2.1 Raw materials

Nicaragua is the second largest producer of cotton in Central America after Guatemala and traditionally exported more than 95 per cent of its output (UNIDO, 1987, Table III.5). In recent years cotton production has declined sharply as a result of falling international prices and declining yields. The area planted to cotton in 1992-3 is expected to be only 15,000 manzanas compared to 250,000 manzanas in the late 1970s.

Cotton production in Nicaragua is heavily dependent on applications of pesticides and inputs have a high import content⁷, so that when international prices fall, profitability declines sharply. In 1991 and 1992 domestic prices have been kept above international prices which has had a negative impact on the major integrated textile firm, which fears further problems in obtaining good quality cotton at competitive prices when output declines further next year, since the best quality cotton will be exported.

⁷ It has been estimated that imports account for 60 per cent of the cost of agrochemicals and 66 per cent of the cost of machinery in cotton production (Evans, 1987, Appendix 9).

Nicaragua is entirely dependent on imports of synthetic fibers, particularly polyester which is imported from France and the former Soviet Union.

6.2.2 Spinning

There are currently two firms with spinning operations in Nicaragua, one fully integrated and the other with spinning and weaving which produces cloth for covering tobacco and baling cotton. A third firm, the country's largest spinning mill, which accounts for about two-thirds of all spindles, is at present closed and the government is seeking to privatize it.

At first sight the spinning sector seems relatively modern with 60 per cent of spindles being less than ten years old. However this is entirely Soviet equipment which was installed during the 1980s and which was already obsolete compared to current technology when it was installed. Moreover the remaining 40 per cent of spindles are more than 20 years old and open-end rotors have yet to be introduced in Nicaragua.

The quality of yarn produced, particularly by the firm that is at present closed, was very deficient, and quality control totally inadequate (Bery, 1990a). In the integrated plant that is still operating however, spinning was the least problematic area of production, despite the relatively old equipment.

Spinning is not very highly protected. The total tax paid on imports of synthetic and cotton yarn is 18 per cent (made up of a 7 per cent import duty, 3 per cent stamp duty and an 8 per cent Selective Consumption Tax on imports). This is the same level of tax as is payable on imports of raw materials. Moreover the Selective Consumption Tax is due to be removed at the end of 1993.

6.2.3 Weaving

In addition to the three spinners mentioned above which all have weaving facilities, there are two producers of speciality products in this sector of the industry. With the closure of one of the integrated producers however, there is only one firm which produces woven fabric for the clothing industry.

The technological level in weaving is even more backward than in spinning. In the two integrated producers over three-quarters of the looms are more than twenty years old, while 40 per cent are more than 30 years old. There are a handful of shuttleless looms introduced in 1988 but because of the conditions in which they operated, productivity and quality of output were no better than that of the conventional looms.

Since one firm was not producing and the other operating at only 50 per cent of capacity in weaving because of a lack of spare parts, there is substantial excess capacity in the industry. Quality is also deficient, reflecting partly the low quality of yarn and raw materials and partly the conditions in weaving itself.

Woven fabric is a highly protected activity, with total taxes on imported cloth amounting to 38 per cent compared to only 18 per cent for yarn and raw materials. Since the value added in weaving is roughly 27 per cent of the value of production, this implies an Effective Rate of Protection in weaving of 93 per cent, far greater than in either spinning or garment manufacture.

6.2.4 Knitting

Of the three state firms which comprised the knitting industry, one has been closed down because it was totally obsolete and one (which is awaiting privatization) because of managerial problems. Only one firm is still working and as a result employment has declined from over 1000 in the 1980s to a few hundred.

Compared to weaving, equipment is relatively new and technology modern. In the firm awaiting privatization, most of the machinery dates from the 1980s and includes relatively up-to-date Czech technology. However the industry suffers from a number of problems including the poor quality of yarn and the inconsistent quality of the finished fabric.

Capacity utilization in this sector is low and quality control has been neglected. The former is not due to a lack of demand because production is insufficient to supply the domestic market.

The state spinning mill supplies the surviving knitting mill with 65 per cent cotton/35 per cent polyester yarn, although the market requires 100 per cent cotton yarn, because it is unable to produce 100 per cent cotton yarn of sufficiently high quality for knitting, so there is a definite need for a supply of imported cotton yarn.

6.2.5 Finishing

This is a highly problematic area both for woven and knitted fabrics. Except in the case of the knitting mill which is closed at the moment, finishing equipment is over 20 years old. The facilities are not adequate for producing a well finished product. In knitting for instance there is a problem of shrinkage of the fabric.

Before one of the integrated mills was closed, it was proposed that finishing should be concentrated in the other firm, bringing together the best equipment from both enterprises. It is now estimated that modernization of finishing at the existing plant could cost \$1.5 million which may well be infeasible. Costs are high in finishing because expensive imported chemicals and dyes are used and capacity utilization is low.

