



CENTER FOR RESEARCH AND POLICY MAKING

OCCASIONAL PAPER N. 9

WORLD TRENDS IN CLOTHING MANUFACTURING

Date: November 31st, 2005
Place: Skopje, Macedonia

The Center for Research and Policy Making (CRPM) is an independent, non-profit research and policy institute, created in recognition of the pressing need for independent, in-depth analysis of the complex issues involved in promoting stability and prosperity in Macedonia and South Eastern Europe. CRPM consists of experts from the country, working as researchers in the organization, as well as external consultants in close contact with the organization. It seeks to offer timely, provocative policy analysis on the most pertinent issues in the region and has no 'hidden agenda', but seeks to promote democratization and economic transformation in the country. CRPM wants to influence policy makers and public opinion to accept certain solutions as to how to resolve the key issues in the country. It has no party, political or any other organizational affiliation.

The Organization aims at filling an important gap in the regional civil society environment, which lacks institutions directed at monitoring and critically viewing the policy-making process and its output from an informed and educated point of view, while at the same time offering a forum for discussion and publishing of works dealing with this subject matter. The standpoint from which it approaches certain issues is principled. The organization considers peace and stability as the first principles that should reign in the Balkan countries, and believes that the major political goal of Macedonia is the integration with the European Union.

CRPM's experienced and multidisciplinary team is committed to provide policy makers with relevant and timely analysis anchored in political and institutional realities. CRPM's research and analysis is directed towards ensuring that international strategy is based on a sound understanding of the complex political, economic and social environment in Macedonia, and the real impact of international programs. The practicality of the organization's recommendations is guaranteed by its close attention to empirical research. CRPM's think-tank's research is undertaken in the field by analysts with experience in participatory research and knowledge of the local languages. (Albanian, Macedonian, Serbian) Focusing on local research, its policy recommendations will be equally directed at international and domestic political actors. Seeking to develop a common vocabulary, CRPM promotes discussion and debate among the policy community. CRPM's efforts depend on the contributions of governments, corporations and private individuals to fund its activities.

Our Partners

[European Stability Initiative](#)

[The German Marshall Fund of the United States of America](#).

[Libertas Institute](#)

[Olof Palme International Center](#)

[Foundation Open Society Institute Macedonia](#)

[Journal of Southeast European Politics](#)

CONTENT

Textile and Apparel Industries in the World Explained in Brief 4

Textile trade in the world 13

Trends in Textile Production: Competitiveness Factors 15

 How to Improve Competitiveness- General Overview 15

 How to Improve Competitiveness- Specific Issues 20

1) Production Costs 20

2) Time Factors as Determinants of International Competitiveness 21

 Shorter Deadlines 21

 Proximity to End- Markets Key for Time Sensitive Clothing Market 22

3) Technology 24

4) Trade Policies: Customs tariffs and rules on origin 25

5) Respect for workers' human rights/ Labor Laws and Ethics Important 27

6) Relationships with suppliers are becoming more professional 28

7) Source Locally/Raw Materials 28

8) Role of Governments 29

9) Full package of services and Skilled Labor 30

10) Financial Means (Capital/Credits) are needed 30

11) The growing importance of the non-clothing use of textiles 31

Textile and Apparel Industries in the World Explained in Brief¹

Levis', Wrangler and Tommy Hilfiger are well known brand manufactures that have no own factories. Their products are made elsewhere but they make huge turnovers and profits. How is this possible? We shall explain you this in the following section. The textiles and apparel sectors can be seen as a supply chain consisting of a number of discrete activities the three basic elements being textile production, apparel "assembly," and final distribution and sales. Increasingly the supply chain from sourcing of raw materials via design and production to distribution and marketing is being organized as an integrated production network where the production is sliced into specialized activities and each activity is located where it can contribute the most to the value of the end product. When the location decision of each activity is being made, costs, quality, reliability of delivery, access to quality inputs and transport and transaction costs are important variables.

The textile and clothing industries have fundamental distinctive characteristics and involve a large and diversified range of activities that use varying mix of labor and capital. For the sake of simplicity, the entire supply chain is presented as four production segments:

A. Raw Materials

1. Preparation of fibers; be that natural or man-made or synthetic fibers.²

¹ The overview is based on the following literature: *A New World Map in Textiles and Apparel Adjusting to Change*, a OECD Policy Brief, October 2004, *WTO Agreement on Textiles and Apparel (ATC): Impact on Garment Manufacturing in Cambodia, Laos and Vietnam*, Mekong Capital, 30 December 2003, "The textile industry: The looming revolution", Nov 11th 2004, Economist, "Losing their shirts", Oct 14th 2004, Economist, *Structural Adjustments in Textiles and Apparel in the Post-ATC Trading Environment*, OECD Trade Policy Working Paper No.4, *Study on the Implications of the 2005 Trade Liberalization in the Textile and Apparel Sector Consolidated Report*, IFM and partners, February 2004, *Made in ...Eastern Europe*, Clean Clothes Campaign, 2004, *Rags to Riches to Rags*, December 2004, Christian Aid, *Disaster Looms With the Ending of the Quota System*, Report by Samuel Grumiau for the International Confederation of Free Trade Unions, December 2004, *Implications for South Asian Countries of Abolishing the Multifibre Arrangement*, by Sanjay Kathuria, Will Martin, and Anjali Bhardwaj, World Bank, November 2001, *The Global Textile and Apparel Industry post the Agreement on Textiles and Apparel* by Hildegunn Kyvik Nordås, WTO, 2004, Nebahat Tokatli and Omur Kizilgun, *Upgrading in the Global Clothing Industry: Mavi Jeans and the Transformation of a Turkish Firm From Full-Package to Brand-Name Manufacturing and Retailing in Economic Geography*, July 2004,

B. Textiles

2. The treatment of raw materials, i.e. the preparation or production of various textiles fibers, and/or the manufacture of yarns (through spinning).³
3. the production of knitted and woven fabrics/cloth (i.e. knitting and weaving);
4. the pre-processing of textiles by dyeing, impregnation, pre-confection
5. the production of:
 - a. carpets and other textile floor covering;
 - b. home textiles (such as bed linen, table linen, toilet linen, kitchen linen, curtains, etc);
 - c. technical or 'industrial' textiles.⁴

C. Apparel

6. the transformation of fabrics into products such as clothes/garments/apparel through knitting, weaving or sewing (the so-called "apparel" industry);

D. Services

² "Natural" fibers include cotton, wool, silk, flax, jute, etc. The preparation of natural fibers involves various agricultural activities that are influenced by factor endowments, i.e. the quality of land and regional climate, and agricultural policies in respective countries. "Man-made" fibers (2) include cellulosic fibers (e.g. viscose), synthetic fibers (i.e. organic fibers based on petrochemicals, such as polyester, nylon/polyamide, acrylic, polypropylene, etc), and fibers from inorganic materials (e.g. glass, metal, carbon or ceramic). The composition of textile products has on average 60% of cotton fibers and 40 % of synthetic fibers.

