



JÖNKÖPING INTERNATIONAL BUSINESS SCHOOL
JÖNKÖPING UNIVERSITY

Location Dynamics of Textile & Clothing Industries in Europe

- The Case of Sweden and Portugal -

Bachelor Thesis within Economics

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Abstract

The purpose of this paper is to analyze the location dynamics of textile and clothing industries in the EU15. Specifically, it seeks to answer the following questions: What are the factors that contribute to the relocation of European production to low-wage countries? Who are hurt by these changes and who gain? How does the European textile and clothing industry cope with these challenges? It is beyond the scope of this paper to analyze the T/C industry of each EU15 member state. Instead, it specifically investigates Sweden and Portugal's textile and clothing sectors simply because the former represents Europe's old economy while the latter the most recent one. In addition, each country devotes its production to the different sectors of the industry, hence this cross-country comparison. Majority of the data is gathered from SourceOECD as the webpage contains information of most value to this paper. The result of this study shows that as an industry matures and competition heats up pricing measures, the developed country moves production operations overseas, ends up as a net importer of the good and shifts focus toward other activities. This process takes effect gradually but the liberalisation of world trade and European enlargement are a few contributing factors which helped anchor relocation decisions.

Kandidatuppsats inom Nationalekonomi

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Sammanfatning

Syftet med uppsatsen är att analysera utlokaliseringen av tekoindustrin i EU15. Man finner svaren i följande frågor: Vilka faktorer bidrar till omflyttning av produktionen till låglöneländer? Vilka är vinnarna och förlorarna på denna omstrukturering? Hur klarar den Europeiska tekoindustrin av dessa utmaningar? Att redogöra för varje EU-land är för omfattande därför valdes Sverige och Portugal beroende på att respektive land har en utvecklad och mindre utvecklad ekonomi. Därutöver riktas deras produktion mot olika sektorer av tekoindustrin vilket möjliggjorde landsjämförelsen. Största delen av datan har samlats från SourceOECD's hemsida då den innehåller information som är viktigast för uppsatsen. Resultatet visar att när industrin utvecklas och marknaden till slut blir överhettad börjar industriländer att flytta produktionen utomlands, fokuseringen ändras och importen blir allt viktigare. Denna process sker gradvis med hjälp av liberalisering av världshandel och EU utökning.

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1 Introduction

The society we live in today puts great emphasis on fashion and beauty. It is very rare these days that men, women and children wear a piece of clothing that is not inspired by top designers from New York, London, Milan or Paris. Europe, for its part, is an important producer of textile and clothing products, employing more than 2 million people; a figure which automatically increased to 2.7 million after the May 2004 EU enlargement (Stengg, 2001). Like many other sectors, the European textile and clothing industry (T/C industry) has been greatly affected by world trade, so considerable restructuring and modernisation have been undertaken to prepare for the challenges and obstacles that lie ahead. Whether the European industry remains at the top of its game will depend on its competitiveness as well as its ability to negotiate and achieve more open trade with other nations. In retrospect, the European T/C industry is one of the oldest sectors in the history of industrial development. It has had time to develop and evolve in the market despite some massive setbacks. These setbacks came in different forms and were influenced by the events of the time. Regardless, it rose up to the challenge to get where it is today.

Several studies have been made on issues focusing on the main policy and regulatory challenges in the areas of trade policies, labour adjustment and recent technological and managerial developments in the textile and clothing sectors. Studies published by OECD, Euratex, WTO, the European Commission and other related organisations are abundant, that it is quite impossible to mention all of them in this paper. What is interesting and perhaps enlightening is the work of Keenan, Saritas and Kroener (2004), because it forecasts the future of European textiles and clothing in terms of international trade relations, organisational structure, new and emerging technologies, human resources and the enforcement of international rules and conventions. Their study specifically asked the question, can trade ever be free? It concluded that if the safeguard mechanism against China is pursued, this may jeopardize the continuity and stability of the international trading system. Import quotas will always be renegotiated as countries like the EU and the USA find it hard to compete with Chinese imports. European measures focusing on quality, design, innovation and high value-added products will have limited impact because firms will always be attracted to cheaper sites of production. According to the article, there is no doubt that European manufacturers will bounce back because they have proved resilient and tenacious many times. Sadly, the new Accession and Mediterranean Rim countries will be greatly affected because they rely too much on cheap labour for their competitiveness. Chances are textile industries in developing countries will be wiped out if Chinese competition continues to increase.

Stengg (2001) and Nordås (2004) made a similar study but they give a more detailed account of the industry in question. Of course, other studies have targeted particular countries like Lane and Robert's (2004) comparison of the British and German clothing industry or Sverker's (1994) evaluation of industrial policy in Sweden. The effects of European enlargement have, for a time, attracted a great deal of interests as well. However, none of these studies directed their focus in the context of a mature industry. D'Ercole made an attempt in 1993 but her work dealt mainly with innovation. For this reason, the purpose of this thesis is to analyze the location dynamics of textile and clothing industries in the EU15. Through discussion, presentation of theory and direct example, it attempts to answer the following questions:

1. What are the factors that contribute to the relocation of European production to low-wage countries?
2. Who are hurt by these changes? Who gain?
3. How does the European textile and clothing industry cope with these challenges?

These questions serve as a guide to better understand the trappings of a mature industry. The thesis begins with Section 2 which gives a brief but concise overview of the European textile and clothing community. In particular, it describes the main features characterising the T/C industry, its importance and the issues surrounding product development and production. Section 3 explores Vernon's theory of the product cycle while Section 4 investigates the cross-country differentials in domestic production and external imports as a percentage of domestic consumption for the period 1980-2000. Finally, this thesis ends in Section 5 discussing the conclusions and recommendations for future research.

2 Background

2.1 Importance of the EU15 T/C Industry

According to SourceOECD, the EU15 was the first member states in the European Union before the accession of ten candidate countries on May 1, 2004. It is comprised of the 15 countries listed in Table 2.1 below:

Table 2.1 The EU15

Austria	Germany	Netherlands
Belgium	Greece	Portugal
Denmark	Ireland	Spain
Finland	Italy	Sweden
France	Luxembourg	United Kingdom

Source: SourceOECD

Southern countries in the EU15 (in particular France, Greece, Italy, Portugal and Spain) specialize in the production of clothing while Northern countries (such as Austria, Belgium, Germany, the Netherlands, Sweden and the UK) concentrate more on the production of textiles. The European textile and clothing sector is a very large and diverse industry which covers a wide variety of activities from the treatment of fibres or yarns, production of knitted or woven fabrics to the transformation of those fabrics into products like clothing, home textiles and technical textiles¹. These sectors occupy approximately 4 percent of total EU manufacturing production and 7 percent of EU manufacturing employment. A breakdown of production in the European T/C industry shows that clothing accounts for 46 percent, home textiles 32 percent and technical textiles 22 percent (The Commission of the European Communities, 2003).