6.2.6 Clothing

Unlike the textile sector which was entirely in state hands, public enterprises accounted for only 60 per cent of production in garments. The remaining 40 per cent came from more than a hundred medium and small firms. Since 1990 the state sector has contracted with the closure

of one large firm and the return of another to the previous owner. The major remaining state firm, based on the pre-revolutionary Free Zone is also experiencing problems.

Under the FSLN the small scale clothing industry was organized into cooperatives which were supplied with inputs by the state. With the change of government, these cooperatives have tended to decline in significance, but there continues to be an interest in some form of associations amongst producers.

Although technological backwardness is not as marked in clothing, the industry suffers from problems of cost and quality. These derive in part from the poor quality of locally produced fabrics or the high cost of imported fabric. During the 1980s when domestic demand was buoyant quality control was neglected. Now that there is a buyers' market, the poor quality of domestic production is meeting consumer resistance.

Because of the U.S. government's stance towards the FSLN, Nicaragua did not have the option of developing garment exports to the United States during the late 1980s, which played such an important role in the development of the clothing industry in other Central American countries. Even with the change in government in 1990, this does not seem a viable option in the immediate future, because of the general economic difficulties of the country and the inadequate infrastructure for exports, reflected for example in frequent power cuts.

The clothing industry is clearly not internationally competitive at present because of high costs and the fact that it is not attuned to fashion changes. It also faces competition from imports on the domestic market. Since clothing receives the same nominal level of protection as fabrics, the ERP is considerably lower for garment making than for weaving (38 per cent compared to 93 per cent).

6.3 Competitiveness of the Nicaraguan Textile Industry

The overwhelming impression from the above description of the Nicaraguan textile-clothing chain is of an industry that is not competitive in any process, except in the production of cotton and even here it seems to be declining rapidly. Moreover local cotton production does not provide a basis for competitiveness downstream since cotton is sold locally at a higher price than internationally, and there is no local production of 100 per cent cotton yarn.

The entire industry is in need of reconversion in order to improve quality and reduce costs before it can play any role internationally or within the Central American region. Although some of the problems are internal to the textile industry, others are external to it and resolving them can only occur as part of a broader process of rehabilitation of the Nicaraguan economy.

Available indicators show that despite being a producer of cotton, Nicaragua is a substantial net importer of both textiles and

clothing. If anything, aggregate data indicates that international competitiveness as measured by the net export ratio, which was already low in 1979, deteriorated during the decade (see Table 10).

TABLE 10: NET EXPORT RATIOS FOR NICARAGUA, 1979, 1985, 1988

Year	Textiles	Clothing	Total
1979	-0.34	-0.89	-0.39
1985	-0.84	-0.52	-0.78
1988	n.a. (*)	n.a.	-0.91

(*) n.a. - not available

Source: Own elaboration from INE and SIECA data

Since Nicaragua does not export to the United States under the Multi-Fibre Arrangement it is not possible to use U.S. import data to try to indicate those products in which Nicaragua may be internationally competitive at a more disaggregated level as has been done for the other Central American countries. However since Nicaragua is so clearly uncompetitive overall it is unlikely that this hides specific competitive strengths in particular products.

7. THE POTENTIAL FOR COMPLEMENTARITY AND SPECIALIZATION IN THE CENTRAL AMERICAN TEXTILE-CLOTHING INDUSTRY

7.1 Indicators of Potential

In the preceding sections of this report various indicators have been used to show the competitiveness of different parts of the production chain and different products within the textile and clothing industry for each of the Central American countries. These indicators can also be used, when they are suitably normalized, to compare the competitiveness of particular processes or products between different countries. This can cast further light on the potential for complementarity and specialization within the Central American industry.

TABLE 11: REVEALED COMPARATIVE ADVANTAGE INDEX IN TEXTILES AND CLOTHING FOR CENTRAL AMERICAN COUNTRIES, 1986-8

	Textiles (65)	Clothing(84)
Costa Rica	-1.45	0.55
El Salvador	-0.16	-0.07
Guatemala	-0.24	0.35
Honduras	-1.71	-0.15
Nicaragua	-2.27	-0.53

Note: RCA measured by the Normalized Net Export Ratio

Source: Bonturi and Lord (1991), Table 27

Table 11 indicates that in textiles the most competitive country in the sub-region (or strictly speaking the country with the least comparative disadvantage) is El Salvador, followed by Guatemala. In the case of clothing, Costa Rica shows the strongest revealed comparative advantage, followed again by Guatemala. In both sectors of the industry Nicaragua is the least competitive country, followed by Honduras. At this highly aggregative level therefore there is at least some "prima facie" evidence of potential complementarity in the region, with Costa Rica specializing in clothing and El Salvador in textiles.

This however is too aggregative a basis on which to identify anything other than the broadest parameters for sub-regional specialization, the definition of which requires a more disaggregated approach. As a first step in this direction, Table 12 indicates the RCA in selected three digit SITC categories for four of the five Central American countries¹.

¹ Nicaragua was excluded because of the low level of exports of textiles and clothing in this period.

