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Germany's textile complex under the MFA: Making it under protection and going international

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Germany's Textile Complex under the MFA
- Making it under Protection and Going International -

by

Dean Spinanger
Laura Piatti

September 1994



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**Germany's Textile Complex under the MFA
- Making it under Protection and Going International -**

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Germany's Textile Complex under the MFA - Making it under Protection and Going International -*

1. Introduction and Overview

Germany's textile and clothing (T+C) complex¹ was from the inception of the MFA until the mid 80's second to none in export markets. Replaced then by Italy (see Table 1) it now - with China in the lead - has slipped to third place. Despite these shifts in rankings, Germany's share today is higher than it was in the mid 80's or twenty years earlier.² What changed even more profoundly behind this foreign trade performance, however, was the composition and relative importance of the two industries in Germany [see e.g. GATT 1985, pp. 58-60]. And now, after decades of consolidation and restructuring, the German T+C industries seem to be facing a new horizon of opportunities at the beginning of the 90's, even if definite signs of structural weaknesses cannot be overlooked.³ Nonetheless, this is not to state that foreign challenges have subsided, but rather that the locational potential becoming ever more evident and accessible since the opening up of Eastern Europe,⁴ the creation of the European Economic Space (EES) and the realization of the EC's common internal market can be seen as working all the more to the advantage of an economy the more highly internationalized it is. Specifically, in an economy where manufacturing companies have actively sought to remain competitive by extending their activities beyond national borders, the ability to

* This paper was initially in connection with an OECD project on "Trade Policy, Productivity and Foreign Investment: The Textile and Clothing Industry in Europe" in 1992. It was entitled "Redeployment of Production, Trade Protection and the Global Firm's Strategy: The Case of Germany" and coauthored with Laura Piatti. Since it is still relevant the paper has been updated and revised.

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1 The T+C complex is sometimes referred to as the rag trade in the literature. Reference to Germany's T+C complex applies - unless otherwise stated - only to West Germany, that is to what used to be the Federal Republic of Germany before unification in October 1990.

2 In 1965 Germany (8.3 percent) and Italy (10.1 percent) accounted for 18.4 percent of the world's T+C trade; in 1990 their share was 18.6 percent (D: 9.1 percent; I: 9.5 percent).

3 See, for instance, Viereck [1992] for the textile industry and BBI [1992, p. 12] for the clothing industry.

4 Eastern Europe refers to all countries behind what was formerly called the "iron curtain".

perceive and come to grips with the economic ramifications of the above-evolving constellation is all the greater.

Based on the supposition that the German economy generally fits into this picture of a relatively open economy, reacting to external pressures and shocks,⁵ the specific question posed in this section concerns the thrust and structure of policies followed by the German T+C complex (primarily) over the past decade, given higher than average protection for T+C industries⁶ - as a result of the MFA - and increased competition from abroad.⁷ It begins by presenting a brief overview of industry trends prior to and during this time period, before describing the state of the industry as it stands at the beginning of the 90's. Drawing on hypothesized reaction patterns [see Navaretti, 1992] it then analyses the policies of a select sample of 18 surveyed T+C companies (see appendix for overview of companies and set-up of survey) in order to shed light on the effectiveness of their strategies given the MFA. In concluding, the paper focuses on the possible impact of the evolving changes in the European economic landscape, attempting to relate these to professed aims at the microlevel or rather the overall state of the industry.

2. Germany's T+C Complex: Putting it into a Manufacturing Perspective

Accounting for about 10 percent of Germany's manufacturing employment in 1970⁸ the T+C complex ranked as the third most important sector behind the machinery and electrotechnical industries (both around 13 percent).⁹ In terms of output (i.e. value added), however, the T+C industries - given their relatively labor-intensive production processes - produced a considerably lower share of total manufacturing output (6 percent and 7th largest sector). Likewise, the degree of outward orientation was well below the industry average (18 percent), with exports accounting for 14 percent of textile sales and slightly more than 5

5 See Weiss et al. [1988, p. 151] in concluding a study on Germany's trade policies note that "... within the EC, West Germany could defend its free trade interests and free trade ideology ..., shifting the balance in the Community and the world as a whole towards freer trade".

6 In the mid 70's (80's) effective rates of assistance in the clothing industry were estimated to be 86.5 percent (73.8 percent) and 57.4 percent (50.4 percent) in the textile industry. The correspondent rates in manufacturing were 23.0 (22.1). In both years, clothing ranked second and textiles fourth out of 31 industries [see Weiss et al., 1988, p. 26].

7 In 1980 (1990) import penetration ratios amounted to roughly 32 percent (52 percent) in the clothing industry and 37 percent (58 percent) in the textile industry.

8 All numbers in this paragraph are based on Görzig et al. [1993].

9 It might be noted that the T+C complex even employed about 25 percent more than the automobile industry in 1970.

percent of clothing sales. In light of foreign direct investment (FDI) having been quite negligible [see Breitenacher et al., 1986, pp. 59-60], the German T+C complex some twenty years ago can be best characterized as almost entirely drawing on the resource endowment in the domestic or rather surrounding European economy. And it was in particular the European connections which spawned the beginnings of stronger internationalization of production, be it in terms of FDI for the textile industry or offshore processing trade (OPT) for the clothing industry.¹⁰

While this picture has changed markedly over the last two decades - as will be shown - what changed little was the size structure of the industries. That is, the German T+C industry was and still is composed primarily of small and medium sized firms, with very few large companies (Table 2). Whereas in the manufacturing industry about 50 percent of the employees work in establishments with more than 500 employees, the respective figure for clothing is around 10 percent and for textile around 30 percent. And in the small/medium-sized establishments almost 60 percent of the total turnover of the industry originates.

Such a structure incorporates the potential for German companies to be flexible, that is in the sense that they can adapt their production and organization quickly and effectively to market changes. This assumes, of course, that entrepreneurial insights into the driving forces behind the evolving (global) changes are not a scarce factor of production in small enterprises. Smallness, on the other hand, can also imply a lack of financial means to restructure in light of changing parameters. This is obviously all the more the case the greater the shift to more capital-intensive methods of production is.

Needless to say, in the last two decades the textile and clothing industry in Germany has undergone significant structural changes, as a result of increased imports and international competition, technological innovations and changes in the demand patterns, be they due to new products or changes in styles. This adjustment process induced a sharp decline in the number of production units and employees (Table 2). It was thereby the ever-more capital-intensive textile industry which exhibited the largest decline, both in terms of establishments as well as employment. Generally speaking, no other nonagricultural industries (except shipbuilding and leather manufacturing) experienced such a massive percentage reduction over the period 1970-1992. As a matter of fact in absolute terms the reduction in employment in the T+C complex accounted for almost half of the decrease in total manufacturing employment in this time period. Since 1960, the trends for the sector were characterized by

¹⁰ As Breitenacher et al. [1986, p. 59-60] note most of the earlier FDI ventures were in high-income European countries to serve European customers. The clothing industry, on the other hand, tapped low cost locations in Europe via OPT to service the German market. Roughly 15 percent of clothing imports in 1970 were based on OPT trade [see Fels, Schmidt, 1981, pp. 185-186]. See also Gass, Viereck [1983, pp. 17-18].

job losses at an annual rate of -2.9 percent for clothing, and -3.3 percent for textiles. The textile industry actually began restructuring earlier than the clothing industry, i.e. already in the 60's, but much stronger in the 70's. In the second half of the 80's (i.e. 85-91) the rate of job losses for clothing remained roughly in line with the 30 year average, while it was one third lower for textiles. Most recently, however, employment in both industries dropped by rates more the double long-run averages.

The structural adjustment process described above was reflected in a differentiated manner across the federal states ("Länder"). As can be seen in Table 3, the relatively high concentration in southern Germany - i.e. Bavaria and Baden-Württemberg - at the beginning of the 60's tended to increase.¹¹ In the case of the textile industry, the above two states (among the fastest growing in this time period) increased their share of employment to over 50 percent (versus 40 percent in manufacturing) of total textile industry employment.¹² The dominant position of North-Rhine Westphalia was almost reduced by the same degree (7 percentage points) as this industrial heartland's share in West Germany's manufacturing industry [in connection with North-Rhine Westphalia see Buchholz-Will et al., 1985]. As concerns the clothing industry, the relative shift to Bavaria was considerably larger than in the case of textiles, as it increased its share by 40 percent and together with Baden-Württemberg account for 50 percent of clothing employment in 1990.¹³ While there is an important symbiotic relationship between textile machinery manufacturers and textile/clothing producers which helps explain the increased concentration in the South, also of key importance is the fact that the essential degree of labor flexibility prevails in the villages scattered throughout the countryside in the South. Since greater flexibility implies lower effective labor/capital costs, the concentration in Southern Germany¹⁴ is - similar to the underground economy in Italy [see Navaretti, Perosino, 1992] - a partial ersatz for seeking lower cost production locations beyond national borders.