The textile and clothing sector in the EU15 has experienced a decline in production and employment over the past decade. In the years 2001 and 2002, production plunged significantly by -8.7 percent and employment by -8.4 percent. Trade deficit alone amounted to €26.2 billion in 2002 despite a surplus of €7.9 billion in textiles and a deficit of €34.1 billion in clothing (The European Commission, 2005). The European Commission (2005) claims this overall decline in production and employment is attributable to the abolition of quantitative restrictions and the emergence of important competitors abroad. Similarly, there remain significant impediments for EU exports of textiles and clothing. The EU15 to this day has limited market access to third countries, thus contributing further to the industry trade deficit. The European Apparel and Textile Organisation (Euratex) has sought proper access to world markets for many years, claiming that it would boost European exports because many countries nowadays have a growing middle class who can afford to buy high-quality European products. This scenario was evident when South Korea, Brazil and Mexico opened their markets in the 1990s as a result of a free trade agreement with the EU (Euratex, 2005).

¹ See Appendix A and B for a detailed breakdown of products.

Unfortunately, the WTO Agreement does not provide for symmetric obligations to remove other trade barriers. The European Commission, despite its great influence on trade talks, has been busy negotiating across-the-board market access with numerous trading partners but the process is very slow (Commission of the European Communities, 2003).

2.2 General Characteristics of the EU15 T/C Industry

The challenges poised by the quota free market and increased international competition have resulted in a massive transformation in the European textile and clothing industry. Europe has undertaken a lengthy process of restructuring, modernisation and technological progress as a response to these challenges. Companies, in particular, improved their competitiveness by reducing or ceasing mass production of simple fashion lines and focusing instead on quality, design and high value-added products. New technologies have been widely adopted and deployed into the organisation to better facilitate production (Stengg, 2004). Fast-fashion retailers these days use handheld computers for customer feedback processing (The Guardian Unlimited, 2005). Perhaps, the greatest setback in the industry is the shortage of competent textile engineers. Part to blame is the fact that the European textile and clothing sector is vastly dominated by small and medium-sized enterprises; most of which are privately owned and few are listed on the stock exchange. Indeed, companies spend a relatively small percentage of their turnover on research. European producers, as a consequence, are highly dependent on other industries for new technological developments (Euratex, 2004).

Subcontracting is a predominant practice in the industry and has fostered exchange as well as cooperation within the textiles and clothing chain in Europe. According to Nordås (2004), the Emilia-Romagna district in Italy is a typical example of prominent textile and clothing clusters in the world. Although subcontracting activities vary in the EU15, they represent an important part of EU competitiveness. They are highly concentrated in certain regions and provide employment and income in these areas. New member states (in particular Poland and Romania) and countries of the Mediterranean Rim (such as Tunisia or Morocco) benefit from this growing practice through Outward Processing Transactions (OPT). This system has allowed European manufacturers to delegate a portion of their production process abroad under lower tariff rates. However, January 1, 2005 made OPT no longer operative because trade restrictions in textiles and clothing have ended (Stengg, 2001).

2.3 Product Development and Production

Production in the textile and clothing sectors is classified according to quality. The high quality segment puts great emphasis on fashion, quality of material and workmanship, while the medium quality segment focuses more on the production of basic items with an acceptable level of quality. Ladies' suits and cardigans are known to represent these segments respectively. Meanwhile, the low quality segment produces more commodity-like products and competes solely on price. Men's underwear is a classic example of such category. Developing and least developed countries have, over the years, concentrated their production on the low and medium quality segments. Thanks to a combination of low wage costs, high-quality textile equipment and know-how imported from industrialized countries, they have become highly competitive in this area. The EU15, as a result, now specializes in high quality and innovative textile and clothing products to cope with these challenges (Fraiman, Singh, 2002).

Consumer tastes are ever-changing, so European producers have adopted quick response programs in their production systems to respond effectively and in time to the demands of the market (D'Ercole, 1993).

Generally, textile production is highly automated and capital-intensive. Labour costs in this sector amount roughly to 40 percent of cost of goods sold, while for clothing this is about 60 percent (Fraiman, Singh, 2002). Textile production today uses raw materials that are either natural and synthetic or a mixture of both. Some fabrics produced are basic and simple while others are more complex and advanced. Because orders for textile products are usually based on customer requirements, this segment in the T/C industry requires constant research and development. This very nature has allowed the EU15 to excel in textile manufacture as they are well equipped in know-how, technology and capital. The production of technical textiles is particularly interesting because the European T/C industry has assumed a pioneering role in this area and has remained one of Europe's most attractive markets (Euratex, 2004). In fact, some European countries who were previously more active in traditional textiles turned their focus on the production of technical textiles. Today, technical textiles make up almost 80 percent of textile production in Nordic countries and about 50 percent in Germany (Cordis, 2005). Clothing production, on the other hand, remains labour-intensive and includes activities such as procuring fabrics, preparing designs (i.e. samples and patterns), cutting fabrics, as well as sewing and finishing garments. The first two tasks are largely performed by European designers who often design around a fabric or design the fabric for a particular garment. Hence, there is intense collaboration between clothing and textile companies on fabric design and procurement (Fraiman, Singh, 2002).

There are normally two seasons in the clothing sector. The spring or summer collection is scheduled to arrive in stores at the beginning of January or February, while the fall or winter collection is expected sometime in August or September. Market specialists are in daily contact with store managers to discuss what sells and what doesn't. The information is then relayed to the manufacturer's army of designers who work about a year in advance, defining dominant themes and colours and putting together an initial collection; a collection which may resemble the latest couture creations. Most international companies have design and development centers for men, women and children lines. Designers generally work in these places, sketching by hand or in CAD to illustrate the design and associated specifications. From here, the sketches are sent to third party suppliers for sampling. Once the prototype is finalized, fabric procurement and production planning begin. Decisions concerning outsourcing or in-house manufacturing are based on expertise, relative cost and time sensitivity. Garments involving high fashion styling are produced in-house to ensure high standards of quality, while basics and knits are outsourced to third parties which are easily monitored for quality control. It is important to stay ahead of schedule, so commitments for in-house and outsourcing production begin 6 months prior to the expected store delivery. Distribution is highly centralized. For large companies, distribution facilities are strategically located near their manufacturing plants and function as logistics hubs where they receive, sort and stock their stores in the area. Hanging garments, in particular, are coded and sorted by style within the distribution center, while folded garments are sorted on a carousel according to destination. Trucks deliver merchandises within Europe while air transport is relied upon for destinations outside the continent. What is really important in clothing production is that European producers are able to regularly create and replenish small batches of new goods thus creating exciting anticipation from its customers (Fraiman, Singh, 2002).