TABLE 12: REVEALED COMPARATIVE ADVANTAGE INDEX IN SELECTED PRODUCTS FOR CENTRAL AMERICAN COUNTRIES, 1987-8

	Costa Rica	El Salvador	Guatemala	Honduras
Yarn (651)		7.5		
Textile articles n.e.s (658)		15.0		
Men's outwear not knit (842)	28.7		9.1	
Women's outwear not knit (843)	20.7	16.3	23.6	15.0
Undergarments not knit (844)	25.3			85.0
Outwear knit non-elastic (845)	3.3			
Undergarments knit (846)	47.3	11.3		75.0

Note: RCA measured by the Balassa method

Source: Author's elaboration from data in UNCTAD, *Handbook of International Trade and Development Statistics, 1990*

This Table clearly indicates specific broad areas of strength for each of the four Central American countries covered. El Salvador has a comparative advantage in yarns and in non-garment textile products vis-a-vis the other countries of the sub-region. The other three countries each have a specific strength in particular areas within the garment industry with Guatemala leading in women's clothes, Costa Rica in men's clothing and knitwear and Honduras in underwear. This confirms the pattern indicated in Table 11, with El Salvador having a leading position in textiles and Costa Rica and Guatemala being strong in clothing, but it also indicates the comparative advantage of Honduras in certain apparel lines which was not evident from more aggregate data.

A further disaggregation is possible using data for U.S. imports of textile products. Again the omission of Nicaragua is a problem, but one which is somewhat mitigated by the evidence that it has a comparative disadvantage in most textile products. From Appendix 2 it is possible to identify the leading Central American country in terms of Revealed Comparative Advantage for each product⁹.

⁹ For this purpose those product items in which no Central American country had an RCA greater than one were ignored.

Costa Rica has a leading position in ten product categories, all of them garments. When these are grouped together it is seen that it is particularly strong in wool clothing, in suit-type coats for men and boys, and in skirts.

El Salvador also has the highest RCA in ten products, three of which are textile products. Again it emerges as being particularly competitive in cotton yarns (both carded and combed) and in cotton towels. It is also the leader in a number of apparel categories, without having any very clear specialization¹⁰.

Guatemala ranks first in twelve product lines, all except one of which are apparel. The exception is knit fabric. The main garments in which Guatemala is the leader within the sub-region are women and girl's coats, suits, trousers and skirts, reinforcing the earlier conclusion that Guatemala has a revealed comparative advantage in women's outerwear.

Finally Honduras has the highest RCA amongst the four countries in seven products, of which two are textiles (cotton sheeting and cotton twills) and the remainder garments. Within garments Honduras is strong in cotton shirts and trousers for men and boys, cotton underwear and brassieres. This again confirms the earlier observation that Honduras has a revealed comparative advantage in underwear.

Summarizing the regional evidence therefore, it does seem that despite similarities between the five countries, there is considerable basis for complementarity in the textile-clothing industry. As far as different processes within the production chain are concerned, El Salvador is strong in spinning, Honduras in some woven cotton fabrics and Guatemala in knit fabrics. In the garment industry there is evidence of some specialization potential by different types of products with Costa Rica relatively strong in wool products and more sophisticated men's wear, Guatemala in women's outerwear (both cotton and synthetic fibers) and Honduras in underwear and less sophisticated cotton men's wear (shirts and trousers).

Given the economic difficulties of Nicaragua in the late 1980s and early 1990s, it is hardly surprising that it does not feature on the basis of these indicators which reflect a country's export performance. This does not mean that Nicaragua cannot develop a comparative advantage within the textile-clothing industry in the future when the overall economic situation recovers. However what it does mean is that past performance does not provide a useful indicator of those areas in which Nicaragua may be competitive in the future.

¹⁰ It is the leader in both other cotton apparel and other man-made fibre apparel which makes it difficult to specify a particular area of specialization.

7.2 The Extent of Intra-industry Trade in the Central American Textile-Clothing Industry

Having seen that there is some potential for complementarity and specialization with the Central American textile-clothing industry, it is now necessary to consider the extent to which the industry already takes advantage of this potential. One indicator which can cast some light on this is the degree of intra-industry trade in intra-regional trade in textiles and clothing.

TABLE 13: INTRA-INDUSTRY TRADE RATIOS IN INTRA-REGIONAL TRADE IN TEXTILE AND CLOTHING PRODUCTS IN CENTRAL AMERICA, 1979 AND 1988

	1979	1988
Intermediate products	75.0	55.7
Consumer goods	69.2	68.4
All textiles	73.2	63.0

Note: See Appendix 1 for an explanation of the calculation of the Intra-industry Trade Ratio

Source: Author's elaboration of CEPAL and SIECA data

Table 13 indicates a relatively high level of intra-industry trade (50 per cent of total trade) for textiles in both 1979 and 1988. The intra-industry trade ratio is also over 50 per cent when the industry is disaggregated into intermediate products (mainly yarn and fabrics) and consumer goods (mainly clothing). However in 1988 the level of intra-industry trade is significantly lower in intermediate products than in consumer goods. It is also worth noting that the share of intra-industry trade has declined significantly between 1979 and 1988 (by over ten percentage points) and that this was entirely due to a fall of almost 20 per cent in intermediate products.