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- 11 It should be noted that under the industrial classification system the textile industry includes knitting.
- 12 West Berlin's far lower employment decrease can be best explained by subsidies offered for capital or investment to move to or expand in this isolated (exclave) location - at least until 1991. Given the capital-intensive nature of textile production, these investments became attractive despite the high wage costs in an urban area. This assumption made 1992 has been fully verified: the removal of such subsidies caused Wiebe, a company surveyed and considered to be a success story, to apply for bankruptcy [Frankfurter Allgemeine Zeitung, 8/8/94, p. 11]. Such an impact could not be expected for the extremely labor-intensive clothing industry, for which Berlin's employment revealed the largest percentage drop.
- 13 The concentration in the knitting industry is far greater - Baden-Württemberg accounted for 56 percent of all employees in 1984 and Bavaria 23 percent; for an analysis of the knitting industry see Gesamtmasche [1985].
- 14 One impact of this concentration can be seen in the decreasing establishment size over the period 1960-92 for both the textile (-20 percent) and clothing (-30 percent) industries, while the size of establishments in the manufacturing industry as a whole remained relatively constant.

3. Key Economic Indicators: Trends

Since the early 1970s, production has generally declined in the textile and clothing industries in Germany. However, whereas the clothing industry already peaked in 1972 and by 1990 lay 50 percent under that level, the textile industry, which bottomed out in the early 80's (21 percent below its 1972 peak), expanded production by about 8 percent to 1990 (see Table 4) only to slide back to its earlier level by 1992. Aside from not keeping pace with the rate of growth of manufacturing output in the 1970-1992 period and thus reducing their shares in MVA by almost 65 percent to 0.93 percent (clothing) and by over 40 percent to 1.90 percent (textile), only the far smaller shipbuilding and leather industries (-3.5 percent) had larger annual rates of decrease than the clothing industry (-3.1 percent).

Textiles. In 1992 Germany produced about 36 percent of total EC man made fibre output (Italy: 24 percent). Thereby German manufacturers have concentrated on manufacturing high-quality fibres and products aimed at industrial applications for textiles (about 20 percent in 1990 and growing rapidly; see e.g. Schild [1992]). The industry also has captured a considerable share of total EC cotton yarn production (almost 20 percent), and accounts for about 22 percent of industrial cotton fibre consumption in the European Community. As far as concerns woven fabrics, the production of synthetic filament, cotton fabrics and woven silk, all have shown substantial gains over the last decade in volume terms, even if in (real) value terms their share has been decreasing. While overall, the German textile sector - vis-à-vis manufacturing - has registered some positive developments in recent years (see indicators, Table 5), particularly the relative improvement in investment trends and lower rates of increase in unit labor costs, most recently excess capacities and strong foreign competition have caused serious problems.

Knitting. The knitting sector has experienced the most severe setback, with sales increasing just marginally (in nominal terms - see Table 5) and falling (in real terms) by almost one fifth since 1980. The number of enterprises were even almost halved and employment fell almost as much. Major declines were registered (in volume terms) for outerwear, underwear and socks. While one of the reasons behind this development can be traced to shifts in consumer preferences towards woven goods, in many areas it was simply that production costs were too high to compete with imports [see Gesamtmache, 1985] Only in those areas where high quality, high-fashion knitting was required or up-market trends in hosiery could be captured was it possible to increase production. With import penetration ratios increasing from 55 percent to 75 percent in value terms over the 10 years, in volume terms they are often over 90 percent.

Clothing. In order to react to increasing competition from low-cost imports in the domestic market, clothing manufacturers have concentrated on higher quality, higher priced and more fashion-oriented clothing products. This is reflected in a noticeably greater increase in the

value of turnover than in volume terms and likewise in above average growth rates of exports to other industrialized countries. While the industry did not hesitate to adopt state-of-the-art technology wherever possible (that is, computer-assisted design, pattern making and cutting systems) and increase its concentration in areas where agglomeration economies could be tapped (see above), the extremely labor-intensive manufacturing process (so far relatively impervious to automation) set binding parameters. Aside from discontinuing production, the only remaining option was to revert to foreign sources, be it via FDI, OPT or direct imports. This, however, led to a further decline in employment as companies shed their most inefficient operations and/or lines of production in Germany. Although import penetration ratios were already over 40 percent (in volume terms) for most products in 1980, they were often well over 80 percent in 1990, with menswear registering much higher rates than womenswear.

The improvement in the competitive position of the textile industry, which was able to expand production over the 80's (after declining in the 70's - see Table 4) and increase exports more than imports grew (see Table 5), was largely due to major employment restructuring as a result of a rapid investment upgrading strategy: this sector, which previously tended to be labor intensive, has become in many areas extremely high-tech and capital intensive; its labor productivity trend was not much lower than in the electrotechnical industry (see Table 6).¹⁵ While the textile industry lent itself to more capital-intensive production methods, the clothing industry, where the core process - sewing - does not fit into prevailing constraints for automated, capital-intensive production methods, still remains very labor intensive and accounts for up to 80 percent of labor costs in garment manufacturing [see e.g. Spinanger, 1992]. Hence, virtually stagnating productivity in the 1979-90 period (see Table 6 and Diagrams 1 and 2) led to soaring unit wage costs and thus an ever-increasing need to adjust. As noted above one key option open to remain competitive was to rapidly expand the internationalization of the industry.

¹⁵ For sure there were major advances in spinning and weaving technologies as well as extensive computerization (also in knitting technology) and German textile producers were at the front of the ordering queue. While this quantum leap in textile machinery technology shielded the textile industry in Germany to a greater degree from the impact of wage increases, the impact of legislation and/or contract agreements, which significantly reduce the utilization of such expensive equipment is a factor which has definitely reduced competitiveness. Estimates have been made showing that allowing textile mill operations 7 instead of 6 days a week reduces manufacturing costs by 6-8 percent and reduces the amount of capital needed (holding output constant) by up to 17 percent [see Gesamttextil, 1988, Sonntagsarbeit in Europa].

4. Internationalization of the Industry

Trade. Germany, now the third largest exporter of textile and clothing goods in the world, just behind Italy, but less noticeably lower than China than it is ahead of Korea and Hong Kong (see Table 1).¹⁶ While trade in both textiles and clothing have long been running deficits, over the 80's exports did increase faster than imports. A regional breakdown (Table 7) of major markets for Germany's T+C exports shows that since the early 80's, the share of textile and clothing exports heading to the EC has been very stable (both around 55 percent). Although there have been shifts within the EC, away from the major markets in 1980, perhaps the most interesting trend is the increase of textiles to the rest of the world (REST), i.e. to LDCs (including Eastern Europe). This picks the rapidly expanding OPT trade with Eastern Europe and Mediterranean countries. As a matter of fact, in 1992 perhaps one third of clothing imports were of OPT origin, twice as much as in 1980. On top of this, German clothing manufacturing companies, in their efforts to remain competitive, have themselves tapped foreign sources and these accounted for well over 20 percent of clothing imports. In other words, close to 60 percent of Germany's clothing imports in 1992 can be attributed to the clothing manufacturers themselves, stemming either from foreign subsidiaries or contractual agreements with foreign producers [see BBI, various issues].

In a "first-stab" attempt to interface foreign activities of German textile and clothing companies with Germany's imports of textile and clothing, Table 8 portrays import shares and growth rates by major suppliers together with investment activities in these countries.¹⁷ It is, of course, true that neither of these figures gives a complete picture of the foreign activities of German T+C companies abroad, as contractual agreements - the most important aspect - are not included.¹⁸ Nevertheless they do provide a good initial overview and a starting point for interpreting the survey results later on. In one case they seem to allow an implicit interaction to be assumed between the presence of German companies and increases in import shares, i.e., in North Africa where 26 FDI companies were operating in 1985.

16 Note: only domestic exports are used in this comparison. If Hong Kong's reexports (i.e. primarily from China) were included it would assume the number one position.

17 The numbers in the "(a/b)" represent "a" the number of German textile/clothing firms at the end of 1985 in these countries (based on Bundesbank data from Gesamttextil) and "b" the number of new firms which established operations over the period 1985-89 (based on FAST data). FAST stands for Forschungsgemeinschaft für Außenwirtschaft, Struktur und Technologiepolitik, which published the International Investment Monitor '90 [1990], a one-off collection and statistical presentation of foreign investment transactions.