³ Materials that can be used to create yarn fall into three broad classes: plant, animal, and synthetic. Plant materials: cotton, flax (to produce linen), hemp, raffia, yucca, coconut husk. Animal materials: wool, goat (angora or cashmere goat), rabbit (angora), llama, alpaca, dog, camel, silk. Synthetic materials: nylon, rayon, acetate, Mylar®, minerals like asbestos.

⁴ Technical textiles are often defined as textile materials and products manufactured primarily for their technical and performance properties rather than for their aesthetic or decorative characteristics. They have many applications, including bed sheets; filtration and abrasive materials; furniture and healthcare upholstery; thermal protection and blood-absorbing materials; seatbelts; adhesive tape, and multiple other specialized products and applications. The vehicles and transport industry is the principal industrial user of technical textiles (29% in total EU consumption of such products in 1999), followed by furniture/home furnishing (14%) and construction/civil engineering (11%). See also table 23 in the appendix.

7. gathering of market data, product design and fashion
8. marketing, retailing and selling of apparel and textiles
9. logistics, (storage, transports and distribution of apparel and textiles).

Textile and apparel products can be divided into three processing steps, those which are used as raw material for further processing (e.g. yarn, fabric), those for final usage by industry as a pre-product (e.g. technical textiles), and those which serve as end-product the final consumer (apparel and home textiles). Products of daily use have high consumer demand; others of more occasional use have lower consumer priority. Demand for both types of product depends in general on consumer incomes and the share of expenditure spent on textiles and apparel. Demand for certain products more specifically depends on product, price, quality, image, fashion etc.

The Textile Sector Explained in Brief

The textile industry is usually more capital intensive than the clothing industry and it is highly automated, particularly in developed countries. It consists of spinning, weaving and finishing, and the three functions are often undertaken in integrated plants. Traditionally, and in many markets, it is still the case that lead time in the textile sector is quite long and the capital intensity of the industry results in relatively large minimum orders. The textile industry is therefore less flexible in terms of adjusting to consumer tastes during a season than the clothing and retail sectors. The textile sector is thus in many ways the bottleneck in the supply chain.

Primary capital to invest in new machinery with increased automation that will improve the consistency of the product is crucial for the textile industry. Only those companies that are capable of sustained investment in both plant and innovative products will have a share of the international market. The demand for higher quality standards in consumer markets has created a need to automate much of the manufacturing process in

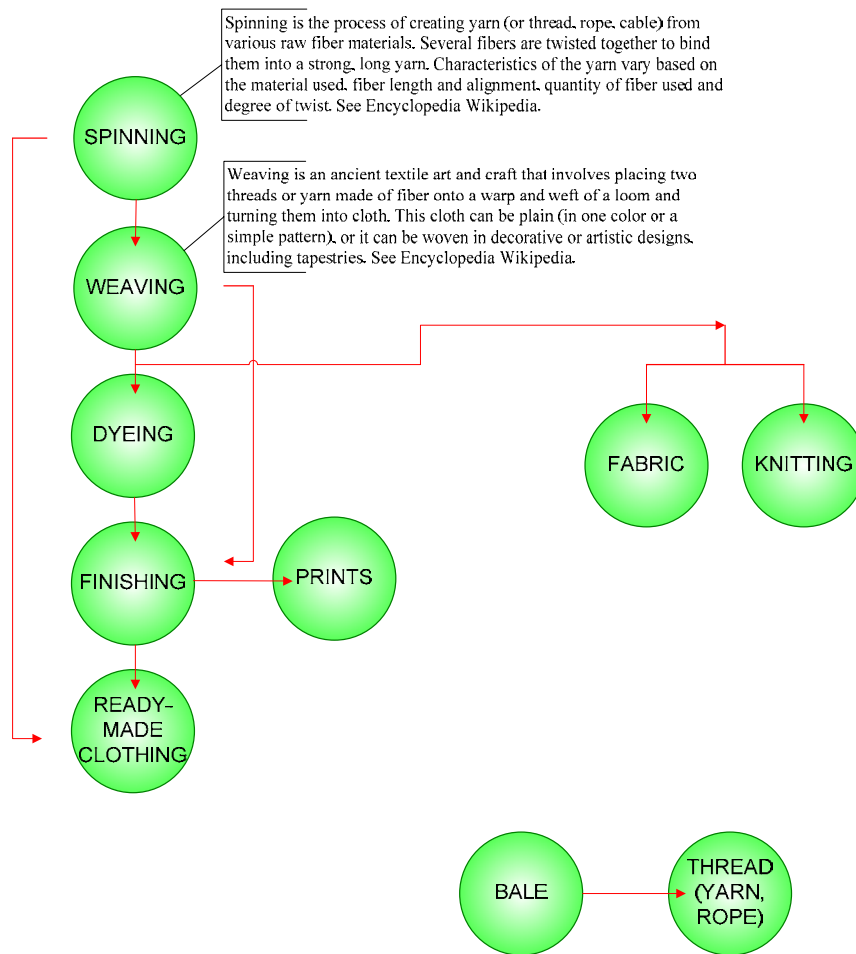
textile production. This use of electronic control equipment, such as photoelectric cells on spinning frames, weaving looms and knitting machines, is now commonplace even in the emerging economies of Southeast Asia, where labor costs are low. No amount of available labor can effectively monitor thread characteristics in high-speed production equipment, nor can it substantially increase output capacity in a machine-intensive industry.