TABLE 14: INTRA-INDUSTRY TRADE RATIOS IN INTER-REGIONAL TRADE IN TEXTILES BY COUNTRY, 1979 AND 1988

	1979	1988
Costa Rica	78.0	70.3
El Salvador	61.2	44.9
Guatemala	89.1	69.2
Honduras	92.1	96.2
Nicaragua	32.3	82.4

Source: See Table 13

When the individual Central American countries are considered, it can be seen that in each case apart from Nicaragua in 1979 and El Salvador in 1988, over half the regional trade in textiles is intra-industry trade. In 1988, Honduras has the highest ratio of intra-industry trade, followed by Nicaragua. However it should be noted that these are also the two countries with least trade in textiles with the rest of the region. Thus the high IIT ratios for these two countries can not be interpreted as reflecting an advanced degree of regional specialization within the textile-clothing industry. On the other hand both Costa Rica and Guatemala, with substantial levels of intra-regional trade have high (although declining) intra-industry trade ratios.

As has already been mentioned in earlier sections intra-CACM exports of textiles were negatively affected by the economic and political difficulties of the 1980s. Intra-regional exports by the textile-clothing industry fell from over 170 million Central American pesos in 1979 to less than 50 million in 1988. Moreover as Table 13 indicates, intra-industry trade in textiles has fallen even more rapidly than intra-regional trade as a whole. Thus it is possible to say that despite the apparently high share of intra-industry trade in the region, this is quite marginal to the activities of most firms, and the industry is not taking advantage of the potential for specialization and complementarity identified in the previous section.

7.3 Costs and Benefits

There are considerable opportunities for specialization within the textile-clothing industry in Central America, which are not currently being exploited. What then are the major advantages and costs of increased complementarity within the region?

This report has emphasized the gains from concentrating output in those countries and firms which are most competitive in each process or product. Such intra-regional specialization will lead to an overall reduction in costs which is particularly crucial in the light of the progressive liberalization of the regional market. However there may also be further dynamic benefits from such a move. The larger regional market may permit firms to produce a narrower range of products than at present, and thus make it more feasible to undertake the quantitative leap required in order to meet the production volumes required in international markets. Thus although economies of scale may not be such a constraint as in some other industries, economies can be achieved through specialization.

Further opportunities may arise for complementarity where there is excess capacity. This is a particularly acute problem in finishing where investment is relatively lumpy. To give a concrete example by way of illustration, a Nicaraguan textile firm has a finishing section in need of modernization, but which requires a large investment. Its spinning and weaving sections also require investment on a smaller scale. In these circumstances, if resources are limited, it could make sense to concentrate investment on spinning and weaving, taking advantage of excess finishing capacity in a firm in a neighbouring country such as Honduras.

Even where there are no such technological complementarities or possibilities of specialization, there may be further benefits from increased competition within the industry. In some countries, particularly in textiles, rather than clothing where there is much more competition from the informal sector, production is dominated by a small number of firms. These have opted for a quiet life without having to worry about improving their management, work organization or production processes for a number of years. On the other hand there are a number of examples of firms, especially in Guatemala, El Salvador and Costa Rica, which have modernized and become internationally competitive. These firms could in a regional context provide both a demonstration effect and also competitive pressure for the more laggard firms in the industry.

While there are substantial potential benefits from a process of regional restructuring in the industry, there may also be costs. Any such process will have winners and losers. This becomes a particularly acute problem when these are distributed unequally between different countries. In the case of the textile-clothing industry, Nicaragua is in the weakest position and stands to lose because it has not been possible to identify any area of comparative advantage within the industry. Thus it is likely to bear the brunt of increased unemployment and any elimination of capacity which occurs, despite the fact that, as was noted above, a number of firms have already closed down. Honduras could also lose out, particularly in the textile sector where firms have in the past faced very little competition. However the costs of promoting regional reconversion and complementarity are likely to be less in the long term than the costs of doing nothing, and consequently being totally unprepared to face international competition when the process of liberalization is completed.

8. OBSTACLES TO INCREASED SPECIALIZATION AND COMPLEMENTARITY IN THE CENTRAL AMERICAN TEXTILE INDUSTRY

The fact that despite substantial opportunities for specialization and complementarity in the textile-clothing industry within the sub-region, so little advantage has been taken of these opportunities, leads to the question of what obstacles prevent this from being realized?

A first problem is that of business attitudes in the industry. Interviews carried out for this project revealed that entrepreneurs had little interest in cooperation at a sub-regional level, preferring to work with other local firms which they knew or with international firms in whose quality and standards they had confidence. The same was true in terms of the firms' view of their potential market. In general terms, the more traditional firms saw themselves as producing primarily for the domestic market, while the more modernized enterprises looked to the international, particularly the U.S., market.