18 For instance, the rise of Turkey to Germany's number one non-EC supplier can hardly be explained by FDI. To the extent that German clothing companies or department stores are involved it would primarily be via contracts for finished products, whereby OPT is relatively unimportant.

The key question in connection with OPT and other foreign activities by German T+C firms is the extent to which these and other strategic policies were able to improve the competitive position of German finished products both at home and in other countries. If, for instance, the upgrading of the capital stock in the German textile industry - together with other strategies - really did improve the competitiveness of the industry, then in the major export markets (shown in Table 9) Germany's share in their imports should - *ceteris paribus* - tend to increase. The same applies to the clothing industry as concerns the above mentioned strategies followed, namely higher quality, higher prices and more fashionable products.

In the case of the textile industry (see Table 9) Germany's success in the EC was until 1989 more pronounced than Italy's (which is also printed in bold-face numbers), but considerably weaker since then. On a country-by-country comparison only exports to France and Japan reveal growth rates (for 1980-89) which were below average. While this changed during the second half of the period, Germany slipped in Italy, United Kingdom and EFTA. In the case of the clothing industry, although the share of imports by the EC from Germany decreased (over the period), its rate of increase (in value terms) was higher than Italy's. Perhaps more important, however, Germany's performance in Italy's very fashion-oriented market would lend some credence to the success of the above-mentioned strategies to move up-market. Whatever, success with these strategies during this period of time does not mean that - in fast-moving fashion markets - success in the coming years will prevail as well. This would tend to hold all the more, knowing how non-ICs (i.e. non-OECD countries plus Turkey) made inroads into the various countries (see Table 9). During the 80's and into the 90's they increased their share in EC imports to levels above intra-EC trade.

The extent to which T+C companies opted to venture abroad was first portrayed above (see Table 8) in trying to determine if FDI induced exports back to Germany. The actual amounts and trends in FDI are presented in Table 10, which reveals that in recent years (1989-92) the rate of increase of FDI has indeed been faster for the T+C complex than for manufacturing as a whole. The actual change in FDI stock relative to the sum of domestic investment (FDI investment quota) suggests a noticeable increase in the importance of the clothing industry since 1988 - for every DM invested abroad only 4 DM are invested in Germany (final column in Table 10; for total manufacturing the ratio is 1 DM to 10 DM). Its relative level (i.e. percent of FDI; line 12) also been rapidly increasing but is still lower than on average in Germany (line 13).

It is evident from available data that FDI indicators hardly provide the necessary underpinnings to explain the interlinkage between investment strategies and trade flows. Turkey was mentioned as a case in point where foreign involvement does not reveal direct

manufacturing FDI, but Yugoslavia¹⁹ could also put forth as a prime example. That is, Yugoslavia has long been the virtual backyard for the Germany's clothing industry and it accounted for a larger share of imports in 1990 than Hong Kong. But whereas Hong Kong exports almost exclusively products directly ordered by German manufacturers, retailers or importers, Yugoslavia almost exclusively exports OPT products using German or EC material inputs. In 1990, over one third of Germany's OPT imports originated in Yugoslavia with another 50 percent stemming from Eastern European countries. All in all Germany's clothing manufacturers have long begun to tap the OPT potential in Eastern Europe, far more than other EC countries [see Morris, Sowter, 1987].²⁰ And this fact must be viewed as a key ingredient in restructuring the clothing industry to competitive levels.

This is not to say that German T+C companies have not made significant direct investments abroad, but these have been mainly limited to textiles (e.g. man-made fibre enterprises) and these again were in industrialized countries (ICs) close to companies requiring the output (e.g. the USA). In the case of the clothing industry, FDI was often of trading nature, to market and/or distribute the up-market, fashionable products "made in Germany". Of course, it cannot be forgotten in this discussion that whatever strategic decisions are made, they are all affected by the omnipotent MFA trade regime which limited the access to German markets for (virtually) all T+C products from LDCs throughout the entire period. Since the MFA's future has just recently been decided upon in the Uruguay Round accord and but a slow, yet to be specified phase-out is foreseen (see Section III), potential foreign investments in LDCs to supply Germany (or the EC) will tend to be held back, pending a more definite clarification of future parameters. For sure the OPT path followed by German clothing manufacturers - as opposed to direct orders abroad - has directly benefited the German textile producers - since they provide the major share of the intermediate inputs - and indirectly also the domestic textile machinery producers, who can further improve their competitive position from the feedback they receive [see Spinanger, 1994].

5. Industrial Structure and German Strategies under the MFA: Summarizing the Evidence

At the outset of the past three decades the German T+C industries were in the process of coming to grips with increased imports from LDCs. Although the Long Term Agreement (LTA) had been instituted in 1962 for cotton products and post-WWII non-tariff restrictions

¹⁹ Yugoslavia refers to former Yugoslavia through the paper.

²⁰ The use of this option was restricted by EC regulations which limited both amount as well as the companies which were eligible to apply for it. As a matter of fact other EC countries even attempted via Article 115 to keep these imports from Germany out of their own market [see e.g. BBI, 1982].

had still not been phased out, exports from suppliers like Hong Kong were viewed as subjecting German producers to stiff competition.²¹ By the time the MFA was finally born (Jan. 1, 1974), and given the difficulties which had arisen in the meantime, there was a general feeling that an all-encompassing international framework - to effectively channel trade in T+C goods from LDCs to ICs - would ensure the continued viability of Germany's T+C complex.

While the textile industry had already begun to forcefully restructure during the 60's (see Table 2) the clothing industry almost retained its full strength. The fact that MFA I proved to be far more liberal than expected, led to a much tighter MFA II [see Aggarwal, 1985], thereby providing the T+C complex with a reprieve. Nonetheless, the stay proved to be of short-term nature, as domestic demand slowed and exchange rate fluctuations introduced an additional risk element into the calculations. During this period the strategic response of some firms was to concentrate on mass production and standardized products. Others, that is the small and medium sized companies, found themselves encountering financial constraints (particularly in the textile industry) as they attempted to effect the necessary investments. The shakeout which occurred was inevitable.

Although numerous policies were initiated between the government and the industry, e.g. promoting technology (particularly in textiles), an industry strategy of specialization and flexibility evolved.²² Technical improvements and financial consolidation provided the foundations for carrying out these policies.²³ In the textile industry - inter alia - technological restructuring ensured that the inefficient firms disappeared from the market and a coalition developed between the remaining establishments and the textile machinery as well as the chemical industry. In this connection new markets were developed or expanded (e.g. industrial textiles, Table 4).

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- 21 The reader is referred to Donges, Fels, Neu et al. [1973, pp. 197-241] for a description of the trade regime for T+C products in the 60's. There the issue is put into a proper perspective: imports from all countries accounted for 17.5 percent of available supplies in 1966 and 21.2 percent in 1970, but imports from restricted countries accounted for 2.4 percent of available supplies in 1966 and 3.6 percent in 1970.
- 22 As Steedman and Wagner [1989, p. 41] note: "The successful survival of German clothing manufacture is based not on a wider application of mass-production principles to standard varieties, but rather on producing small batches of high quality goods in greater variety."
- 23 The German government did not consider reverting to subsidies. As a matter of fact, the T+C complex in the 80's was (directly/indirectly) subsidized at a rate below that of manufacturing [see Klodt, Schmidt et al., 1989, p. 58]. It would have been difficult for the German government to propose direct subsidies to begin with as it was responsible for having the Claes Plan rescinded. This plan incorporated subsidies for the Belgium textile and clothing industry to make them internationally competitive. Belgium was required to stop the subsidies.

Developments in the clothing and ready-to-wear fashion industry followed a different path. During the seventies and the eighties, the West German clothing industry restructured - but not as much as the textile industry - becoming increasingly fragmented, as larger producers gave way to smaller companies (see Table 2). Businesses became increasingly style and market-oriented and, benefiting from strong domestic and foreign demand for quality, many clothing companies developed brand names and images for their products. Leading German manufacturers such as Mondri, Escada and Hugo Boss flourished, moved into retailing and even into non-clothing fashion items, both in domestic and international markets.

Not having effected the necessary degree of restructuring, the clothing industry - in the late 80's - came under pressure again. While additional demand from unification in 1990 provided a respite through 1991, in 1992 and 1993 the pent-up restructuring needs led to the largest job losses since the beginning of the 80's, affecting all major sectors.