2.4 Perspectives on the T/C Industry

The table below summarizes the strengths, weaknesses, opportunities and threats encountered by the European T/C industry today.

Table 2.2 A SWOT Analysis of the European T/C Industry

<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Tradition & expertise in textile & clothing • Quality and design • Short delivery times • Organisational flexibility • World leader in technology usage etc. • An effective production network disguised in industrial sectors & exchange of information • Enlargement increases EU's authority & influence in trade talks • Strong family firms with professional management 	<p><u>Opportunities</u></p> <ul style="list-style-type: none"> • Market access in certain important export markets • Increasing efficiency • Product diversification • Investment in people • Goodwill • Adding value through innovation, design and branding • Investments in technical textiles
<p><u>Weaknesses</u></p> <ul style="list-style-type: none"> • Low profitability in the clothing sector • Fragmentation of sector • High labour turnover in clothing manufacturing • Dependence on a few multiples (i.e. raw materials from China) • Growing shortage of qualified human resources (i.e. textile engineering) • R&D commitment is extremely low compared to other industries 	<p><u>Threats</u></p> <ul style="list-style-type: none"> • Growth of cheap imports from developing countries and within the EU • Sectoral decline in Western Europe, growth in Eastern Europe • Increased cost of labour, energy, and environmental compliance • Piracy or illegal copying of designs and brands

Source: Euratex (2004)

3 Theoretical Framework

3.1 The Theory of Product Cycle

Vernon (1966) is quoted as saying that until now there have been no adequate scientific tools to properly evaluate the changes in international trade and investment. He contends that while comparative advantage has been considerably helpful on this light, the doctrine only takes the analyst to a certain point of the investigative process. For this reason, he developed the theory of product cycle which puts more emphasis on the timing of innovation, the effects of scale economies, and the roles of ignorance and uncertainty in influencing trade patterns.

He begins the theory by assuming that all firms in advanced countries have access to the same information and technological know-how. Access to such knowledge, however, does not necessarily mean firms are poised to take advantage of generating new products. Vernon (1966) provides us with one obvious reason why this is so: not all entrepreneurs are aware of or responsive to all available opportunities in the market. As a result, the gathering of information forms an integral part of the decision-making process and ultimately affects its outcome. Often the relative ease of communication with the market helps entrepreneurs to discover new opportunities. Producers are more adept at spotting demand for new or changed products within existing markets than outsiders. This explains why geographical proximity is an important strategic factor in the development of a particular industry.

The centre point of the product cycle is the diffusion of new technology which occurs slowly enough to generate comparative advantage between countries. It starts with technologically advanced countries producing and selling new products in the domestic market. The product is exported where demand emerges from other countries of similar levels of income. A few wealthy individuals in poor countries may have a demand for the product as well. The product becomes more standardized as time passes allowing other countries to catch up and gain the advantage. Kuznets (1953) described this scenario more efficiently. To quote, *'A rapidly developing industry does not retain its vigorous growth forever but slackens and is overtaken by others whose period of rapid development is beginning. Within one country, we can observe a succession of different branches of activity in the vanguard of the country's economic development, and within each industry we can notice a conspicuous slackening in the rate of increase.'*²

Figure 3.1 below captures the essence of the product cycle theory. It shows time on the horizontal axis and sales volume on the vertical axis. As we can see, sales in the initial period are low because new products require some time to be introduced and accepted in the market. Total volume remains relatively modest throughout the first phase while sales maybe increasing. If the product introduction proves successful, rapid growth in volume and sales is evident in the second phase. When the product enters the maturity stage, the curve flattens out and may continue to level off or end in decline depending on whether the product is replaced or stays in the market. Product differentiation intensifies and a variety of products appears in the market as a result of specialization. Sooner or later, concerns about production costs will set in and when the threat of new competition intensifies, the developed country weighs the wisdom of setting up a new production facility abroad.

² S. Kuznets, *Economic Change* (New York, W. W. Norton and Co., 1953), p. 254

Vernon (1966) claims that if labour cost differences are large enough to offset transportation costs, production operations are moved overseas. Of course, these factors are irrelevant if the producer is already an international firm with production locations in several countries. Regardless, information of any kind comes with a price and it may be the case that entrepreneurs are not readily disposed to shoulder this expense. But as market demand gets more and more price-sensitive, the developed country finds it less advantageous to continue producing the product on its own. As a result, production operations are moved overseas, the developed country becomes a net importer of the good and turns to new activities. The succeeding sub-sections will give a more detailed account of the structural stages from the early phase to growth and maturity in the product cycle curve.

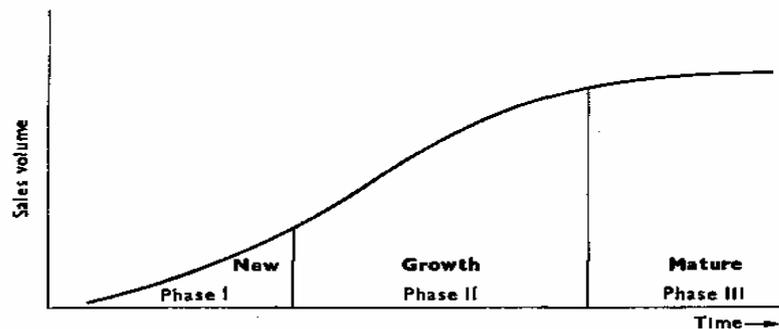


Figure 3.1 The Product Cycle Curve
 Source: Hirsch, S. (1967, p. 17)

3.2 The Early Phase

Hirsch (1967) describes the initial phase as labour intensive with high unit costs and an unstable production function. Product specifications at this stage are loose so alterations in the manufacturing process are random and sporadic. In addition, products are manufactured by individual units or small batches that they render the use of assembly-lines inconceivable. To make up for these irregularities, manufacturers limit their investments and keep operating expenses to a minimum. They do so by relying on specialist firms to perform a variety of manufacturing operations and services for them. Moreover, new products contain an extensive suite of scientific and engineering inputs. Familiarity with them and the ability of the firm to cope with problems are most important for their success and survival. In the early phase, methods and techniques are crude so trial and error is inevitable. Therefore scientists and engineers' wages occupy a large share of the company's payroll. Meanwhile, entry into the domestic market is steered by know-how. Pioneers are protected against encroachment through patent rights and special licenses. Hirsch (1967) asserts it is often advantageous to begin production immediately because manufacturers enjoy substantial monopoly profits. The lack of competition and viable substitutes is a perfect opportunity to exploit the market. Of course, this condition is only temporary until competition catches up with them and drives prices down to the level of production costs. Demand will highly depend on the product's availability, performance, and quality of substitutes.