This reflected a wider problem of lack of awareness of international market opportunities on the part of business in this industry. Many of the firms are family-managed enterprises with management still in the hands of the original founders. These did well in the past producing for the local market without having to be internationally competitive. Despite the new situation brought about by changes in the international textile and clothing industry, and the steps taken to open up the Central American economies, they are still unaware of the need to modernize their activities and to change their horizons. As a result only a small minority of firms, often those where management has passed to the second generation, have already implemented modernization programmes.

The majority of firms, which continue to see themselves in purely national terms, have in the face of the restricted size of the local market, adopted strategies of diversification, increasing the range and types of products which they offer. This is antithetical to any process of regional specialization. The modernizing firms, particularly in clothing, have often become highly specialized but this has been conceived within an international rather than a Central American division of labour.

Although this subjective element is an important obstacle to furthering cooperation within the sub-region in the textile-clothing industry, the reluctance of businessmen to think on a Central American scale does also reflect a number of objective obstacles.

First, frequent complaints are heard concerning the problems which face goods entering from other Central American countries. Bureaucratic procedures and slowness in handling goods at the border give rise to unnecessary delays in obtaining supplies from neighbouring countries. It is thus easier to buy from local suppliers so that these problems can be avoided.

A second problem is the lack of information on opportunities for cooperation with firms in other Central American countries. Within

Each Central American country, textile and clothing firms are relatively well-connected with each other through their trade associations, family ties and personal friendships, creating both formal and informal information channels. This does not occur in the same way at a sub-regional level. In the late 1960s there did exist an Asociación Centroamericana de la Industria Textil which attempted to promote integration in the industry but this ceased to function. The Federación de Entidades Privadas de Centroamérica y Panamá (FEDEPRICAP) brings together the business confederations of the area, but does not operate at the industry level¹¹. Although there are personal links between firms in different Central American countries, these tend to be much more sporadic and isolated than those which exist within each country.

A related problem is that of the perceived quality and consistency of products from other Central American countries. This is a problem even between firms within individual Central American countries where firms are reluctant to join together to supply large export orders because they fear that their potential partners would not be able to guarantee the quality of their contribution. In interviews a number of firms indicated that imports from outside the sub-region were of better quality than similar products produced in Central America.

Finally there are obstacles to increased regional complementarity which arise from the overall system of incentives and the way in which it affects the textile-clothing industry. First there has not been total free trade between the Central American countries. Although sub-regional imports are not subject to the import duties paid on extra-regional imports, a number of countries do tax such imports. Honduras charges a surcharge of 5 per cent on raw materials and yarn and 15 per cent on fabrics and clothing imported from other Central American countries. In Nicaragua imported textiles and clothing pay a Selective Consumption Tax which varies from 8 per cent to 20 per cent depending on the product, from which domestic producers are exempt making it in effect a disguised import duty. In El Salvador all imports pay a 5 per cent Stamp Duty while in Costa Rica, where surcharges of 10 per cent and 2 per cent were recently abolished, there is still a 1 per cent charge on all imports¹². All these taxes are a direct disincentive to greater sub-regional cooperation since they make sub-regional production less competitive compared to domestic goods.

A second form of disincentive arises from the export promotion regimes which have been implemented in each of the Central American countries in recent years. In general these exempt exporters from

¹¹ It is worth noting here that FEDEPRICAP has been involved in setting up the Bolsa de Subcontratación Industrial which provides a formal channel for the exchange of information between firms in Central America. This is discussed in more detail in the next section.

¹² Elimination of this charge for imports from other Central American countries is currently under discussion.

paying all duties and taxes on imported inputs. However in the case of imports from other Central American countries, these are not exempted from value added or sales taxes. Thus it is more attractive for exporters to purchase inputs from outside the sub-region and greater intra-regional complementarity is discouraged.

The other side of this is that the export incentives are only available to firms which export to countries outside Central America. This makes it more attractive for exporters to look to extra-regional markets for exports. It may also make it difficult for them to compete in the sub-regional market because they face competition from firms from outside the sub-region which receive considerable incentives from their governments in order to export to Central America. Thus for instance one Costa Rican manufacturer reported that Brazilian yarn prices were often 50 per cent less than Central American prices because of government incentives. Thus in this case the system of export incentives in Brazil and El Salvador (where exports to Costa Rica are not eligible for incentives) make it more attractive for the Costa Rican firm to import from outside the sub-region.

9. TOWARDS A SUB-REGIONAL PROGRAMME OF MODERNIZATION FOR THE CENTRAL AMERICAN TEXTILE-CLOTHING INDUSTRY

The aim of this report is not to develop a programme of industrial modernization for the textile-clothing industry. This should and is being done in the individual Central American countries. It is rather to look at ways in which the sum of these national programmes can be greater than the parts by focussing on the sub-regional dimension and identifying ways of encouraging greater complementarity between national efforts.

The previous section identified a number of obstacles to greater sub-regional complementarity and specialization in the textile-clothing industry. This section proposes measures to eliminate or reduce some of these obstacles.