The German T+C industry at the moment is facing a cyclically depressed market, with sales sustained mainly by replacement demand encouraged by annual changes in fashion. As in the past, it is during such phases that low cost imports exacerbate the problems for the least efficient/low-priced West German producers and it is this group - as opposed to the high-fashion producers - which will be squeezed out if they remain in their current product lines and/or are constrained in effecting capital intensification.

In the medium run - given continued financial burdens accompanying the unification process - domestic demand will be subdued, with stronger import competition from developing and Eastern European countries. As clothing firms intensify their efforts to import via OPT in Eastern Europe or around the Mediterranean Basin, at least a high-tech or high-quality core of the clothing companies will remain (e.g. designing or cutting activities). While this will benefit the textile industry which can supply the material inputs, the textile industry itself will no doubt also continue its attempt to supply distant major markets through FDI (see Table 10; see also Breitenacher [1992]). Generally speaking it is likely that both industries will be involved in consolidating or rather attempting to improve their positions in the Common Internal Market/European Economic Space.

6. Foreign Investment: Evidence from a Survey

To gain adequate insights into the strategies behind the performance of textile and clothing companies in Germany - particularly vis-à-vis tapping the foreign potential - a survey was designed to capture information from various angles (see pages A18-A20 for description of survey). First of all, specific data were requested on the actual number of foreign activities, be it foreign direct investment (FDI) or international contractual agreements (ICAs) for

manufacturing or commercial purposes. An overview of this direct approach, which identifies the location of foreign activities, is contained in Table 11.²⁴

The pattern of foreign activities revealed by the survey is in line with what was described above, namely that it is the clothing industry which has tapped the potential of foreign sourcing in the past decade, depending particularly on ICAs. But it is not just the clothing industry, however, as the degree to which the knitting industry (including socks, hosiery and body-support garments) has been using foreign sources, be it either in their own subsidiaries or via ICAs, is quite extensive. And it is also in the case of the latter where the nearness of the Eastern European countries has proved to be of tremendous advantage, accounting for almost two-thirds of knitting's production ICAs in 1990 and 75 percent of all production ICAs in Eastern Europe that year.

As a matter of fact, perhaps the most interesting piece of information to be gathered from this table is the massive increase in the involvement of Germany's clothing and knitting industry in Eastern Europe particularly in ICA production. This backs up the indirect evidence based on the relatively high increasing level of exports of textile products (i.e. intermediate inputs for the production of knitted or woven clothes) to Eastern Europe - from almost 10 percent in 1980 and 15 percent in 1990 to 18 percent in 1992²⁵ as well as the import figures for clothing in the same table or in Table 8. Imports from Eastern Europe (including Yugoslavia) accounted for about 15 percent of Germany's clothing imports in 1992²⁶ or almost as much as those from Italy, the dominantly largest supplier.²⁷

In more general terms, a comparison of Table 11 with either Table 8 or Table 10 quickly reveals how incomplete the usual overall indicators of the foreign involvement of industries

²⁴ The data contained in Table 11 incompletely portray the foreign activities of the firms surveyed. While FDI was fairly well covered, information on ICA's tended to be less willingly provided. On the one hand, some firms were no doubt cautious in laying open all their cards on ICAs; others, however (given time constraints), could not check out where and when contracts were initiated or suspended. A particular problem arose where totals were given for foreign activities, but the disaggregations by countries were not complete. In such cases, column 6 was used to capture this unallocated rest. To summarize: Table 11 no doubt underestimates the degree to which the foreign option was chosen.

²⁵ The comparable figures for EC12/Italy are 6.4 percent/6.1 percent (1980), 5.9 percent/4.5 percent (1990) and 7.4 percent/4.6 percent (1992).

²⁶ It must be remembered that fabrics leaving Germany to be turned into clothes in foreign countries under OPT regulations are classified as textiles on the export side, but as clothes when they are imported as finished goods.

²⁷ The share of Italy's imports from Eastern Europe is about half of Germany's in 1990.

are.²⁸ Aside from not picking up ICAs, the de jure statistical delineation for FDI can distort the actual extent of foreign control. In order to put the above listed foreign activities carried out by the surveyed companies into a proper perspective, two other pieces of information were solicited.

First of all, information on the origin of products sold was requested. This is detailed in Table 12a and clearly exhibits the decrease in the share of products being produced or sourced in Germany, whereby the shift is most apparent for the clothing industry. In 1990 the percent originating in Eastern Europe is - if the shares of purchases from non-domestic sources are examined - about double the aggregate figures noted in Table 8.²⁹

Secondly, the input structure of a company's turnover (ex factory valuation of material inputs plus value-added) was requested. Since the disaggregation called for information on both domestic as well as foreign sources, specifics on the importance of ICA and OPT operations can be analyzed. This information is contained in Table 13 together with data drawn from annual surveys of industrial firms in Germany, sketches the following picture:³⁰

- The pattern of restructuring and relocating production is in line with trends presented in Table 4. That is, while domestic clothing production dropped by almost 30 percent throughout the 80's, the sample firms reduced their's by over 35 percent (from 45 to 29 percent). In the case of the textile and knitting industries the surveyed companies reduced production by about 15 percent as opposed to but 4 percent in terms of the production index.
- The important role of the lower income Mediterranean EC countries for the production of clothes becomes evident. However, the data no doubt underestimate the trends as in numerous cases German production facilities were located in these countries not only to service the German market, but in particular to export to other EC countries (e.g. Italy and France). The leveling off of the EC Med-Rim's share in recent years reflects the result of

²⁸ Further, in this direction one could refer to a publication of the German-Portuguese Chamber of Commerce and Industry [Deutsch-Portugiesische Industrie- und Handelskammer, 1986] which lists 19 German textile/clothing industry investments, but only 8 are explicitly listed by Gesamttextil based on Bundesbank data. Beyond these, of course, there are also the ICAs which are not listed in either case.

²⁹ As concerns sales (Table 12b), the firms are becoming more export oriented at roughly the same pace as the industry itself. There is, however, an increase in the concentration on European markets as opposed to a decrease in terms of actual exports (see Table 7). However, the Survey data differ from official sources since some textile sales to German firms as reported in the Survey actually end up in the official statistics as textile exports to Eastern Europe.

³⁰ There could be an underrepresentation of OPT in Table 13 since some firms had difficulty in filling out the table. However, to the extent that problems were the same in both years, then at least the trends would correctly reflect the situation.

other locations - like Eastern Europe - becoming more attractive [see e.g. Gälli, 1992]. Whereas Germany's textile and clothing imports from Greece, Portugal and Spain increased by 25 percent in the period 1989-1991, those from Bulgaria, Czechoslovakia, Hungary and Poland increased by over 100 percent.

To summarize the above: the major thrust of the T+C industries' foreign activities has concentrated on ICAs, whereby these were located to a large degree in Eastern Europe (Table 11). In Mediterranean Rim countries both FDI and ICAs were important. Although foreign activities in Asia have also expanded, this has rarely been the case vis-à-vis OPT. The result of the above shifts are clearly reflected in trade flows. Whereas Germany's imports of clothing from Asian LDCs in 1980 exceeded those from Eastern Europe, Turkey and Mediterranean Rim non-EC countries by 100 percent already in 1990 each accounted for about 30 percent of total clothing imports (see Table 8).

7. The Competitive Environment and Strategic Decisions: Past and Near Future

Given the above evidence on the spread and structure of the German T+C industry's foreign activities, let us recall Germany's posited reaction to increased competition [see Navaretti, 1992]. It was assumed that Germany's products were targeted mainly at levels below the highest quality and they were thus more vulnerable to competition from LDCs than Italy. The increased competition would induce a greater degree of restructuring as manufacturers in Germany sought low-cost foreign production locations while Italian producers maintained manufacturing their predominantly high-quality items at home.

Implicit, of course, in the hypotheses is a possible different reaction by companies in Germany, namely for them to follow the quality path. That is, if producing for top-of-the-market quality niches means - *ceteris paribus* - creating competitive margins over LDC imports, then such a move must be considered as being just as congruent for Germany as it is for Italy. As a matter of fact there would seem to be no reason not to consider the set of such companies in Germany as being an extension of the Italian case. After all, if one of the necessary preconditions for such a step is to have driven an increasingly large wedge between production and retail prices by creating a certain image or flair, then these may well have been already effected.³¹ After all - as noted above - numerous well-known West Germany firms (including some covered by the survey) have headed in this direction, so there would seem to be reason enough to believe that for an important segment of the German T+C

³¹ See Spinanger [1992, p. 113]: "The wedge, which represents non-production costs and non-price factors, captures the upmarket shift; to the extent that consumers are willing to bear it, this wedge is also an insurance policy against competition from developing countries."

complex, reaction parameters similar to those posited for Italy would tend to prevail. This is not saying, however, that - on the average for Germany - the behavior hypothesized by Navaretti [above] is not considered to be valid. Rather that the sample of firms in this survey - although covering the spectrum of the German T+C complex - fits more the upper quality segments of the market and hence would tend to interface with the Italian model. The interface, albeit is not complete, since the German firms match quality with tapping foreign sources as well (see Table 11).