3.3 The Growth Phase

Products that survive the first stage enter the growth phase where they become more standardized through mass production and mass distribution. Hirsch (1967) claims that as production runs accumulate, assembly-line methods are introduced with the use of special-purpose machineries. Physical capital replaces human capital allowing manufacturers to reduce unit costs. In anticipation of a growing market, a large number of firms are attracted to the industry. Venture capitalists act as advocates for budding businesses supplying funds and management support. The market meanwhile becomes overpopulated with suppliers causing demand to be more elastic. Firms as a result must search for new and innovative ways to attract customers while maintaining their share and competitive edge in the market. Creative marketing strategies and campaigns are hence critical in this process. Management, on the other hand, acts as the cornerstone of the product's success in the long run. Their ability to spot trends, weaknesses and strengths in the market is vital to be ahead of competition. Of course, every market is different. Hirsch (1967) warns that not all products go through the whole cycle simply because demand is too restricted. He says shipbuilding, for instance, is custom-made with a technology that is quite stable and so has reached the maturity stage.

3.4 The Maturity Phase

By now, the market is heavily saturated. When this happens, the product has entered the maturity phase and product specifications are completely standardized. Gone are the days of using traditional means in generating new products. In its place are sophisticated technologies which monitor and control advanced manufacturing processes in various operations. The product in the final phase has become capital-intensive generating economies of scale and greater efficiency (Hirsch 1967).

The total sales volume of the industry levels out or declines, depending on the availability of substitutes and consumer demand. Competition at this stage is intense because individual firms struggle to hold on to their market share. Although the total number of firms doesn't change much from year to year, there are a lot of firms who withdraw from the market. That is to say, some firms enter with a bang while others exit with a whimper. Demand is increasingly price-sensitive so prices have to be adjusted constantly. Customer expectations are quite stable including their buying habits. But they are well informed and selective about the products they buy so manufacturers have to step up to the challenge to keep sales up. Eventually, the stagnant demand and falling prices at home force manufacturers to look for opportunities abroad and to find ways to utilize their excess physical and managerial capacity. This decision is dependent on a number of factors, but in the end, markets at home are filled from production units set up overseas. The transplantation of the production process itself is easily managed since it is already stable and well-established. Similarly, the machinery is standardized, easily obtainable and maintainable so anybody can attend to it. If specialized skills and relevant practical experience are needed, workers are recruited from the local 'elite' or imported abroad (Hirsch, 1967).

3.5 Overall Characteristics of the Product Cycle

The product cycle theory does indeed proceed from the assumption that industries and individual products go through several changes over time. Manufacturers and engineers must be aware of them and must ensure that their products respond correspondingly to the product cycle. Each stage is unique and assumes different characteristics as illustrated in Table 3.1 below. However, in today's setting, competition is fierce. Understanding the market is important but at the same time manufacturers need to be responsive to business needs as well as customer needs if they are to thrive in their business ventures.

Table 3.1 Characteristics of the Product Cycle

Characteristics	Early	Growth	Mature
Technology	<ul style="list-style-type: none"> • Short runs • Rapidly changing techniques • Dependence on external economies 	<ul style="list-style-type: none"> • Mass production is gradually introduced • Variation in techniques still frequent 	<ul style="list-style-type: none"> • Long runs and stable process • Few innovations of importance
Capital Intensity	<ul style="list-style-type: none"> • Low 	<ul style="list-style-type: none"> • High due to high obsolescence rate 	<ul style="list-style-type: none"> • High due to large qty of specialized equipment
Industry Structure	<ul style="list-style-type: none"> • Entry is know-how determined • Numerous firms 	<ul style="list-style-type: none"> • Growing no. of firms • Many casualties & mergers • Integration grow 	<ul style="list-style-type: none"> • Mkt position & finan resources affect entry • No. of firms declining
Critical Human Inputs	<ul style="list-style-type: none"> • Scientific and engineering 	<ul style="list-style-type: none"> • Management 	<ul style="list-style-type: none"> • Unskilled & semiskilled labour
Demand Structure	<ul style="list-style-type: none"> • Seller's market • Performance & price of substitutes determine buyers' expectations 	<ul style="list-style-type: none"> • Producers face growing price-elasticity • Competition reduces prices • Product info spreading 	<ul style="list-style-type: none"> • Buyers' market • Info easily available

Source: Hirsch, S. (1967, p.23)

4 Empirical Analysis

4.1 Method

Vernon's (1966) vivid explanation of the product cycle theory led this paper to plot two countries' domestic production and external import as a percentage of domestic consumption over the period 1980-2000. This paper chose to analyse Sweden and Portugal because they devote their production to the different sectors of the textile and clothing industry. In addition, the two countries represent Europe's old and recent market economies respectively. This country-specific data from SourceOECD will hence show each country's (P/C) and (Me/C) which are derived by using the following equations,

$$C = P + M - E \quad \text{Equation 2.1}$$

$$Me = M - M_{EU15} \quad \text{Equation 2.2}$$

where (C) stands for consumption, (P) production, (M) imports, (E) exports, (Me) external imports and (M_{EU15}) imports from the EU15. While the majority of the elements in the equations is self-explanatory, this paper excluded EU15 intra-trade to find out the real value of imports from the rest of the world. Hence, (Me) is computed separately. Production values were obtained from the Industry Database which is based according to the International Standard Industrial Classification (ISIC), while imports and exports were taken from the Standard International Trade Classification (SITC) which is based on the Revision 2 System. Since both data sets are expressed in different currencies (the former in millions of euro and the latter in thousands of US dollars), a common denominator was established. At the introduction of the euro in 1999, it was traded at USD 1.18 (Wikipedia, 2006), so this exchange rate was applied to convert production values into thousands of US dollars. The exchange rate used in this computation is of no importance, however, it should be employed consistently in the period of study. 1999 is the base year simply because it was conveniently available.

This paper argues that the appearance of (P/C) and (Me/C) illustrates the growth and changing composition of industries and individual products. A mature industrial sector, for example, shows signs of slackening growth rates due to the degree of standardization that takes place as illustrated in Figure 3.1 of the previous section. This explains the developed country's high rate of imports compared with the low rate of domestic production shown in Figure 4.1 below. Another way of dealing with the figure is by looking at the developed country's self-sufficiency in textile and clothing production. This paper asserts that if domestic production is equal or more than 100 percent, the country in question is self-sufficient. If it is less than 100 percent, the developed country imports the good from developing countries. To summarize:

If $P/C \geq 100\%$ = a country is self-sufficient

$P/C < 100\%$ = a country is a net importer of the good

Developing countries, for its part, would have a rising (P/C) while (Me/C) decreases rapidly as illustrated on the right side corner of Figure 4.1. This outcome continues for a time until developing countries catch up in the technology hype and are able to upgrade their textile and clothing sectors in the process. Meanwhile, this generates employment, promotes economic growth, and helps balance their trade accounts.