9.1 Increasing Awareness of the Need for Cooperation

An underlying weakness of the textile-clothing industry in Central America is the reluctance of firms to cooperate together at the national let alone the sub-regional level. There is deep suspicion of other firms and unwillingness to share experiences or information. This is a major obstacle both to modernization and complementarity. Recent international trends in the industry, with the growing emphasis on flexible specialization, have put a premium on intra-firm cooperation if firms are to become internationally competitive. However there is little awareness of this need within Central America.

It is therefore proposed that a programme of seminars should be organized to which interested firms are invited, to inform them of recent international trends in this field, as a first step to raise the awareness of the need for such cooperation. Some of these seminars should also be given a strong sub-regional dimension, emphasizing the potential for intra-regional cooperation.

As the national programmes of modernization develop, the experience of those firms which undergo a successful transformation should be divulged regionally and exchanges of experiences encouraged.

9.2 Information

At the moment there is very little information available on the potential for complementarity and specialization within the countries of the sub-region. The present study has only been able to give very broad indications of potential areas of opportunity, but has been limited because of the time available. Of the Central American countries, only Costa Rica has undertaken detailed national studies of the strengths and weaknesses of the textile-clothing industry. During the course of fieldwork in Central America it was indicated that IADB is undertaking a project on productive chains in the region (TC-90-01-10-4-RE) which would include the textile-clothing industry. This could be an important additional source of information on opportunities for complementarity.

In terms of the availability of information for use by firms, the Bolsa de Subcontratación Industrial is an important initiative which should be supported on an experimental basis. The Bolsa which began operations with engineering firms has recently been extended to cover textiles and clothing. At present it only covers Costa Rica and El Salvador. There are 95 firms registered in Costa Rica, of which 15 per cent are in textiles, while there are 65 firms in El Salvador of which 37 per cent are in textiles. In the second stage of the project it will be extended to cover the other Central American countries and additional industries.

For each associate the Bolsa data base includes general information on the firm, an inventory of machinery, its production processes and products. Thus the Bolsa is able to provide information to interested parties on the potential suppliers of particular products or manufacturing services. Because it has only been extended to textiles fairly recently, there have been no specific examples as yet of new links being established between firms in the industry. It will also be necessary to extend the coverage of textile firms considerably, if it is to provide a comprehensive basis on which increased intra-firm cooperation can develop. Although some firms interviewed were skeptical about the relevance of such an organization for the textile industry, others who knew about the Bolsa were enthusiastic. However a pre-condition for the Bolsa to succeed is a higher level of awareness on the part of business of the benefits to be derived from inter-firm cooperation.

A third way in which greater awareness of the potential for sub-regional cooperation could be achieved is through exchange of information between the relevant private sector trade associations in the Central American countries. This will also require institutional development, particularly in Honduras and Nicaragua.

9.3 Institutional development

Although Guatemala, El Salvador and Costa Rica have well established trade associations covering the textile and clothing industry, this is not the case in Honduras and Nicaragua. In the former, there is no reason why one could not develop along the lines of the other Central American countries. In the case of Nicaragua there is no need for such an association as long as the bulk of the industry is in the hands of the state which can channel information directly. If some of the major firms are privatized however, this will create both a need and an opportunity for creating a textile industry trade association.

A further step beyond greater exchange of information between national trade associations discussed above would be the re-constitution of a Central American Textile Association. This could lead to much greater links between firms in different Central American countries and provide a further impetus to sub-regional complementarity. Again however a pre-requisite for this would be increased consciousness among firms of the benefits of cooperation.

Another area in which support for institutional development could be appropriate is in the development of regional standards and

quality guarantees for textile products. There could be a role for ICAITI here, but unfortunately it was not possible to visit the Institute during the fieldwork in Central America, in order to assess its capabilities in this area.

9.4 Import Taxes and Border Formalities

It was noted above that certain tariff barriers still exist on intra-regional textile and clothing imports in all the Central American countries apart from Guatemala. These vary from 1 per cent in Costa Rica to as much as 20 per cent on some products in Nicaragua. Although it is difficult to estimate how much intra-regional trade would increase as a result of their removal, steps should be taken to eliminate them as soon as possible.

Border formalities are often just as much of an obstacle to increased sub-regional cooperation as taxes and charges. All the Central American countries permit imports from outside the sub-region for exporting firms, with a minimum of bureaucratic procedures. It should not be impossible therefore to find way of simplifying these in the case of intra-Central American trade and substantially reducing delays in the entry of goods.

A further reform which might encourage greater sub-regional cooperation is the establishment of appropriate anti-dumping legislation in conjunction with the new Common External Tariff. Many firms in the region complain that they are unable to compete with imports which are sold at below cost. These are undervalued and the import duty correspondingly reduced which makes them highly competitive not only with domestic production but also with imports from other Central American countries.