Both spinning⁵ and weaving⁶ requires constant updating of machinery in order to catch up with competition. For example, major Western textile producers have divested themselves of yarn spinning, as these have become unprofitable, due either to the need to update equipment, or due to intensive competition from lower cost primary producer nations, such as China and India. All but a few specialist textile producers in Western Europe are in the process of relocating their mills to reduce costs and many have outsourced production exactly to China. The recent import surge of up-to-date textile and clothing equipment in China attests to this migration and foreshadows where more textile and clothing production and export in the future will be coming from. With modern equipment, Chinese textile suppliers are improving their productivity and are increasingly producing export-quality textiles. The main beneficiaries of this textile modernization are the Chinese clothing suppliers that can procure their textile inputs directly from domestic sources and hence meet shorter turnaround delivery requirements. Access to high quality textiles is considered one of the most important determinants of competitiveness of clothing suppliers. Against this background, the textile industry in developed countries will be facing intensified competition in both their export and domestic markets.

⁵ Spinning is the process of creating yarn (or thread, rope, cable) from various raw fiber materials. Several fibers are twisted together to bind them into a strong, long yarn. Characteristics of the yarn vary based on the material used, fiber length and alignment, quantity of fiber used and degree of twist. See Encyclopedia Wikipedia.

⁶ Weaving is an ancient textile art and craft that involves placing two threads or yarn made of fiber onto a warp and weft of a loom and turning them into cloth. This cloth can be plain (in one color or a simple pattern), or it can be woven in decorative or artistic designs, including tapestries. See Encyclopedia Wikipedia.

Phases in textile /apparel production



Significant productivity gains were achieved during the twentieth century from improved spinning and weaving equipment. The significant productivity gains have historically been driven by the symbiotic relationship between a competitive textile and clothing industry and a creative textile and clothing machinery (TCM) industry. However, this symbiotic relationship is weakening as new materials are developed mainly in the chemical industry and as new processes are developed in the machinery industry. As a result, the technological competitiveness of textile and clothing firms largely depends on their ability to adopt new products and processes developed outside the textile and clothing industries. Therefore, the major focus of innovation activities within these industries lies on technology transfer. With globalized knowledge networks, the technology

transfer is occurring at a rapid pace, and the historical productivity gap that has differentiated developed and developing countries is expected to shrink as modern equipment can be operated efficiently in the most competitive developing countries.

The Apparel Sector Explained; Specifics of Lohnveredelung system/Contract Manufacturing/Outward Processing

Most of the apparel industry, also known as garment industry, is a low-value added, labor-intensive using unskilled labor for a mass production of lower-quality and/or standard products such as t-shirts, uniforms, white underwear etc. Manufacturers are largely found in developing countries, often under so-called outward processing agreements with major importers. They employ mainly female workers -semi-skilled and unskilled - and outsourcing to household production is quite common in the low end of the market. Moreover, it is a sector where relatively modern technology can be adopted very quickly even in poor countries due to the relatively low investment costs. These characteristics, however, have also made it a footloose industry that is able to adjust to changing market conditions quickly.

This segment of the industry is characterized by its low ratio of capital equipment to labor inputs. The primary advances in sewing have been in the methods used to handle parts of garments, although the use of high-speed motors and automatic needle positioning on the machines have added to increased production output. Nevertheless, the assembly stage remains highly labor intensive and involves delicate handling and sewing operations that do not lend themselves to automated progress. The basic production technology is characterized by the progressive bundle system. Work is organized such that each worker is specialized in one or a few operations. The fabric is first cut and then grouped by parts of the garment, tied into bundles (pre-assembly) and then sewed together. The individual sewing tasks are organized in a systematic fashion and specialized sewing machines have

been developed for the individual tasks. A worker receives a bundle of unfinished garments, performs her single task and places the bundle in a buffer. A buffer of about one day's work has been common at each operation. It takes about 40 operations to complete a pair of pants, which implies that there is about 40 days of in-process inventory. For men's suits, however, it takes as much as 100 operations.⁷

Aside from productivity gains attributable to better needles and more secure fabric-holding techniques, the sewing techniques remain basically similar to those that were used a *century ago*. One major innovation was the automatic cutting machine introduced in 1969. This machine has made it possible to cut increasingly thick layers of cloth accurately. Moreover, cutting machines, pattern layouts and other functions are computer-assisted and in many cases designs can be transformed to patterns which are directly fed into cutting machines via electronic networks. These innovations are mainly related to the so-called pre-assembly phase of production, where technological developments have been more prominent than at the assembly stage. Preassembly is also the most capital intensive stage in the clothing sector and where quality and precision is the most important. If, for example the fabric is not cut precisely, the quality of the finished garment can be seriously damaged. Preassembly is therefore the stage in the production chain that is most likely to be done in-house by major clothing firms.

Indeed, the **higher value-added** segments of the supply chain are all within the category D) services: gathering of market data, product design and fashion, marketing, retailing and selling of apparel and textiles and logistics, (storage, transports and distribution of apparel and textiles). In this segment the apparel industry is characterized by modern technology, and a high degree of flexibility. The competitive advantage of firms is related to the ability to do a good market research and produce designs in the preassembly phase that capture tastes and preferences, and even better - influence such

⁷ The clothing production is divided into assembling of structured or heavy (tailored uniforms, pants, and suits,) and unstructured or light (casual) apparel such as t-shirts, skirts, dresses, blouses, and shirts. More operations are needed for the production of heavy clothing where also more computer controlled cutting and profile stitching are needed. Moreover, having machines for pocket sewing and buttonhole stitching and machines for making applications for emblems and trade marks as well as a steam are also needed increasing running costs and infrastructural needs in comparison with the assembling of light apparel.

tastes and preferences - in addition to cost effectiveness. In fact, the lead firms shift production in a variety of exporting countries which allows them to concentrate energies on design of new styles of clothing, marketing and branding. In this high-value added segment design, research and development (R&D) are important competitive factors. The high end of the fashion industry uses human capital intensively in design and marketing, and in gathering information about the apparel standards, values and tastes, in various countries.