That the above tends to be the case can be shown by turning to the quality structure of the markets targeted (see Table 14). It can be seen that niches aimed at - particularly by the clothing industry - have become increasingly up-market over the last decade after having started at a relatively high level in 1980.³² With over 75 percent of clothing products located in the medium-high to high quality levels in 1990, it seems logical to assume reaction patterns which would aim at maintaining or increasing the "wedge" between production costs and the final selling price. One step in this direction would be to create special stores with their own characteristic atmosphere (e.g. like Escada).

In line with these considerations we can now turn to an analysis of the strategic policies effected/pursued by the firms surveyed by examining the top 3 policies across the entire sample and disaggregated by the clothing and textile/knitting industries. By far the most important strategy across all sectors was **quality improvement**, as would be expected if the Italian model applies to the firms in the German survey. The fact that Germany performed as well if not better than Italy across major markets particularly in recent years (see Table 9), could be interpreted as an indication of success in this direction. The second most important strategic policy over the last ten years proved to be **product differentiation** (or rather tied for second in textile/knitting industry), likewise an attribute of firms at the upper end of the market, "carving out" specific markets for their products. Such behavior of the lower end of the market would be difficult to imagine. The third most important strategy differs between

³² In comparing relative quality levels between countries, a caveat is necessary, as they may well reflect country-specific traits. That is, especially with respect to the clothing industry, it is likely that a judgement on quality levels in Germany for a particular product would tend to be higher than a judgement reached in Italy for the same product. This implies that a "parity" conversion is necessary to adjust for a higher average quality/fashioned level in Italy when comparisons between the two countries are to be made. It can be attributed to the simple fact that "alta moda" exerts its influence on the structure of the Italian clothing industry in a manner which has no counterpart in Germany. This is not saying the Germany does not have high-quality, high-fashion clothes on par with Italian products, but rather that the quality/fashion impact of such trend-setters is more limited. Having said this, it must nonetheless be added that the situation has been changing over the past decade, so that judgements made in Germany vis-à-vis quality levels today would be closer to comparable judgements made in Italy today than was the case in 1980. It can be expected that such differences will continue to decrease in the coming years.

the clothing and the textile/knitting industries. In the case of clothing, three policies were equally important. Whereas **brand names** can be viewed as an ingredient in the upgrading package complementing product differentiation, a **tighter control of distribution channels** and **process innovation** aimed more at the cost side of production. As concerns distribution policies they would likewise fit to the reaction parameters of the up-market producer since fashion-driven sales require quick, on-time and efficient delivery systems, if the essence of fashion is to be turned into increased sales. Furthermore, it includes - inter alia - the setting up of special stores as well as the careful screening of potential retail outlets. Realizing that a high proportion of clothes in Germany are sold via large department stores or multiples (together 40 percent versus 17 percent in Italy)³³, one issue arising here is the extent to which such channels are selected, for instance in line with a shop-within-a-shop strategy. Process innovation can be considered as being primarily focused on operations upstream from sewing where state-of-the-art CAD/CAM equipment was introduced. Elsewhere, that is in the sewing process, computer-controlled stitching helped reduce rejects but - as seen in Diagram 2, did little to increase productivity in an overall manner. A major improvement in the industry's competitive position could be made only if measures were introduced to drastically shorten the length of the time workers are idle between sewing operations.³⁴

As concerns the other strategies chosen by the textile/knitting industry, the selection of **process innovation** points to attempts by the industry - which, as opposed to the clothing industry, is mainly capital intensive - to maintain their competitive position via purchases of the newest technology. Knowing that particularly between the textile/knitting industry and the textile/knitting machinery industry close ties exist (see above) it is only logical that these locational advantages are continually tapped to remain competitive. The fact is that during this time period major technological advances were indeed instituted in the textile and knitting industry. Thus, these two industries in Germany (but also in other high-income neighboring countries) were in a position to profit from the advances even before lower-

³³ In the EC only the UK is more concentrated with 59 percent. At the other end of the spectrum, i.e. distribution via independent retailers, Portugal (76 percent) and Italy (70 percent) are on top, with Germany in middle (44. percent) and the UK at the bottom (20 percent). In this connection see Salmon/Texco [1992, p. 97].

³⁴ To the extent that companies are having outward processing carried out (for instance in Eastern Europe) it may well be that their involvement in structuring or setting up the production process in the foreign location would to enter into this strategy option. Numerous firms indicated that they not only made sure that the technical standards were up to par, but it was stated that they even entered into barter agreements providing the high quality machinery they deemed essential to produce the clothing products they desired in exchange for a certain account of finished products.

income textile and knitting producing countries had similar access to the state-of-the-art equipment.³⁵ What this meant in terms of productivity was already shown in Diagram 2.

With respect to the other listed strategies - in the clothing industry - **decentralization to LDCs** is the only one with enough points worth mentioning. Although it is somewhat surprising that the foreign option was not selected more often, in light of the up-market companies being dealt with in this sample it became evident in discussions with the firms that this is a path which was in the process of becoming more important.

As concerns the other policies of the textile/knitting firms, **distribution and decentralization to LDCs** are the most important. Distribution - mentioned by both textile and knitting companies - was seen as essential if the advantages of being located near the buyers are not to be negated by poor distribution systems. In the case of the textile industry it is not only the ability to interact with the clothing industry to quickly produce the fabric and patterns desired (this interaction was continually mentioned as being important), it is also the ability to deliver "just in time" so as to help maintain the inventories of clothing manufacturers at a just-in-time level. The foreign option was mentioned merely by the knitting industry³⁶ and must not only be seen in connection with the labor-intensive parts of the knitting processes carried out in OPT manufacturing, but for almost the entire spectrum of products, i.e. MFA categories, where in the meantime import penetration has reduced domestic shares to negligible levels.³⁷

To summarize the above: the analysis of strategic options over the past decade reveals how German companies basically tried to increase the competitive position of their products. The clothing companies did this by going up-market (quality improvement), appealing to different market niches (product differentiation), increasing the profile of their products (distribution

³⁵ The interface between knitting/textile industries and the industries producing machines for them was constantly noted by the firms as being particularly important. The degree to which this symbiotic relationship was reflected in increased earnings or at least an increase in competitiveness proved to be difficult to estimate. However, the fact that the unit values of textile machines, for example being delivered to Swiss textile manufacturers, were considerably below the unit values of machines delivered to countries further away (e.g. developing countries), implicitly expresses the reduction in capital costs accruing to those companies feeding back important technical input data to the machine producers. While this interface was also viewed as being important in the clothing industry the constraints placed on the extent to which machines can be substituted for labor or contribute to increased labor productivity, limits their impact. Furthermore, the fact that sewing machines are inexpensive and easily transportable means that financial or natural trade barriers do not limit new producers from entering the markets.

³⁶ The textile companies surveyed (i.e. excluding knitting), no doubt inadequately portray the industry as a whole vis-à-vis the foreign option, even if the industry as a whole was less inclined to move offshore.

³⁷ An example as to how significant the drifting apart of prices for domestic and imported apparel products was can be shown by referring to knitted outerwear. In 1980 domestic outerwear was roughly 50 percent more expensive than imported, by 1990 this difference increased to 90 percent. This was due for the most part to an increase in domestic unit values (+40 percent), whereas the unit values of imported goods increased just 10 percent.

and brand-names) and - on the production cost side - trying to dampen the impact of the very high wage costs in Germany throughout the decade (see Table 18) by effecting, albeit tightly constrained, labor-saving investments (process innovation) wherever possible. For the textile industry, in addition to upgrading and refining their product lines (quality improvement and product differentiation), increased investments in the state-of-the-art capital equipment (process innovation) were seen as the keys to success. Were these policies really the keys to success, that is, did those options considered to be the most important over the last decade actually induce better performance? Furthermore, is it possible to determine that those segments of the industry posited as being subject to greater competition from foreign companies (i.e. lower quality levels) did indeed select the foreign option as hypothesized by Navaretti [1992]?