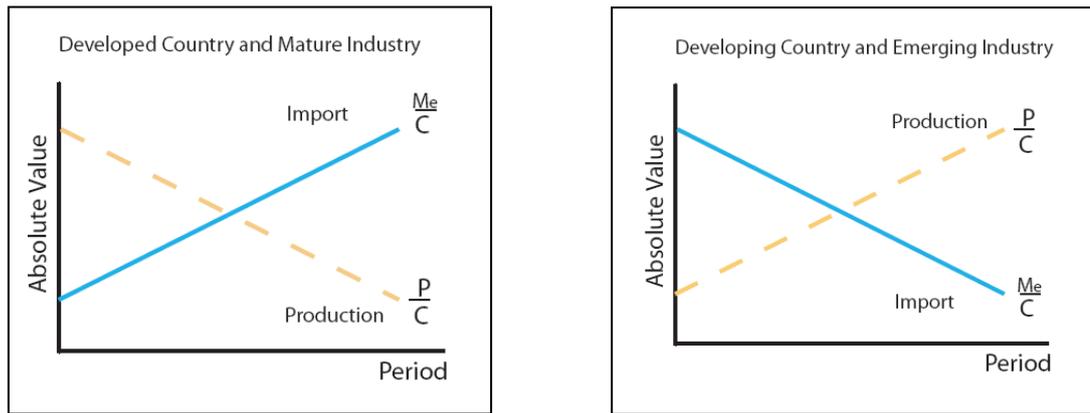


Figure 4.1 Domestic Production and External Import as a Percentage of Domestic Consumption
 Source: Prof. Börje Johansson

4.2 Textiles

Sweden's textile and clothing industry is geographically concentrated in the Western part of the country, specifically in the municipalities of Borås, Mark, Svenljunga, Tranemo and Ulriceham. The composition of trade has varied over the years. In fact, there was a time that its very existence was threatened due to the cotton crisis in the United States. But because of its adaptability and surviving skills as well as its buoyant contact with the market, the Swedish textile and clothing industry flourished. Nowadays, it faces the challenges of increased internationalisation of both trade and production (Dahlin-Ros, 2002). The EU has become an important trading partner for Sweden, especially after its enlargement in May 1, 2004. This explains the fact that Sweden exports approximately 73 percent of its textile and clothing goods to EU25, while imports amount yearly to 58 percent. Like EU, China is Sweden's biggest supplier of textiles and clothing. Total imports from China in 2004 were 13 percent while total exports to the country equalled only to 0.8 percent (Tekoindustrierna, 2006).

Today, the Swedish T/C industry employs around 14,000 people and specializes in the production of technical textiles. In fact, the country is one of the EU15 member states who shifted production from traditional to technical textiles. This is not surprising considering that technical textiles is an expanding sector in Sweden. It exhibits the characteristics of a mature industry because the production process is already highly automated and uses machineries that are technologically-advanced even for developing countries. Similarly, demand is based on customer requirements so innovation remains a vital component. The only difference is that it will take time for developing countries to capture this segment as it demands the abundance of capital, know-how and technology. Because Sweden is equipped with these things and the fact that the production of technical textiles relies less on low wage comparative advantages, this very nature has given Sweden a strong competitive position in the international market and has enabled the country to supply top of the line products around the world from geotextiles (fabrics of airbags and the automotive industry), felts and fabrics for use in paper and pulp production to hygiene articles, parachutes, filters for air and liquid purification and sails (Tekoindustrierna, 2006). Sweden, as a result, is self-sufficient in the manufacture of technical textiles as illustrated in Figure 4.2 below. It is clear that Sweden is way ahead of Portugal since (Me/C) averages only to around 0.2 percent while the latter has 6.18 percent.

Changes are nevertheless under way in the Portuguese technical textile sector as it jumps on the development bandwagon. Portugal's (P/C) rises progressively while (Me/C) drops off gradually. This goes to show that the country is catching up in the technology hype while continuously improving this segment of its T/C industry.

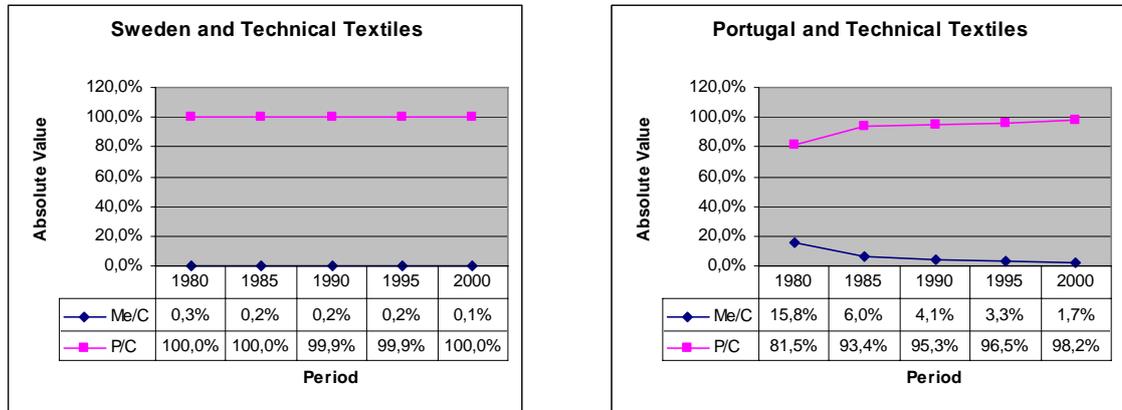


Figure 4.2 Domestic Production and External Import as a Percentage of Domestic Consumption
Source: SourceOECD

Indeed, when Portugal joined the European Union in 1986, the Portuguese textile and clothing industry underwent a huge transformation process focusing on production, commercialisation, education and training, fashion, design, quality and service. The effects of transformation were slow but progressive thereby allowing Portugal to keep up with the pace of other developed nations (Robalo, 2004). Portugal today has a well-established textile industrial base in the north. Because the country has a cheap labour platform and it is located within close geographical proximity to European markets, Portugal is a perfect sub-contracting partner for many West European nations. Similarly, the home textiles industry is assumed to be a stable market due to its highly-automated and capital intensive manufacturing. The nature of the industry provided the country an opportunity to gain an indisputable position in the production of home textiles. Portugal these days is the second supplier of bedclothes worldwide with export destinations such as the US, UK, France, Germany, Norway, Netherlands and Sweden (Portugal Offer, 2006).

Majority of Portugal's trading partners have large economies so as a result, exports in home textiles have grown significantly from €463.88 million in 1990 to €578.61 million in 1995 and €823.02 million in 2000 (Portugal Offer, 2006). This does not mean however that Portugal is immune from competition. On the contrary, Portugal's (P/C) in home textiles has declined precipitously during the late 1980s as shown in Figure 4.3 below. The reason comes purely from the fact that the country is highly dependent on passive subcontracting which often represents the production of lower quality products. When accessibility to other markets became possible, retailers and branded marketers turned to East and South Asia for cheaper production sources (Osorio, Leitao, 2001). That is why the European Apparel and Textile Organisation warned countries like Portugal to undergo severe modernisation and restructuring because their cheap labour advantage may not be enough to guarantee their future (Lakin, 2003). Since then, the country has been trying to recover from this relapse and it is now onboard the emerging market bandwagon as illustrated by its increasing (P/C) and (Me/C) for the period 1990-2000.