Efficient and timely production of apparel is of little use if not complemented by equally efficient and timely flows of the goods for sale. The emergence of distribution centers, replacing traditional wholesalers and storage facilities ensures efficient and timely flows of goods. A distribution centre consists of bays for trucks to unload or load goods. Incoming goods are packed in standard containers with barcodes that are scanned as they enter conveyor belts. Logistics operations such as procurement, transport and distribution of textiles and apparel are a crucial factor in providing quick delivery of final products and are important part of the supply chain in the apparel and textile sectors. Logistics is increasingly dominated by large retail organizations in the main consuming countries, where the trend is towards greater product specialization, brand-name products and market segmentation. Talking about logistics it is important to note that increasingly in the world there is a greater crossover between distribution and production. Retail brands want to control the entire value chain in order to respond as closely as possible to consumers' desires, maximize their profit margins, and increase the security of their purchases. In this context, direct control over the two extremes of the value chain - i.e. design and distribution is considered strategic. Retailers are therefore becoming more active in designing and perfecting their products, while brands seek direct access to their customers by integrating retailing into their business.

Technological progress in telecommunications and transportation networks has made it easier for apparel manufacturers to divide the supply chain on an international basis and to perform the assembly stage in low-wage countries. World retailers and brands make use of four major supply methods:

- Manufacturing their own products: the clothing is produced in factories owned by the brands or retailers themselves.
- Sub-contracting or outward processing agreements/program: the retailer or brand like Levi's supplies the design and the fabric and essentially pays for the fabrication time.
- Co-contracting or "full package of services": the retailer/brand supplies the design but the producer buys the fabric and sells a finished product. The choice of fabric may be made solely by the retailer or brand, or jointly or maybe left entirely to the producer discretion.
- Finished product purchase: the design belongs to the producer, even if it may sometimes be reworked by the contractor.

Outward Processing Trade (OPT) is a way of manufacturing and trading garments whereby the imported - mostly pre-cut - inputs are assembled and sewn and then re-exported to the country which firm has arranged the production without additional customs on the exported labor. For such production the following terms are also used in common parlance: assembly production, production sharing, cut-make production or Lohnveredelung which in German means wage-enhancement, describing the fact that the material is transported into foreign countries to receive an upgrading through the "infusion" of labor. For low-wage developing countries, the assembly of imported fabrics into apparel is a simple form of industrial activity. On the other hand, for developed countries, wage-enhancement transactions strengthen the competitive position of domestic suppliers by enabling them to transfer the labor-intensive sewing activities into these low-wage countries. This kind of production has a long history, as for example, the former West German government developed a policy of clothing sourcing from the country in the mid-nineteen sixties, as part of a plan to focus their domestic economic resources on higher added-value products. This business is dependent upon achieving quality to standard at the cheapest price. It is a fundamentally unhealthy situation, because factories compete with factories throughout the world primarily on the basis of price.

To make this system worthwhile, the cost savings associated with low-wage assembly must exceed the inherent additional costs of production fragmentation, namely:

two-way shipments; longer and larger inventory; and added co—ordination to manage the fragmented supply chain. This re-importation arrangement can only be profitable for the buyer/input-supplier company in the country of origin, when the assembly costs (wages, rent, energy costs, etc.) are kept attractively lower than in the home-country and competing other countries, the terms of trade are favorable and the trade transactions are not subject to customs or tariff expenditures. Assembly production is characterized by its high level of dependence on buyers, those companies that place OPT orders. Decisions by buyers can have drastic impacts on the small producers, while even small deviations in production costs can in turn drive the producer “out of the market”. Any increase in production costs (labor costs for instance) may prompt the client to turn to the competitors. Competition between suppliers sometimes allows major buyers to obtain discounts on the price they pay for garments, which in turn further reduces the manufacturers’ profit margins, together with any prospects their workers have of securing improved conditions.

Textile trade in the world

The textile sector is a significant sector in the world exchanges: in 2002, world exports of textile and clothing amounted to € 353 billion, nearly 6 % of world exports. The clothing sector takes the lion’s share with € 201 billion. Textile and clothing trade still plays a sizeable role in the economy of industrialized countries, but it is most important for some developing and least developed countries. Many developing countries have come to rely on textiles and apparel to generate national income and create jobs. For at least a dozen developing countries, textiles and apparel account for more than 25 percent of manufacturing exports and more than 60 percent for countries such as Bangladesh, Honduras, Pakistan, Nepal, and Sri Lanka.

Data on World Textiles,⁸

⁸ Washington Post, “China ready to Take On All Competitors and Markets”

Importers:

US Textile Imports 90 billion USD

Europe 164 billion USD

Exporters:

Country	Textile Exports in \$	% of total exports	wage per hour in \$
Mexico	9.7 billion	6%	2.45
Honduras	2.7 billion	63%	1.48
Turkey	15.4 billion	33%	2.13
Jordan	695 million	29%	0.81
China	79.7 billion	18%	0.68
Pakistan	12.3 billion	74%	0.41
India	12.9 billion	23%	0.38
Macedonia	2.8 billion	60%	0.48
Thailand	6.1 billion	8%	0.91
Cambodia	1.9 billion	88%	0.32

Wednesday, November 17, 2004; <http://www.washingtonpost.com/wp-dyn/articles/A55497-2004Nov16.html> Textiles facts: http://www.washingtonpost.com/wp-srv/world/daily/graphics/textiles_111704.html

Trends in Textile Production: Competitiveness Factors

The world textile and apparel industry encompasses a large number of products and markets. A product-and country-specific competitive assessment may be conducted to evaluate a country's risk exposure, taking into account competitiveness factors such as:

- Preferential trade agreements provided to regional suppliers;
- Wage and non-wage labor costs;
- Labor productivity;
- Infrastructure (access and costs of electricity, water, communications, and local transportation);
- International transportation cost and lead times; (lead time= The amount of time between the placing of an order and the receipt of the goods ordered. The amount of time between the request of a service and the actual provision of this service. A span of time required to perform an activity. In a logistics context, the time between the initiation of a process and its completion.)
- Corporate tax rates;
- Customs procedures;
- Access to competitively priced raw materials, yarns, and fabrics;
- Political and economic conditions; and
- Access to foreign capital and management and marketing expertise.