To attempt to answer the first question, the bottom line has been examined: did the preferred strategies lead to sales increasing more over the period 1980-1990? By calculating the average sales increase of all companies selecting a given strategy as being one of the top three, a strategic option sales performance indicator was produced (see Table 16).³⁸ Without contending that the figures are anything more than of indicative nature, it can be seen that - in the case of clothing - except for product differentiation³⁹ the concordance with the rankings in Table 15 is evident. Similar evidence prevails for textiles (excepting process innovation). If the same procedure is applied to the policies foreseen as being relevant in through 1995 we find - in the case of clothing - that greater emphasis is being put on the foreign option, if decentralization and vertical integration are considered together. With respect to the textile industry, process innovation and foreign decentralization are projected as resulting in a better performance.

Given the fact that foreign investment is seen as becoming more important during the period through 1995, a closer look at the strategies pursued or being pursued, taking into account the quality levels of output (see Table 17) is quite revealing. It shows that during the period 1980-1990 those companies which selected the foreign option (LDC decentralization) tend to be producing to a greater degree for the medium quality sector of the market (i.e. 50 percent) than the medium quality segment sector of the market for all companies in the sample (i.e. 31

³⁸ In other words, it was not attempted to weight the sales by using the 3 land points assigned to the rankings of the policies. This method seemed advisable for the simple reason that no knowledge about the relative importance of a given policy was available.

³⁹ The question arises here as concerns the possibility that brand-names might be a type of product differentiation; if yes, then the rankings would show a better concordance.

percent).⁴⁰ That upper market companies are currently shifting to greater involvement in LDCs can be interpreted from the larger share for the 1991-95 period (i.e. 55 percent), even if it is still less than their average share in the survey (i.e. 76 percent).

To further harden this evidence Pearson correlations were run between the number of foreign investment activities (based on the data behind Table 11) and the share of output in the five specific quality levels. Assuming - in line with Navaretti's discussion - that one main option open to those firms producing for lower quality market segments is to shift activities offshore, then the greater the share of lower quality output the greater the importance of foreign activities. This could be expected at a given point in time, presuming of course that the major shifts have not just occurred. It is, however, expected to be more likely the case over a time period, where lower initial quality levels lead in the course of the period to the decision to go offshore and then to increased foreign activities. It is this aspect which is looked at here. Hence the following correlations were run:

$$FA_{90} = f(QLO_{i80})$$

FA_{90} = foreign activities of a firm in non-industrialized countries outside of EC/EFTA (i.e. LDCs + EE) expressed as the number of manufacturing/commercial FDIs (FDIM, FDIC) and manufacturing/commercial ICAs (ICAM, ICAC) in year 1990.

QLO_{i80} = percent share of output in a specific quality level (i) being produced by a given firm in 1980 (see Table 14 for overview of quality levels). i assumes designation L(low), ML(medium-low), MH(medium-high), H(high).

It is hypothesized that a positive correlation exists between the share of lower quality levels and the extent of foreign activities, or rather the reverse would tend to hold for higher quality levels. The correlations indeed substantiate the posited relationships.⁴¹ Those that were significant are as follows: $FDIM_{90}/QLO_{L80} = .8272^{**}$; $ICAM_{90}/QLO_{L80} = .5573^{*}$; $ICAC_{90}/QLO_{ML80} = .6386^{**}$. Given the fact that all other correlations were insignificant, the particular relevance of pressure on the lower sectors to shift abroad must be underlined. Impacting on these results, that is shaping reactions of the companies, were in particular trade regime elements; a brief review thereof is thus essential.

⁴⁰ Due to the limited number of observations it is not possible to differentiate between the textile and clothing industry. Nonetheless, in this particular aspect it may not be essential since in both industries lower quality levels imply a greater potential impact from foreign competition.

⁴¹ ******(*) significant at 1 percent (5 percent) level (2-tail test) with 17 observations.

8. Impact of Trade Regime and External Factors

As noted at the outset of this study, Germany's trade policy stance in the EC was basically defined as aiming to uphold the principles of free trade.⁴² In the case of the T+C complex this is to some degree reflected in the increasing and above average import penetration ratios or rather in the far larger MFA quotas (i.e. on a per capita basis).⁴³ Of course, this is by no means saying that protection in Germany was minimal, since effective rates of assistance in the mid 80's were 74 percent for clothing and 50 percent for textiles versus 22 percent for manufacturing [see Weiss et al., 1988, p. 26].

Given these figures it is somewhat surprising to determine that among the companies surveyed, the amount of protection accorded by the prevailing MFA system of quotas was felt to be minor or virtually zero in about 75 percent of the cases.⁴⁴ This again is an indication that the survey deals with firms which best fit the "Italian model". It is also worthwhile to note that only one company (in the textile industry) felt that the MFA had implied a large amount of protection. Furthermore, it was the clothing industry which almost unanimously considered the MFA to be a trade regime just slightly or not at all important in terms of protection for themselves. In this connection it should be added that a few companies even mentioned that they had suffered under the MFA, since it did not allow them to source inputs where they were the least expensive. This argumentation was primarily put forth by companies upstream from clothing production.

In light of the above characteristics it can hardly be surprising that the vast majority of Germany's T+C companies (i.e. over 80 percent) view the creation of the common internal market in 1993 without worries about numerous, additional competitors, be they from LDCs or ICs. Only in the case of intra-EC trade was tougher competition foreseen (in one third of the cases), largely due to responses from the knitting industry. Whatever, across all of the sectors it was revealed that the companies had already prepared themselves for the internal

⁴² See footnote 5 in this Section.

⁴³ In value terms Italy, for instance, imported about one tenth as much from LDCs in 1990 as Germany did. Switzerland, as a matter of fact, imported just 30 percent less than Italy from LDCs in 1990, after actually having imported more during the early 80's.

⁴⁴ Perhaps the question must be raised about the degree to which companies were truthfully answering this question. For instance, they might not want to create the impression that they are not competitive and thus dependent on protection. Other information gathered from or on the companies did not seem to substantiate such a possible weakness.

market and in essence consider the EC12 - albeit with some caveats - to be one market.⁴⁵ To the extent that reservations were expressed, these were more of specific nature (e.g. language problems in certain Mediterranean countries or possible loss of domestic suppliers). It would seem that the German T+C complex has come to grips with the ramifications of the common internal market, even if more competition is expected. In none of the cases did companies feel that the foundations of their business would be threatened.

What also became very apparent were the intentions to continue expanding one of the main paths German knitting and clothing firms have taken in the past to remain competitive: OPT. In all cases it was stated that this option would be rapidly expanded in the coming years, primarily into Eastern Europe, but also in Mediterranean LDCs. Even textile companies, which in the past had not been involved in OPT operations, stated that they would be considering such possibilities.

Particularly behind the decision of the textile companies to opt for OPT operations (be it of ICA or FDI nature) two important driving forces were strongly underlined. First of all, the underutilization of expensive capital equipment together with high labor costs (see Table 18) makes operations in Germany extremely costly. As noted earlier (see end footnote 15) if restrictions on shift and weekend work were lifted, production costs would be reduced by 6-8 percent and capital needs could be cut by up to 17 percent. Working with such a disadvantage is acting as a driving force behind relocation, at least for those operations which do not require either highly skilled manpower and/or a particularly close interface with the clothing industry or other buyers (e.g. home furnishings). A glance at Table 18 highlights what this means in the case of Morocco and Tunisia, where numerous German, French and other EC companies have set up operations. These mill operations can be carried out on 35 percent more days/year than in Germany and wages are at 8-17 percent of German levels.

That such a strategy is being actively pursued in Europe was noted recently⁴⁶ with respect to outsourcing "greige away from Europe and into the lower-cost countries [*like Tunisia ... in order to*] focus ... efforts in [*Europe*] on ... finishing [,] where the real addition to value added is." For the German textile industry the Eastern European option may well prevail given the

45 Three years earlier in a survey conducted by *Die Textilwirtschaft* (encompassing 126 textile and 52 clothing companies in Germany), 44 percent of those answering expressed concern that there would be increased competition, 15 percent expected no impact because they were already integrated, but 82 percent expected higher sales and new markets (based on unpublished background of survey results).

46 This interview with the President and CEO of Dominion Textiles provides interesting and widesweeping insights into a global firm's strategy. Dominion Textiles Inc. of Canada is stated as having subsidiaries and associated companies in about 50 countries, and manufacturing in North America, South America, Europe and the Far East. It is ranked (by sales) among the top 20 textile companies in the world. See *Textile Asia* [November, 1992, p. 22].

simple fact that this potential is no longer limited by strict OPT regulations (see for instance Navaretti/Perosino [1992] for Italy's situation), but rather now promoted by the EC, together with the fact that the EES will eventually be encompassing these Eastern European countries as well. Eastern Europe's role as a base for West Germany's T+C complex will thus be rapidly expanded.