What could probably explain the development of Swedish imports in home textiles is the Swedish Parliament's response to a government proposal in December 16, 1988 to abolish all quantitative import restrictions on textile and clothing. The deregulation process began in July 31, 1991 but its full effect was not felt until 1994 (Tekoindustrierna, 2006). As depicted in Figure 4.3, imports rose sharply in 1995 and continued to ascend abruptly in 2000. Part of the reason was the immediate surge in imports from China but this was quickly halted when Sweden joined the European Union in 1995. Specific safeguard measures were already employed by the European Union then, so imports from China were cut by 50 percent (Pearl Academy, 2006). Sweden and other member states at the same time began to import more from Central and East European nations (Textile Importers' Association in Sweden, 2006). Thus, Sweden's (Me/C) in home textiles experienced a powerful upswing as can be expected from a mature industry at work. The country, of course, maintains a small degree of home textile production within its borders hence the great fluctuations in (P/C).

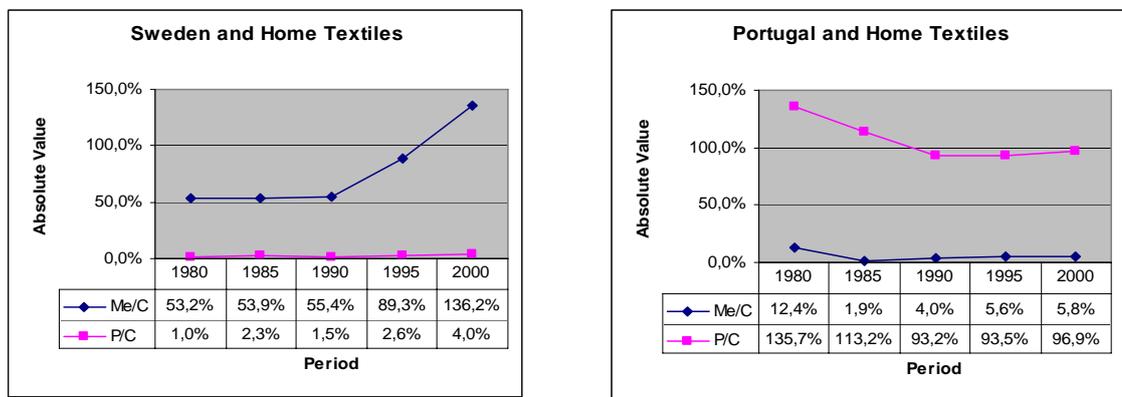


Figure 4.3 Domestic Production and External Import as a Percentage of Domestic Consumption
 Source: SourceOECD

4.3 Clothing

The International Labour Organisation (ILO, 2000) claims that wages in the T/C industry differ depending on the sector one works in and where they are geographically located. Wages in the textile sector has always been higher than clothing because it demands higher skills in managing technologically-advanced machineries. During the period 1980-1998, Portugal and Sweden had an hourly labour cost of \$4.51 and \$18 respectively in textile production. Clothing manufacture, meanwhile, had an hourly wage of \$5.50 in Portugal and \$17.00 in Sweden³. The changes in relative labour costs clearly affect European T/C producers particularly in labour-intensive sectors. Given the labour intensive quality of clothing manufacture, European producers found production outsourcing the best route to solving this dilemma. Nowadays, they focus on quality, fashion and design to gain competitive edge in this market. What is happening here, particularly in the enlarged EU, is that majority of the downstream operations are done by production partners in other countries. This is a very sensible business strategy considering that abroad, labour is cheaper (Euratex, 2004).

³ Developing countries in Asia during the period 1980-1998 had an average of \$3.50 in textiles and \$2.78 in clothing.

Of course, sourcing decisions are also based on materials quality and availability, skills requirements and worker productivity, transportation time and cost, political and foreign exchange risk as well as regulatory issues and social responsibility concerns (Fraiman, Singh, 2002). The liberalisation of world trade has allowed subcontracting and outsourcing activities to low-wage countries possible. Swedish fashion and apparel companies like H&M, Lindex and Kappahl trawl the world to realize such opportunities. They get the best value possible and find the most reliable sources for both raw materials and finished goods (The Pearl Academy of Fashion, 2004). For this reason, (Me/C) in the country are soaring while (P/C) follows a reversal trend as outlined in Figure 4.4 below. This goes to show that the Swedish clothing sector is indeed the epitome of a mature industry based on the discussions so far. Today, it is highly trend sensitive and continues to be receptive in designer clothing as well as sports and casual wear. The youth, most particularly, is strongly influenced by the latest fashion trends from the US and UK. They dress homogeneously and are less impervious to price changes than their Nordic neighbours (The Pearl Academy of Fashion, 2004).

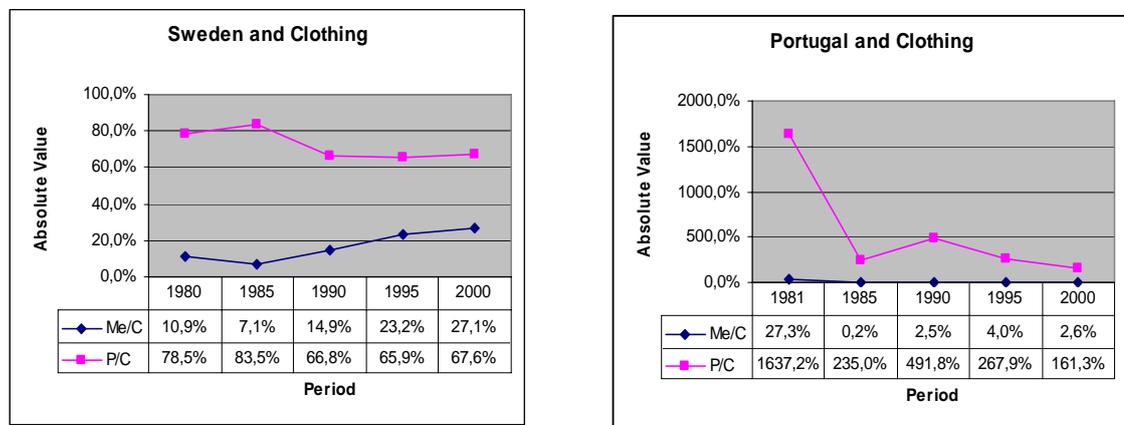


Figure 4.4 Domestic Production and External Import as a Percentage of Domestic Consumption
 Source: SourceOECD

On the Portugal front, the year 1980 showed statistical errors so this paper decided to analyze the year 1981 in its place.