How to Improve Competitiveness- General Overview

It is not at all easy to discover which countries have a comparative advantage in this industry, in relation to others. Such an advantage depends on many factors, of which the most important may be the economic environment, the structure and managerial skills of

enterprises, the costs of production, the quality of products and the efficiency of marketing. Due to long-run changes in these factors, any conclusions on comparative advantage reached at a certain moment in time, may therefore have to be modified over the next months or years. The economic environment is mainly composed of the overall **infra-structure of a country** (human resources, public policies, administration, banking, transportation, industrial structure, etc) which is somewhat different in each developing country, and which is sometimes very different from the situation in developed countries. The importance of efficient transport infrastructure, reliable and competitive modes of transport and efficient customs procedures for maintaining a competitive edge in the highly competitive textile and clothing markets is high. The reliability of transportation infrastructure and efficiency in customs procedures complements each other in minimizing transit periods for shipments involved in international trade and can make geographically remote locations more internationally competitive. Even if long transit periods can be overcome to some extent by preferential market access arrangements, long transit periods can essentially eliminate from international competition the offshore centers that are either geographically remote from the buyer's markets or nearby centers with poor transportation infrastructure. The industries in those countries with a well established and smoothly functioning system in all these areas can usually produce more efficiently than industries in other countries. Industries in countries with open markets are regularly more used to international competition, and therefore more competitive, than in those countries protecting their industries against imports. But the competitiveness of an industry can also be affected by exchange rate changes, which may not have been caused by anything to do with this particular sector.

The structure of enterprises and their **managerial skills** not only vary among different countries, but also within one country. While in the traditional textile and clothing producing countries there exists a full chain of textile and clothing production (fibres, yarn, fabric, finishing, made-ups, clothing, accessories), production in many developing countries is very much concentrated on a few products only, and raw materials have to be imported. Examples can be found in most African countries, in Latin America and sometimes also in

Asia (for example Bangladesh, Macedonia, the Philippines). Great importance also applies to the existence of a textile machinery industry in the same country. The advantages of regional proximity and close cooperation in the development of modern technology and machinery for the production of textiles and clothing, seem evident. Managerial skills of enterprises are primarily based on individual capacities and therefore vary even among companies within one country. This contributes to the development and existence of companies with different competitiveness in the various markets. The level of skills in a country is however also an expression of the management culture, more or less advanced in the different countries. The comparative advantage of developing countries in the assembly process, i.e. the sewing process, based on low wages, does not necessarily translate into a comparative advantage in the management of the entire supply chain when all services-related dimensions are taken into consideration. Efficiency in managing the entire supply chain is required, including in design, fabric procurement, and logistical skills in transportation, quality control, and property rights protection, export financing and clearing of trade formalities. The danger is that badly run businesses will perish before they have a chance to prosper. Mr Goodstone reckons that without better bosses, the mass-produced garment business in central Europe will be "dead in five to ten years".⁹ The new trend in central Europe is for investment by firms from other outsourcing locations in places such as China, India and Turkey. Firms there are eager to gain an edge on their rivals by moving closer to the customer. Turkish entrepreneurs, for example, have bought textile factories in neighboring Romania, installing new management there. That takes advantage of local labour costs, and brings big productivity gains.

The production of clothing depends on a high input of labor, and therefore labor costs represent the most important cost factor in this case. An international comparison of labor costs, by Werner International, sheds light on the competitiveness of the textile and clothing industries in the various countries. Labor costs in developed countries are by far the highest, in textiles as well as in clothing. The lowest reported total cost per hour in 1998, varied between US\$ 0.24 and US\$ 0.62 in textiles, and between US\$ 0.16 and US\$

⁹ Ibid.

0.43 in clothing, in Asian countries such as Indonesia, Pakistan, India, PR China and Vietnam. Latin American, Mediterranean, East European and some Asian countries (South Korea, Taiwan) were placed further up in the ranking, between some 1 to 6 US\$ per hour, while the EU countries, the USA and Canada had the highest labor costs, between 6 and 18 to 24 US\$ per hour.

Another factor in the consideration of comparative advantage is the **design and quality** of products. As in the case of production technology, where a continuous process of innovation and modernization takes place at all levels and in most countries, also in this field permanent upgrading is essential for achieving, maintaining and improving competitiveness. There are large differences in levels of design abilities, product innovation, product quality, and the share of branded products, between European producers of textiles and clothing and those in most developing countries. But much progress has been made in recent years, particularly in the advanced exporting developing countries such as Hong Kong, South Korea and Taiwan. As upgrading and innovation of processes, materials and final products have been developed as a basic instrument for the EU industry to remain competitive, so this is also true - albeit at a lower level - for developing countries. Recent reports talk of the efforts of clothing producers, for example in Bangladesh and Thailand, to move steadily toward high-value, sophisticated items, such as high-quality suits, jackets, branded jeans items etc.

In addition to the improvement of production and design efficiency, the development of efficiency in the **marketing** of products has become extremely important as a factor of comparative advantage. Already, most developing exporting countries have to make efforts to find markets for their products. Waiting for customers to come is no longer sufficient to increase exports. Marketing strategies have to be developed and applied, if the industry of a country wants to survive the more intense competition of the future. Experience in this field of most developing exporting countries seems rather limited. This includes particularly those industries which mainly serve as executors of instructions from EU companies, either

in the field of OPT or within joint ventures. The marketing strategies of successfully operating international companies may serve as an example for others, wishing to improve their ability, and thus their comparative advantage in international trade.

Within the changing trade environment, global competitive performance for textile companies in both developed and developing countries is much more a matter of a company's ability to take advantage of the new opportunities offered and its strategic alignment, focusing on either low cost production or off-setting cost factors against product and process specialization, operational efficiency, technological superiority and market proximity. Labor costs, both in industrialized and developing countries remain therefore a serious factor influencing a company's strategic position.