A second factor mentioned behind increased intentions by the textile industry to relocate or outsource - also in connection with OPT - must be seen in the ever tighter environmental constraints already placed on West German companies, far and above today's EC minimum standards. Since it is not likely that the West German environmental protection standards will be reduced and since EC standards are to be raised in the years to come, those processes which demand particularly costly pollution control measures will - to the extent that they can be spun off - tend to migrate to areas where time preferences are higher and where the benefits of environmental protection are given a lower priority than in the EC. While it was made clear that the industry would not participate in "pollution tourism", it was felt that some regulations went beyond what was considered to be environmentally essential.

In an attempt to counter the possible negative impact of environmental regulations on the international competitiveness of the textile industry some companies have reverted to setting up environmental balance sheets, not only to be able to focus in on the environmental specifics but also to help market higher priced merchandise produced at lower pollution levels. In more general terms, in order to turn the cost disadvantage of having to abide by such strict regulations on an industry-wide level into a possible advantage, the German Textile Federation (Gesamttextil) has proposed an environmental label for textile products.⁴⁷ This label would certify that textiles are produced under conditions which are in accordance with certain known and accepted environmental standards. So far such labels are voluntary, but there is always the danger that such eco-measures are misused for protectionistic purposes.⁴⁸

Given the characteristics of Germany's T+C complex, where pressure from low-cost producers has forced German companies to locate or outsource abroad, the OPT strategy is not designed to merely tap the lower labor costs in the respective host countries. Rather

⁴⁷ The Steilmann Group has also introduced an ecological line of clothing and is strongly supporting research in this direction.

⁴⁸ Such a label must no doubt be viewed in the same manner as the solution to the controversy surrounding the "purity law" (Reinheitsgebot) formerly regulating the sale of beer in Germany: the European court decided that it suffices to note that a product (beer) fulfills certain conditions (i.e. brewed under German purity law), but that the sale of the beer cannot be made contingent on fulfilling such conditions. To the extent that the specified conditions are not meaningless or misleading, then the consumer can decide for himself which type of beer he prefers or rather which type of cloth should be purchased.

German producers enter into OPT agreements aiming to produce offshore at German standards. To ensure that the quality levels of the output are forthcoming they are willing to accept longer "toothing periods", to invest extensively in manpower training (on site and/or in Germany) and in the maintenance of the machines as well as to station personnel with the companies. All this serves to establish long-standing working relationships and engender returns for all parties concerned. In numerous cases OPT or similar contracts had been in existence for well over 10 years.⁴⁹ But beyond this, the aim for quality many times embodied the stipulation that specific pieces of capital equipment be employed.⁵⁰ In some cases the German companies provided the machinery in a type of barter agreement for the merchandise produced.⁵¹ Since German companies are more prone to employ German machines, the OPT track offers another example of how the symbiotic relationship between the textile/clothing industry machinery manufacturers and the T+C producers can function.

Finally, from the other side of the issue, in some host countries attempts are made to foster the local machinery industry, thus tight restrictions regulate the importation of foreign capital equipment. In nine out of eleven companies severe restrictions are the importation of capital equipment would be reason enough not to select such a country for FDI or OPT operations. Obviously, if the type of machinery is not stipulated, but rather only the specifications for the final product are decisive, then products from such countries may be contracted for, but only within the lower quality ranges.

In concluding this section it might be noted that in addition to the above mentioned driving forces behind the shifting of production offshore, the German tax system was perceived to be slanted against investments. This issue, which extends beyond the scope of this study, is one focal point for ongoing discussions on "Standort Deutschland", that is on the viability of Germany as a location for business activities. Given the above comments and the underlying trends it would seem that the German T+C complex is in the process of redefining what it views as being viable from Germany via its (that is the EC's) trade regime.

49 Even in Hong Kong, where flexibility is assumed to be a basic characteristic, major German buying offices expect less than 10 percent change per year among the companies from which they source.

50 As a matter of fact nine out of ten replies to this question stated that this was the case.

51 While initially used machinery from domestic operations were no doubt involved, it was just a matter of time before newer, upmarket machines were introduced in line with increased skill levels.

simple fact that this potential is no longer limited by strict OPT regulations (see for instance Navaretti/Perosino [1992] for Italy's situation), but rather now promoted by the EC, together with the fact that the EES will eventually be encompassing these Eastern European countries as well. Eastern Europe's role as a base for West Germany's T+C complex will thus be rapidly expanded.

A second factor mentioned behind increased intentions by the textile industry to relocate or outsource - also in connection with OPT - must be seen in the ever tighter environmental constraints already placed on West German companies, far and above today's EC minimum standards. Since it is not likely that the West German environmental protection standards will be reduced and since EC standards are to be raised in the years to come, those processes which demand particularly costly pollution control measures will - to the extent that they can be spun off - tend to migrate to areas where time preferences are higher and where the benefits of environmental protection are given a lower priority than in the EC. While it was made clear that the industry would not participate in "pollution tourism", it was felt that some regulations went beyond what was considered to be environmentally essential.

In an attempt to counter the possible negative impact of environmental regulations on the international competitiveness of the textile industry some companies have reverted to setting up environmental balance sheets, not only to be able to focus in on the environmental specifics but also to help market higher priced merchandise produced at lower pollution levels. In more general terms, in order to turn the cost disadvantage of having to abide by such strict regulations on an industry-wide level into a possible advantage, the German Textile Federation (Gesamttextil) has proposed an environmental label for textile products.⁴⁷ This label would certify that textiles are produced under conditions which are in accordance with certain known and accepted environmental standards. So far such labels are voluntary, but there is always the danger that such eco-measures are misused for protectionistic purposes.⁴⁸

Given the characteristics of Germany's T+C complex, where pressure from low-cost producers has forced German companies to locate or outsource abroad, the OPT strategy is not designed to merely tap the lower labor costs in the respective host countries. Rather

47 The Steilmann Group has also introduced an ecological line of clothing and is strongly supporting research in this direction.

48 Such a label must no doubt be viewed in the same manner as the solution to the controversy surrounding the "purity law" (Reinheitsgebot) formerly regulating the sale of beer in Germany: the European court decided that it suffices to note that a product (beer) fulfills certain conditions (i.e. brewed under German purity law), but that the sale of the beer cannot be made contingent on fulfilling such conditions. To the extent that the specified conditions are not meaningless or misleading, then the consumer can decide for himself which type of beer he prefers or rather which type of cloth should be purchased.

German producers enter into OPT agreements aiming to produce offshore at German standards. To ensure that the quality levels of the output are forthcoming they are willing to accept longer "toothing periods", to invest extensively in manpower training (on site and/or in Germany) and in the maintenance of the machines as well as to station personnel with the companies. All this serves to establish long-standing working relationships and engender returns for all parties concerned. In numerous cases OPT or similar contracts had been in existence for well over 10 years.⁴⁹ But beyond this, the aim for quality many times embodied the stipulation that specific pieces of capital equipment be employed.⁵⁰ In some cases the German companies provided the machinery in a type of barter agreement for the merchandise produced.⁵¹ Since German companies are more prone to employ German machines, the OPT track offers another example of how the symbiotic relationship between the textile/clothing industry machinery manufacturers and the T+C producers can function.

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⁵¹ While initially used machinery from domestic operations were no doubt involved, it was just a matter of time before newer, upmarket machines were introduced in line with increased skill levels.

9. Summary and Conclusions

With the unification of Germany and the opening up of Eastern Europe, the textile and clothing industry in the Federal Republic has been faced with changes in the economic landscape which are already and will continue to be having a profound effect on the industry in the coming years. Aside from the impact of dealing with the remains of the East German textile and clothing industry (not dealt with in this study), particularly the second of the above factors has been proving to be of enormous benefit to the industry due to Germany's strategic geoeconomic location and its long-standing trade relations with the region.

It was initially pointed out that since the introduction of the MFA in 1974 Germany, under the umbrella of the EC's T+C trade regime but with a more open approach to foreign competition, was able to maintain its top export position in textiles and its fourth place in clothing. Nonetheless, by losing shares in both areas it dropped from 1st to 3rd in T+C exports (see Table 1).