Portugal's economy has always relied heavily on the clothing sector. Therefore the country is one of the world's largest manufacturer and net exporter of clothing. As is evident in Figure 4.4, Portugal's (P/C) soared in the early 1980s and dropped steadily over the years. Yet, it managed to be self-sufficient in the production of clothing. This is no wonder considering that Portugal produces and consumes a substantial majority of clothing on its own from men, women and baby wear. Indeed, Portugal's membership in the European Union contributed to increased trade benefits in the country. Its impressive export network has moved the production of internationally known jeans brands (in particular Lee, Levis and Wrangler) and designer labels (such as Donna Karen, Gant and Lacoste) in the country through joint ventures, special licenses and franchises (PRGMEA, 2006). Large countries like France, Spain, Italy and Germany absorb majority of its clothing production today. However, the shifts in global production have greatly affected the Portuguese clothing sector as can be seen in the figure. The country dealt its problems by modernising its companies, developing new products and applications as well as embracing the challenges posed by innovation, creativity and marketing. After considerable efforts, Portugal managed to retain its market position and remained competitive in the clothing sector (Fashion Net, 2006).

At the other end of the spectrum, Portugal's (Me/C) in clothing is very minimal unlike Sweden's. What is interesting is that Portugal has always viewed imports as a way to introduce better quality standards and more effective marketing methods in the country. Perhaps this is why the importation of casual and sportswear apparel in Portugal is not strictly regulated. Customs duties are imposed by the government at times, but these are easily eliminated by franchising to local companies or by joint ventures with local manufacturers. In fact, Portuguese importers prefer to import directly from manufacturers than through export companies because it saves them all the trouble and requires less paperwork. The US in particular takes advantage of this opportunity. Because baseball, football and basketball are quite popular in Portugal, the import climate for American sports wear is excellent. Today, Portugal is a gateway for foreign brands to enter other markets (PRGMEA, 2006).

4.4 Summary

It is clear that rapid innovation and trade liberalisation have made the transplantation of European textiles and clothing industry to other parts of the world possible. In the words of Hirsch (1967), *'strict product specifications, the availability of machinery which operates at a predetermined sequence and tolerance, and above all, the suitability of unskilled labour to the manufacturing process combine thus to facilitate the early introduction of the textile industry into industrializing economies.'*⁴ As a result, countries in the EU15 like Sweden and Portugal can focus on their strengths and operate on special niches focusing on customer value, function, quality and design.

⁴ Hirsch, S., (1967), *Location of Industry and International Competitiveness* (Oxford: Oxford University Press), p. 25.

5 Conclusion and Recommendations

5.1 Conclusion

The purpose of this thesis is to analyze the location dynamics of textile and clothing industries in the EU15. Specifically, it attempts to answer the following questions:

1. What are the factors that contribute to the relocation of European production to low-wage countries?
2. Who are hurt by these changes? Who gain?
3. How does the European textile and clothing industry cope with these challenges?

Generally, in the textile and clothing sectors, labour cost is an extremely important part of total production cost. This alone makes the establishment of the industry in developing countries appropriate, as they have relatively low wages than the more advanced nations. Of course, other important factors are weighed by firms before coming to relocation decisions. These factors include raw materials quality and availability, skills requirements and worker productivity, transportation time and cost, political and foreign exchange risk, regulatory issues as well as social responsibility concerns.

The cross-country comparison between Sweden and Portugal shows that these factors were highly considered and enabled them to work and build on their strengths to adjust to market changes. In fact, figures 4.2, 4.3, and 4.4 support this paper's hypothesis that as an industry matures and competition intensifies, the developed country moves production operations overseas and becomes a net importer of the good. In the end, this country turns to new and exciting activities and plays a pioneering role in this area. This description relates particularly to Sweden which is now self-sufficient in the production of technical textiles and imports majority of its home and clothing supplies from abroad. Portugal, in the meantime, takes advantage of its cheap labour platform and concentrates on the production of home textiles and clothing. The country is already showing signs of catching up with the technical textiles segment and it is only a matter of time until it does. In retrospect, the relocation of European production to low-wage countries would not have been possible without the help of trade liberalisation and European enlargement. These events surely sped up the relocation process and fostered increased manufacture in Central and Eastern European nations. As a result, giant T/C corporations of today can now get the best value possible for their products and find the most reliable sources for both raw materials and finished goods.

The relocation process did not only bring winners to the European market, but it brought losers as well. The liberalisation of world trade and the entrance of international competition from non-EU countries, particularly developing countries with lower labour costs, pushed many SMEs into bankruptcy. Mergers and acquisitions have become a daily occurrence in the European T/C industry and the size of these deals are ever growing (Bharat Textile, 2006). Capital-poor countries have largely benefited from the search of cheaper production sites because it has played a major role in job creation and has allowed the upgrading of their textile and clothing sectors possible through technology transfer⁵. European consumers, for its part, have now a wide array of products to choose from; all of which are different and unique in their own right.

⁵ Technology transfer includes know-how, experience and equipment.

The challenges that European producers encountered over the past years gave them the need to refocus and re-strategize their position in the T/C industry. Therefore some countries in the EU15 shifted their production from traditional to technical textiles. Sweden was one of the countries that took advantage of this opportunity and used its abundance of capital, knowledge and technology by specializing in the design and production of technical textiles. Other countries like Portugal have chosen to improve the key sectors where they have a great advantage, instead of seeking to conquer new markets. This has made members of the EU15 thrive in special niches and become prominent worldwide. That is precisely why Europe has products like Dolce Gabbana, Gucci, Versace and Prada because they are all famous for their style, design and quality compared to the mass production of goods in developing countries, which are cheaper but less in quality. The strategy has streamlined their production operations, thus making the EU15 the first in textile exports and the third in clothing (Euratex, 2004). Of course, restructuring and modernisation efforts are a continuing process and Europe's T/C industry is now more than ever in need of a broad economic base to finance activities in research and development so as to produce more innovative and high-quality products (Stengg, 2001). Who stands to lose or gain in the new trading regime may depend on Europe's ability to integrate in the world economy.

5.2 Recommendations

Relatively few studies have examined the extent, motivation and performance implications of today's communication and media networks in the T/C industry, so this essay recommends this as a future research topic. In addition, it would be interesting to study the textile and clothing sector in the EU25 as it is currently facing unprecedented challenges in the abolition of quantitative restrictions, the upward trend of the euro against the dollar and the integration of the Euro-Mediterranean zone. And lastly, China's growing textile and clothing exports in the world and how they cut deeply into the US and European market are also worth looking at.