While low-wages can still give developing countries a competitive edge in world markets, quick turnaround times are now playing a far more crucial role in determining international competitiveness in the fashion-oriented and ever more time-sensitive textile and clothing markets. The comparative advantage of developing countries in the assembly process, i.e. the sewing process, based on low wages, does not necessarily carry over into a comparative advantage in the management of the entire supply chain when all services-related dimensions are taken into consideration. Countries that aspire to maintain an export-led strategy in textiles and clothing need to shift their industrial cluster of expertise from manufacturing to the **higher value-added** segments of the supply chain. This can be done by upgrading their domestic skills in design, material sourcing, quality control, logistics and retail distribution. To move along the supply chain beyond the mere assembly stage of imported inputs into more advanced activities, exporting countries need to shift their industrial cluster of expertise from manufacturing to services-related functions, such as design, material sourcing, quality control, logistics and retail distribution. To pursue these avenues, national suppliers need to place greater emphasis on education and training of services-related skills; and to encourage the establishment of joint structures where domestic suppliers can share market knowledge and offer more integrated solutions to prospective buyers.

How to Improve Competitiveness- Specific Issues

1) Production Costs

A number of factors come into play when setting the cost. These include:

- workers' wages and working conditions
- the possible need for calling in foreign specialists to manage production (in case of a middle or senior management shortfall at local level)
- domestic and international transport costs
- energy costs (cost of electricity; existence of frequent power cuts creating the need for back-up generators, water costs, ...)
- the level of corruption (particularly at customs)
- the level of automation and workers' training (which can help reduce the number of products that do not comply with orders)
- the exchange rate and customs tariffs (see below)

It is widely known that production wages in the developing world are so low that they represent a mere fraction of the cost of a garment sold on Western markets by a major brand. However, given the very low prices imposed by the major sourcing companies (most often multinationals) on their suppliers in developing countries, the suppliers' profit margin is not usually very high. Any increase in production costs (labor costs for instance) may therefore represent a substantial loss of income, which cannot always be recouped through increased prices, as this may prompt the client to turn to the competitors. Competition between suppliers sometimes allows major buyers to obtain discounts on the price they pay for garments, which in turn further reduces the manufacturers' profit margins, together with any prospects their workers have of securing improved conditions.

2) Time Factors as Determinants of International Competitiveness

Paramount to the development of the clothing and footwear industries is the ability to deliver consumer products into the markets against tightly controlled schedules. Many retail groups now book the transport at the same time as placing their orders for production, to ensure that the products are collected and delivered against their pre-planned intake of stock. Late deliveries, however caused, are no longer acceptable in the highly competitive markets of Western Europe. The role that textile and clothing production now plays in the industrialization process of developing countries is far more differentiated than it was a generation ago. While low wages can still give developing countries a competitive edge in world markets, **time factors** are now playing a far more crucial role in determining international competitiveness. Time factors act as important trade barriers for intermediary inputs involved in an internationally fragmented production process.

Shorter Deadlines

Time is therefore a key issue for managing sales and stocks. Ever-**shorter deadlines** have become one of the buyers' central requirements. This appears to be a recent development in the clothing sector, as explained in the "Play Fair at the Olympics" report: "The traditional system of ordering in bulk to meet consumer demands in the basic four seasons has dramatically altered. For one thing, the number of fashion seasons has increased. For another, bar-coding systems track consumer purchases, allowing retailers to order stock automatically as it runs out in stores. So instead of ordering in bulk from suppliers and then keeping supplies in stock, either in the shop or in the warehouse at huge cost, the purchaser expects the supplier to deliver smaller amounts to replenish the shop-shelves as and when they become empty. This system also protects the companies from the problem

of surplus stock if products prove to be unsuccessful."¹⁰ Mid term collections are becoming more numerous. Buyers commit later and later, and split their big orders into several small ones that are delivered all throughout the season, in order to secure their purchases as mentioned above. If a product does not sell well, the stocks that remain are fabrics -which can be used for another design- instead of finished products that will end up selling for half their initial price. Pressure to speed up production time is continually increasing in the textile and fashion field.

Minimum stocks are a major goal, the main driver being a reduction of costs. Differentiation means smaller ranges because fashion design products have a shorter life expectancy than basics, and prove to be riskier: consumers' response to a novelty is often unpredictable. Series thus tend to be more short-lived and more numerous, and stocks tend to inflate because of more ends of series. It is of the utmost importance that retailers restrain their stocks, thereby limiting the number of unsold products so that they can master their costs, margins, and selling prices. Limiting stocks also concerns large series of basic and permanent products- such as lingerie and home linens- for which production now tends to be spread out over a longer time period so it can adapt to sales forecasts, with production capacities reserved over the long term and products designed as stocks change. Influenced by the logic at play in the food sector, retailers thus improve the profitability of their stockholders' capital by using the rotation of stocks as leverage, which is a better "pay-off" than increasing their mark-up. For the suppliers, it means having to deliver smaller orders in less time and according to very tight export deadlines.

Proximity to End- Markets Key for Time Sensitive Clothing Market

Proximity to markets can result in faster turn-around times, which is increasingly important for garment buyers in developed countries. There are trade-offs between low-wage cost and time factors, whereas time proximity to large consumer markets provides a competitive

¹⁰ See p.37. The full report is found at <http://www.fairolympics.org/en/report/olympicreporteng.pdf>.

edge for succeeding in the highly competitive, time-sensitive and fashion-oriented clothing market. For time-insensitive goods and long production runs, China is still the clear winner for global factory relocation. When businesses need **products finely tailored** and delivered quickly and flexibly, then Eastern Europe scores highly.¹¹ The importance attached to delivery lead-times acts in favor of supplier countries within close proximity of the two main markets (Central America for the United States and Canada, Mediterranean and CEE countries for Europe). The distance separating Asian and Southern African supplier nations from the two main markets means they cannot be competitive for all clothing segments given the high cost of airfreight. Fashion wear, which is more ephemeral than classic clothing, will tend to be manufactured in regions that are closer at hand, so as to allow for faster restocking following a commercial success or faster adjustments in response to new fashion trends. In the garment industry, foreign companies are doing a booming trade with east European countries in the business of “**fast fashion**”—ordered and manufactured in speedy response to sales trends. The product cycle for garments from China, is about three months—with four weeks of that time spent at sea. From Eastern Europe, by contrast, it is just four to six weeks, including a day or two for delivery by lorry.¹² It takes approximately 2 days to ship to the US from Mexico, compared to about 28 days from Asia.