9.5 Export Incentives

As was seen in the previous section, the present system of export incentives in the Central American countries appears to discriminate against intra-regional trade. Products traded within the sub-region have a somewhat ambiguous position being treated in some respects as domestic goods and in others as foreign.

The system of export incentives may in fact discriminate against local and sub-regional suppliers, in so far as there is no adequate system of incentives for indirect exporters. This is a serious problem which requires a detailed analysis of the existing export incentive system in each country and the alternative systems which might be introduced to eliminate such discrimination.

APPENDIX 1. TECHNICAL NOTES

a) Indicators of Competitiveness

A number of different indicators of competitiveness have been used in this study. Some are based on export performance, some also include imports and some use production as well as trade data. This Apperdx indicates the precise definition of each of the indices referred to in the text.

The relevant variables are defined as follows:

- X - value of exports
- M - value of imports
- P - value of gross output
- T - average value of trade i.e $(X + M)/2$

The following subscripts are used

- j - the sector whose competitiveness is being measured
- i - the country whose competitiveness is being measured
- m - all manufactures
- w - world

(i) Apparent Competitiveness (AC)

$$AC = \frac{(X_j/M_j)/(X_m/M_m)}{[(X_j+M_j)/P_j]/[(X_m+M_m)/P_m]}$$

AC > 1 indicates apparent competitiveness in an activity.

(ii) Revealed Comparative Advantage (Balassa measure)

$$RCA = (X_j/X_{mj}) / (X_m/X_{mw})$$

RCA > 1 indicates a revealed comparative advantage in an activity.

(iii) Net Export Ratio (NXR)

$$NXR = (X_j - M_j) / (X_j + M_j)$$

A positive Net Export Ratio reveals competitiveness in an activity.

(iv) Normalized Net Export Ratio (NNXR)

$$NNXR = (X_j - M_j) / (T_m * T_{mj} / T_{mw})$$

A positive Normalized Net Export Ratio reveals competitiveness in an activity.

b) Intra-Industry Trade (IIT) Index

In measuring intra-industry trade in Central America the Grubel and Lloyd index was used.

$$IIT = [\{ (X_j + M_j) - |X_j - M_j| \} / (X_j + M_j)] * 100$$

This measures intra-industry trade as a percentage of country i's total trade in product j.

APPENDIX 2. DATA FOR CALCULATION OF REVEALED COMPARATIVE ADVANTAGE OF CENTRAL AMERICAN EXPORTS TO THE USA

TABLE A.1: U.S. IMPORTS OF TEXTILE PRODUCTS FROM FOUR CENTRAL AMERICAN COUNTRIES AND FROM ALL COUNTRIES BY MFA CATEGORY, 1990 (\$'000)

MFA	Imports				
Category	Costa Rica	El Salvador	Guatemala	Honduras	World
222			2293		110253
229	1398				274271
237		1781	1377		150082
239	4309		1867		481410
300		6715	4566		63690
301		1341			39373
313			1100	1752	227452
317				2408	120046
331			2801		69375
333	1096				22268
334	3961		2894		284066
335	1279		1227		364477
336	1955	3567	5995		278414
338	22360	2746	10430	16685	887951
339	12189	3457	14445	3469	1135122
340	23261	1756	18626	17784	1039365
341	1503		4333		612639
342	3044		4312		289584
347	67560	2419	22719	22498	1339387
348	33089	6687	35143	3139	1490007
350	1554	3404	2647	1145	132116
352	18992			7782	261686
359	7811	2937	5462		486351
363		5537	1703		185828
369			1991		542997
433	6537				80376
435	7384		4408		238447

442	1722				89904
443	9458				238200
444	1723				56047
633	5392				64634
634	2653				588409
635	5350		6888	2505	771766
636	1761	6060	5507		441943
638	4832		1659	1578	502269
639	3552	1461	1723		1052013
640	4769		2151		538907
641	6499	3920	5706	1009	790822
642	2195		4406	1051	290936
644	2664		5003	2869	78277
645	3212				214207
647	13525		2139	3284	640682
648	4461	1156	7458		794872
649	53362			18066	331580
650	1513				72419
651	1040				192150
652	17030	3466		2885	184248
659	7597	3909	3842	1669	651363
666	2180				154562
842	1379				43613
847	1123				213139
Total all Xs	388324	70274	205653	118261	27925727

Source: U.S. International Trade Commission, *U.S. Imports of Textiles and Apparel under the Multifibre Arrangement: Statistical Report through 1990*, Washington, U.S. Government.