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Appendices

Appendix A. Product Classification Based on the Standard International Trade Classification (SITC Revision 2) System

Textiles		Clothing
<u>Product 26</u> Textile Fibres (except wool tops) and their wastes which includes:	<u>Product 65</u> Textile yarn, fabrics, made-up articles, related products	<u>Product 84</u> Articles of apparel and clothing accessories
1. Silk	1. Textile yarn	1. Outer garments, men's, of textile fabrics
2. Cotton	2. Cotton fabrics, woven	2. Outer garments, women's, of textile fabrics
3. Jute & other textile bast fibres, nes, raw/processed	3. Fabrics, woven, of man-made fibres	3. Under garments of textile fabrics
4. Vegetable textile fibres and waste of such fibres	4. Textile fabrics, woven, other than cotton/man-made fibre	4. Outer garments and other articles, knitted
5. Synthetic fibres suitable for spinning	5. Knitted or crocheted fabrics	5. Under garments, knitted or crocheted
6. Other man-made fibres suitable for spinning and waste	6. Tulle, lace, embroidery, ribbons & other small wares	6. Clothing accessories of textile fabrics
7. Wool and other animal hair (excluding wool tops)	7. Special textile fabrics and related products	7. Articles of apparel and clothing accessories, no textile
8. Old clothing and other old textile articles; rags	8. Made-up articles, wholly or chiefly of textile materials	
	9. Floor coverings, etc.	

Source: SourceOECD

Appendix B. Fields of Application for Technical Textiles

Sectors	Examples	Markets
Earthworks	Linings, netting, insulation, artificial grass ("geotextiles")	Construction companies for roads, water engineering, soil stabilisation, tunnels and other earthworks
Construction	Insulation and roofing materials ("building textiles")	Building firms, architects
Agriculture	Sun protection for greenhouses, fishing nets ("agrotextiles")	Farming, horticulture and fishing
Transport	Car mats and lining, airbags, fire resistant seat covers and carpets, safety belts	Producers of cars, aeroplanes, boats
Medical and Health Care	Bandages, medical corsetry ("medical textiles")	Hospitals, nursing homes, households
Protection	Safety nets, ribbons and tapes, fire resistant clothing ("protecting textiles")	Industry, public procurement, households
Packaging	Twine and cordage, sacks and bags, tarpaulins ("packing textiles")	Industry, distribution, households
Military and Public Services	Fire service equipment, bullet-proof jackets, army tents, parachutes, extinguishing blankets, tubes	Military/security, forestry, offshore oil industry
Specialised Clothing	Sports, skiing and leisure	Active sports, mountaineering, households
Communications	Optical fibres, image conductor cables	Communication sector
Industry	Filters, drive and conveyer belts, abrasive belts	Engineering, machinery, chemicals, plastics, mining, energy, etc.
Furnishing	Interlaid scrim, braiding, shower curtains, umbrellas, parasols, deck chairs, textile wall papers	Decoration firms, households

Source: http://europa.eu.int/comm/enterprise/textile/techn_text.htm

Appendix C. Swedish Statistics

Legend:

<i>C</i>	=	<i>Consumption</i>
<i>P</i>	=	<i>Production</i>
<i>M</i>	=	<i>Imports</i>
<i>E</i>	=	<i>Exports</i>
<i>Me</i>	=	<i>External Imports</i>
<i>M_{EU15}</i>	=	<i>Imports from the EU15</i>

Technical Textiles

Period	Me/C	P/C	C	P	M	E	M _{EU15}	Me
1980	0.3%	100.0%	9319529	9322000	51404	53875	24829	26575
1985	0.2%	100.0%	12834930	12830140	47118	42328	25759	21359
1990	0.2%	99.9%	14516431	14505740	63997	53306	33252	30745
1995	0.2%	99.9%	13820242	13811900	69900	61557	41980	27919
2000	0.1%	100.0%	13907856	13909840	47402	49386	27355	20047

Source: Source OECD

Home Textiles

Period	Me/C	P/C	C	P	M	E	M _{EU15}	Me
1980	53.2%	1.0%	561503	5494	977980	421971	679141	298839
1985	53.9%	2.3%	361999	8367	738375	384743	543280	195095
1990	55.4%	1.5%	680012	10238	1292801	623027	915987	376814
1995	89.3%	2.6%	402881	10421	1155931	763470	796184	359747
2000	136.2%	4.0%	271011	10736	1000764	740489	631521	369243

Source: Source OECD

Clothing

Period	Me/C	P/C	C	P	M	E	M _{EU15}	Me
1980	10.9%	78.5%	4878835	3829100	1344306	294571	812293	532013
1985	7.1%	83.5%	5345819	4461580	1125023	240784	744384	380639
1990	14.9%	66.8%	6391450	4266880	2514164	389594	1562225	951939
1995	23.2%	65.9%	5143556	3391320	2127068	374832	932742	1194326
2000	27.1%	67.6%	4698224	3174200	2113569	589545	839701	1273868

Source: Source OECD

Appendix D. Portuguese Statistics

Legend:

<i>C</i>	=	<i>Consumption</i>
<i>P</i>	=	<i>Production</i>
<i>M</i>	=	<i>Imports</i>
<i>E</i>	=	<i>Exports</i>
<i>Me</i>	=	<i>External Imports</i>
<i>M_{EU15}</i>	=	<i>Imports from the EU15</i>

Technical Textiles

Period	Me/C	P/C	C	P	M	E	M _{EU15}	Me
1980	15,8%	81,5%	1987779	1620140	374729	7090	61038	313691
1985	6,0%	93,4%	5223699	4879300	359492	15093	47941	311551
1990	4,1%	95,3%	9200892	8766220	467129	32456	93938	373190
1995	3,3%	96,5%	10567837	10192840	441800	66803	91820	349980
2000	1,7%	98,2%	11436624	11226520	265465	55361	68651	196814

Source: Source OECD

Home Textiles

Period	Me/C	P/C	C	P	M	E	M _{EU15}	Me
1980	12,4%	135,7%	814211	1104480	315333	605602	214478	100855
1985	1,9%	113,2%	2780227	3145880	297535	663188	243897	53638
1990	4,0%	93,2%	5293261	4932400	1693823	1332962	1482630	211193
1995	5,6%	93,5%	5858101	5479920	2010728	1632547	1684994	325734
2000	5,8%	96,9%	6563365	6360200	1891255	1688090	1510834	380421

Source: Source OECD

Clothing

Period	Me/C	P/C	C	P	M	E	M _{EU15}	Me
1981	27,3%	1637,2%	35245	577020	21972	563747	12364	9608
1985	0,2%	235,0%	737131	1732240	18396	1013505	16853	1543
1990	2,5%	491,8%	779489	3833820	436130	3490461	416747	19383
1995	4,0%	267,9%	1759335	4712920	851399	3804984	781356	70042
2000	2,6%	161,3%	3015432	4865140	976625	2826333	899461	77164

Source: Source OECD