As consumers demand more variety, the quantity of any one style of garment purchased by retailers has been reduced. In production terms, this has required a complete change in production planning and in the way in which garments are assembled. The time allowed for processing has had to be reduced, including material lead times and the sewing force has had to become more skilled and, where necessary, to be trained to make through the whole garment. To deliver a just-in-time service, the region's suppliers must be more **flexible**. To meet the Chinese challenge, companies have to invest in flexible production lines that can switch from one product to another on a daily basis to meet demand. Fashion no longer has to be expensive. For brands like Tommy Hilfiger and Zara, orders will go to suppliers who “can be flexible with trends in quite inexpensive items”. **Short production runs** will be a

¹¹ Quick turn-around times is however more significant for women's garment than for men's garments since women's garment styles are typically subject to shorter production runs than men's garments.

¹² *The Economist* “Outsourcing in eastern Europe The rise of nearshoring” December 1st 2005.

norm of an industry geared to satisfying capricious consumer demand in the more advanced economies. Small, multi-skilled cutting and sewing units that are able to respond quickly to changes in styling and fabric types are far better suited to this trend in trading than conventional 'assembly-line' operations.

3) Technology

The development of smaller manufacturing units does not negate the need for higher levels of investment in computer-aided-manufacturing (CAM) equipment in lay planning and cutting. Producing companies need to be of sufficient size to fund these requirements. The use of **computer technology** in design has aided the international development of clothing and is in widespread use the advanced economies, particularly in those importing a high proportion of clothing from the Far East. Supplier countries, or would-be suppliers are using the Internet as a means of submitting technical information, pattern amendments and even new design ideas to their customers in Western Europe and North America. As markets have become more sophisticated, the selling periods related to seasons have shortened to around 13 weeks, necessitating a very rapid response to changes in consumer tastes and product development times are being reduced.

Computer-based technology permits the rapid transfer of data, including design sketches, around the world. Concepts discussed in Berlin, London, Paris and Rome, as well as in New York, Los Angeles and Hong Kong, can be sent to factories anywhere in the world in a few moments and patterns developed and sample making can be carried out in hours, or at most in a few days. Electronic data transfer between customers (retailers) and manufacturers allows them to cut and sew just what is needed rather than making for stock. Full body scanners are now available on the High Street, so the sellers of tailored garments can give the individuals measurements to the manufacturer with increasing

accuracy and provide a three-day delivery cycle for the finished product. A degree of investment in machinery and management skills is crucial but it is dependent on the availability of a skilled, literate workforce that is able to readily adapt to the introduction of new production methods or technology. Someone needs to operate the machinery and introduce the new production methods. Top-end brands have to justify their higher prices with flawless quality. Unfortunately, in many developing countries, quality education is in too short supply to produce sufficient numbers of skilled workers.

4) Trade Policies: Customs tariffs and rules on origin

After the WTO quota system members came to an end, customs tariffs remain only restriction on the imports of certain countries. Although they cannot be set arbitrarily and there is a general trend towards the lowering of these tariffs across nations, they still go some way towards protecting markets from imports. The tariffs currently applied reach averages of up to 12% in the European Union and 15% in the United States. Importing countries could bring their customs duties into play to favor imports from countries where the social impact of the end of the quota is strongest, for example, or countries where workers' rights (particularly freedom of association) are most respected. The average tariff protection applied to textile and clothing imports remains high compared to average tariffs imposed on manufactured products for the overwhelming majority of developed and developing countries. In developed countries, the average tariff applied on clothing products is 16.1%, but it is 6.2% on manufactured goods. In developing countries, the average tariffs are 23% for clothing products and 13.5% for manufactured goods. Moreover, there are considerable differences among developed countries in the level of tariffs applied on textiles and clothing and in the imposition of very high tariffs on trade sensitive products, the so-called tariff peaks that are often defined as those exceeding 15%. There are also similar imbalances among developing and least developed countries.

Table 8. Simple Average Tariffs, Selected Countries

Source: UNCTAD (2002), based on UNCTAD and the World Bank, World Integrated Trade Solution database.

Region Country	Manufactures	Textiles	Clothing
OECD countries	6.2	9.4	16.1
Australia	5.4	9.9	20.7
Canada	4.9	10.7	18.4
European Union	4.4	7.9	11.4
Japan	2.9	6.5	11
Korea	8	9.4	12.4
Mexico	17.3	20.5	34.4
New Zealand	3.1	2.4	13.7
Turkey	5.9	8.6	11.8
USA	4	9.1	11.4

The rules on origin are another aspect to be considered. Some countries or regions, like the European Union, award lower tariffs on the clothes produced in a country on the

condition that they comprise a certain percentage of raw materials from the country concerned.

5) Respect for workers' human rights/ Labor Laws and Ethics Important

Every effort has to be made to ensure that another criterion is given greater importance in the major sourcing companies' selection process: respect for human rights, and, above all, workers' rights. In the longer run, we may see more widespread awareness of the need to respect workers rights, not only as a result of trade union pressure or for fear of the damage that inhumane working and employment conditions can cause to a brand's image, but also based on the simple economic logic that a company's productivity increases as its working conditions improve. Ethics -i.e. labor and environmental conditions- are considered mainly as a potential threat by many retailers and brands. Nevertheless, a rapidly growing minority of retailers and brands does go further, by setting up controls and drawing on independent monitoring organizations to verify that core labour standards are complied with by their suppliers. The increasing use of direct sourcing also facilitates the retailer's/brand's influence on the labour and health and safety conditions at production sites. Some go even further, by developing a company philosophy as a "good citizen of society", thereby making ethics a strategic factor for differentiating themselves. Sustainable development is also a crucial issue in thinking about the future of luxury brands, whose imagery encompasses notions of timelessness and craftsmanship, which are in harmony with the idea of passing along a respect for the environment to future generations.