TABLE A.2: REVEALED COMPARATIVE ADVANTAGE OF CENTRAL AMERICAN TEXTILE EXPORTS TO THE USA (BALASSA MEASURE), 1990

MFA	Costa Rica	El Salvador	Guatemala	Honduras
222	0.00	0.00	2.82	0.00
229	0.37	0.00	0.00	0.00
237	0.00	4.72	1.25	0.00
239	0.64	0.00	0.53	0.00
300	0.00	41.90	9.73	0.00
301	0.00	13.53	0.00	0.00
313	0.00	0.00	0.66	1.82
317	0.00	0.00	0.00	4.74
331	0.00	0.00	5.48	0.00
333	3.54	0.00	0.00	0.00
334	1.00	0.00	1.38	0.00
335	0.25	0.00	0.46	0.00
336	0.50	5.09	2.92	0.00
338	1.81	1.23	1.60	4.44
339	0.77	1.21	1.73	0.72
340	1.61	0.67	2.43	4.04
341	0.18	0.00	0.96	0.00
342	0.76	0.00	2.02	0.00
347	3.63	0.72	2.30	3.97
348	1.60	1.78	3.20	0.50
350	0.85	10.24	2.72	2.05
352	5.22	0.00	0.00	7.02
359	1.15	2.40	1.53	0.00
363	0.00	11.84	1.24	0.00
369	0.00	0.00	0.50	0.00
433	5.85	0.00	0.00	0.00
435	2.23	0.00	2.51	0.00
442	1.38	0.00	0.00	0.00
443	2.86	0.00	0.00	0.00
444	2.21	0.00	0.00	0.00

633	6.00	0.00	0.00	0.00
634	0.32	0.00	0.00	0.00
635	0.50	0.00	1.21	0.77
636	0.29	5.45	1.69	0.00
638	0.69	0.00	0.45	0.74
639	0.24	0.55	0.22	0.00
640	0.64	0.00	0.54	0.00
641	0.59	1.97	0.98	0.30
642	0.54	0.00	2.06	0.85
644	2.45	0.00	8.68	8.65
645	1.08	0.00	0.00	0.00
647	1.52	0.00	0.45	1.21
648	0.40	0.58	1.27	0.00
649	11.57	0.00	0.00	12.87
650	1.50	0.00	0.00	0.00
651	0.39	0.00	0.00	0.00
652	6.65	7.48	0.00	3.70
659	0.84	2.38	0.80	0.61
666	1.01	0.00	0.00	0.00
842	2.27	0.00	0.00	0.00
847	0.38	0.00	0.00	0.00

Source: Own elaboration from Table A.1.

TABLE A.3: MFA PRODUCT CATEGORIES

222	- Cotton or MMF Knit Fabric
229	- Cotton or MMF Special Purpose Fabric
237	- Playsuits, Sunsuits etc.
239	- Cotton or MMF Apparel for Infants
300	- Carded Cotton Yarn
301	- Combed Cotton Yarn
313	- Cotton Sheeting
317	- Cotton Twills and Sateens
331	- Cotton Gloves and Mittens
333	- Cotton Suit-type Coats, MB
347	- Cotton Trousers, MB
348	- Cotton Trousers, WGI
350	- Cotton Dressing Gowns
352	- Cotton Underwear
359	- Other Cotton Apparel
363	- Cotton Pile Towels
369	- Other Cotton Manufactures
433	- Wool Suit-type Coats, MB
435	- Wool Coats, WGI
442	- Wool Skirts
443	- Wool Suits, MB
444	- Wool Suits, WGI
663	- MMF Suit-type Coats, MB
634	- Other MMF Coats, MB
635	- MMF Coats, WGI
636	- MMF Dresses
638	- MMF Knit Shirts, MB
639	- MMF Knit Shirts, WGI
640	- MMF Non-knit shirts, MB
641	- MMF Non-knit Shirts, WGI
642	- MMF Skirts
644	- MMF Suits, WGI
645	- MMF Sweaters, MB
647	- MMF Trousers, MB
648	- MMF Trousers, WGI
649	- MMF Brassieres etc.
650	- MMF Dressing Gowns
651	- MMF Nightwear
652	- MMF Underwear
659	- Other MMF Apparel
666	- Other MMF Furnishings
842	- SLR Skirts
847	- SLR Trousers

APPENDIX 3. REFERENCES

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APPENDIX 4. DP/CAM/91/009: List of Studies Prepared

1. Lineamientos de Cooperación Técnica para un Programa de Modernización Industrial en Centroamérica, ONUDI PPD.---
2. Economic Integration in Central America: An Overview of Implications for Industrial Modernization in the 1990s, UNIDO PPD.---, 240 (SPEC.), 13 April 1993.
3. Estructura de Protección e Incentivos a la Industrialización en Centroamérica, ONUDI PPD.---
4. Políticas para la Reestructuración Industrial en Centroamérica, ONUDI PPD.---
5. Modernización del Sector Industrial en Centroamérica: Hacia la Formulación de un Programa de Acción, ONUDI PPD.---
6. Industrial Modernization in the Central American Textile Industry: The Potential for Regional Cooperation, UNIDO PPD. 239 (SPEC.), 13 April 1993.
7. Competitividad de la Agroindustria de Centroamérica, ONUDI PPD.---
8. Modernización del Sector Metalmecánico Centroamericano: Potencial de Cooperación, Necesidades y Limitaciones, ONUDI PPD.---
9. Modernización Industrial en Centroamérica: El Subsector Cuero y Calzado, ONUDI PPD.---