"Countries with labor laws consistent with ... codes of conduct - and the means to enforce them - could effectively market themselves to the more socially-conscious US and EU retailers and manufacturers," noted Appelbaum (2003: 50). The EU has included compliance with labor standards in its discussions of the future of the sector. Anna Diamantopoulou, the EU's Commissioner for Employment and Social Affairs noted that: "An important aspect of the Commission's proposals for the textiles industry is the focus on

issues of corporate social responsibility - including respect for international labour and environmental standards - and responsible management of industrial change, including consultation of workers in good time." Sourcing companies will need to ensure that their pricing practices (ex. low unit prices, tight delivery schedules) are not at odds with labor standards compliance (ex. in relation to wage and working hour standards). The growing importance of large retailers in global supply networks means that their practices should also come under scrutiny when considering roles and responsibilities in relation to ensuring that labor practices at all levels of garment and textile production meet good international standards. Governments also have a role to play in this context, by initiating labor law reforms that raise standards to meet International Labor Organization standards set out in the better codes of conduct.

6) Relationships with suppliers are becoming more professional

Practices are more transparent. Even if much business is done by word of mouth, fewer "arrangements" are made with suppliers. Specifications in particular are being written more carefully. Relationships are becoming more formal and organized. Buyers rationalize their suppliers' pool : they have been reducing the number of their suppliers and will continue to do so, while turning them more into partners with specific responsibilities. Even if the quality of the partnership varies greatly from one actor to another in Europe, a mutual trust is developing between these partners, and business relationships are of a longer-term nature. Long term trusted and reliable supply chain partners that successfully and efficiently produce and deliver merchandise were consistently are key factor to future sourcing decisions.

7) Source Locally/Raw Materials

Several factors play in favor of an efficient interaction between textile and apparel sectors within the supplying countries. In order to be fast, reliable, flexible, cheap, creative the clothing and knitwear manufacturers do benefit from the proximity of dynamic and successful fabric and knitting yarn suppliers. Moreover, retailers increasingly “co-contract” with suppliers, which means they want them to take responsibility for the fabric, yarn and trimming supply, which give retailers more opportunity to focus on marketing issues. Not all apparel suppliers and supplying countries are in a position to satisfy this requirement: for the time being, few are able to source locally the necessary inputs. Optimizing delivery time incontestably favors countries which have a local yarn and textile offer of “European quality” located close to high-performance making-up; China and Turkey are the best examples of this type. Nevertheless, the idyllic picture of a production line that goes “from cotton field to tee-shirt” does not often materialize:

- . • Finding making-up and textiles in close proximity is more common in knitwear than in woven goods and is most common in basic knitwear,
- . • Products which necessitate creative or technical materials do not fit into this picture, as the fabrics concerned are still mostly produced in Europe and in Asian countries with high wage costs,
- . • In order to combine price and reactivity, retailers and brands sometimes have to import Asian fabrics (essentially undyed or in basic shades) to be made up in the PanEuroMed zone.

8) Role of Governments

Governments have a supporting role to play in establishing a coherent policy and regulatory framework. The objective of this framework should be to strengthen the capacity of the private sector to deal with rapid change and growing competition, and to capture the trade opportunities that are being created through improved market access. This process involves dismantling trade-distorting production measures, improving the regulatory environment on essential business services, supporting the emergence of

qualified pools of expertise and the adaptability of the workforce, negotiating improved market access for textile and clothing products, and eliminating the obstacles to the establishment of retail distribution systems in developing countries. Moreover, governments should keep in mind that in the long run innovative capacities basically depend on the availability of suitable human capital. Therefore, a sound education and qualification system seems much more important for sustainable technical progress than public innovation programs. This applies not only to textiles and clothing, but to any other industry.

9) Full package of services and Skilled Labor

The other key to survival is the ability to deliver a full package of services. Full package production means a US retailer can go to a Chinese manufacturer and say 'we want so many thousand jackets; we will send the designs to you down the line'. The Chinese firm then gets the raw material, designs the jackets according to the US retailer's master plan, makes them in its factories, packs them and sends them directly back to the US. As retailers no longer have to source from many different countries, they will be looking to single suppliers to do everything from design to cutting and assembly. This will smooth and expedite their supply chains. Thus there will be a new premium on skilled labor, as companies have to extend their range of skills from just sewing and stitching.

10) Financial Means (Capital/Credits) are needed

Consideration has also to be given to the funding of clothing production. Under outward processing trading conditions, the customer has traditionally provided the materials on a 'Free-of-Charge' (FOC) basis against pre-determined usages. Any future contract work is likely to be offered on the basis that the manufacturer will buy the required amount of fabric and accessories from specified suppliers and at prices negotiated by the buyer.

Western European retailers or brand owners will have indicated to the fabric producer an approximation of the volume required and a percentage ratio over color ways likely to be ordered during the course of garment manufacture. This is then the basis of the prices agreed upon. The clothing manufacture has to order the actual requirement and pay the supplier under terms and conditions negotiated directly between them. This trade calls for far more working capital in the clothing manufacturing industry and is acknowledged as being an added difficult for 'soft-currency' suppliers, who often get help with this aspect of trade from the buyers.

11) The growing importance of the non-clothing use of textiles

The textile industry is also undergoing a major reorientation towards non-clothing applications of textiles, known as technical textiles, which represent the fastest-growing segment of total textile applications. Technical textiles are often defined as textile materials and products manufactured primarily for their technical and performance properties rather than for their aesthetic or decorative characteristics. They have many applications, including bed sheets; filtration and abrasive materials; furniture and healthcare upholstery; thermal protection and blood-absorbing materials; seatbelts; adhesive tape, and multiple other specialised products and applications. It is estimated that technical textiles are growing at roughly twice the rate of textiles for clothing applications and now account for more than half of total textile production. The processes involved in producing technical textiles require relatively expensive equipment and skilled workers and are, for the moment, concentrated in developed countries.