In the course of these developments Germany's structural adjustment in the T+C industry was shown to have been considerable by any measure, having accounted for over 60 percent of the decrease in employment in the manufacturing industry over the last 30 some years (see Table 2).⁵² While this - behind EC protectionist barriers - helped to limit the erosion of competitiveness vis-à-vis LDCs, only the textile industry was able to defend its location in Germany via a strong push into the capital-intensive direction. The clothing industry, lacking the possibility to substantially substitute capital for opted labor, ever more for overseas production, in recent years almost investing as much abroad as needed for replacement investment in Germany. But even more important for the clothing industry - and thus increasingly important for the textile industry - was the tapping of production facilities offshore, i.e. to the east and south of the EU, to have German fabrics assembled into clothing and then to re-import them. This internationalization of the German T+C industry was shown in the survey of major T+C firms to have been accompanied over the last decade by a

⁵² Overshadowing West Germany's adjustment in the past five years has, of course, been the adjustment or rather transformation in East Germany. From 1989 through the end of 1993 employment in the East German T+C industry decreased by 90 percent. After being just 15 percent smaller the West Germany's T+C employment in 1989 by the end of 1993 it was 90 percent under West German levels. Although production did not fall quite as much in this time period (about 85 percent) and seems to have bottomed out, employment is still decreasing. Behind the virtual disappearance of the East German T+C industry lies the loss of COMECON markets (over 50 percent of production) as well as the inability to maintain the low prices of exports destined for Western Europe. Even if some textile companies in West Germany found it lucrative to invest in East Germany (i.e. investment incentives virtually covered the cost of new investments) the impact of East Germany's T+C on current developments in Germany's overall T+C industries must be viewed as being marginal. Furthermore, in the future they will be subjected to the same pressures as the West German T+C industry and hence will be reacting in a similar matter. For more information see various issues of the yearbooks of Gesamttextil and BBI.

concentration on quality which allowed the industry to successfully compete with the high-quality Italian products across major markets. However, whereas both the clothing and the textile industry stressed product differentiation as a strategy in the past 10 years, the textile industry - as noted above - opted for process innovation. In the coming years Germany T+C companies will still continue to stress quality, but place more importance on controlling distribution and on an expansion of foreign activities. The last aspect was expected to be particularly relevant in connection with offshore production in all those countries behind what used to be the "iron curtain". By moving into these countries the German T+C complex will be strategically positioned to better adjust to the forthcoming liberalization in world T+C trade.

This strategic option is being viewed and tapped by the industry to an ever greater degree, as it is a unique opportunity for both the textile and clothing industry, which together export almost as much as Italy, the number two country in the world (see Table 1). The reasons are obvious. First, the Eastern European option as a productive offshore-processing platform for clothing manufacturing is not only just now being viewed with interest, rather - as shown above - it has already been extensively pursued in recent years. New contacts are being sought and existing relationships expanded. Second, given the fact that German clothing companies, with their up-market strategies, stated that they prefer to buy the high quality textiles from German (or at least European) textile producers, the potential for the textile producers in Germany is equally large. Entrepreneurs in both industries thus feel that they could at least experience an extension of their profitable life in a high-income region like Germany. While foreshadowing a renaissance of Germany's T+C complex would surely be premature, the potential of trade ties with countries behind the former "iron curtain" are to be further strengthened and liberalized by the EU in the coming years. While the first tier of Eastern European countries (i.e. from Poland to Bulgaria) is already being integrated, the extent to which the CIS countries (i.e. the second tier of Eastern European countries) will become equally attractive depends on their ability to maintain a relatively conducive political-economic environment. If the second tier of Eastern European countries is to assume a more important role in the professed strategy of German firms to produce higher quality, fashionable apparel products in this region, then stable, predictable political-economic conditions must prevail. Although it is true per se that the clothing industry is relatively footloose, the higher the quality and fashion-content of the output, the greater the need to draw on skilled workers and the necessity to be able to depend on quick turn-around times. That the industry is flexible (footloose) was attested to by a major relocation of clothing manufacturing activities from former Yugoslavia in 1991 and 1992 to countries like Czechoslovakia, Hungary and Poland. Likewise its need to draw on a reservoir of skilled labor for the high-quality apparel products was underlined by the recent rapid expansion of production in areas in former Yugoslavia no longer directly affected by hostilities, but where cooperation in the past had been successful. For instance, Slovenia and Croatia exported 50

percent more apparel to Germany in 1993 than in 1992 and more than total Yugoslavia in the year 1992.

The fact that the German producers were already more heavily engaged in Eastern Europe than other EC countries and that certain other ties (e.g. from those expelled after WW II) existed as well, has placed them in a position to either expand their OPT purchases, increase the number of joint ventures and/or establish majority owned firms (e.g. one company converted OPT operations into a "blue chip" stock company). Since all three approaches are being used or contemplated, it is difficult to state which path will dominate. For sure, those companies which have been operating in Eastern Europe for a long period of time are convinced that further tapping this potential - generally characterized as being very good - will definitely impact on activities in the other parts of the world. This applies mainly to clothing companies which aim to supply the German or other European markets rather than those who attempt to satisfy local markets around the world. Textile companies, on the other hand, do not perceive that activities abroad, i.e. outside the EU and Europe, will be affected.

How the OPT option has actually shaped Germany's textile exports and clothing imports can be easily deduced from Diagram 3. It shows the share of Germany's textile exports to the EC and to the non-EC countries on the EC-Rim, that is to the EC's east and the south (NONECRIM), where 90 percent of Germany's OPT clothing imports are produced.⁵³ Likewise, Germany's clothing imports from these sources are shown together with those from E-Asia, by far the dominant non-European supplier. As can be seen in the diagram, by 1993 Germany's clothing imports from the NONECRIM countries surpassed those from the EC12 and - after being virtually equal in 1985 - are almost double those from the major East Asian suppliers. Supporting and of course profiting from this shift in production to locations "just over the border" is the German textile industry which - in the meantime - exports about 30 percent to these countries. However, the success with which Germany has tapping the OPT potential has been engendering discontent among those EU countries which feel that their own T+C industry is being threatened. That is, as might be expected, the OPT option is only possible because the EC permits offshore production activities in line with an EC regulation (No. 636/82) and the relevant bilateral textile and clothing trade agreements. This regulation is now in the process of being revised so as to ensure that the same offshore processing

⁵³ In 1993 over 50 percent of Germany's NONECRIM clothing imports were of OPT nature.

conditions apply across all EU countries.⁵⁴ Germany and EU countries with a more liberal interpretation would like to shape its pending revision so as to ensure that the current relatively flexible framework is not deliberalized.⁵⁵

Had it not been for the rapid expansion of OPT activities the German textile industry would no doubt be running up against a shrinking demand for its products in Europe since - for the most part - foreign operations outside of Europe were minimal. In the period 1989-92 exports to the EC expanded by below average rates or rather imports by EC countries likewise rose slower than before or than major competitors (see Tables 7 and 9). With clothing elsewhere being imported in ever larger amounts from Asia - where the yarns and cloth fabrics were usually also purchased - the textile industry was simply too far from the major apparel production locations. Transportation costs, for instance, usually outweighed any competitive advantages they may have gained by manufacturing in Germany. Since it was generally felt in the textile industry that investing in Asia embodied too large of a risk for their high quality products, the future seemed more uncertain than it always did in the past. The extent to which the trend to locate in or nearer major markets (as in the case of the USA) will prevail here, is not yet evident.

The clothing industry, on the other hand, viewed the situation with a certain degree of differentiation, depending primarily on the products demanded. Generally speaking, however, operations or purchases in Far East were seen as being unduly restricted by the MFA quotas, so that once these quotas are eliminated in the course of the agreed-upon MFA phase-out, a shift to new suppliers would take place. For the most part, however, these would tend to be of contractual rather than of FDI nature. Particular interest has been expressed vis-à-vis the potential in Southeast Asia, where not only Vietnam is being viewed as an extremely profitable new frontier. No doubt, a two track framework will evolve. Eastern Europe will be producing more higher quality garments, whereas the Far East - with a different structure of suppliers evolving (i.e. due to disappearance of quota rents and ability to determine source of purchases based on price/quality factors rather than on existence of quotas) - will deliver to the levels of demand below this. From the companies surveyed the impression was not

⁵⁴ As it stands now it is Germany, but also France and the Benelux countries, which have permitted the most liberal interpretation of regulation 636/82, whereas Italy has severely restricted its use and Greece, Portugal as well as Spain already feel threatened by the current situation. Germany accordingly accounts for almost 70 percent of the offshore clothing imports, France and the Benelux countries for another 25 percent, but Italy for only 3 percent in 1992. At both extremes, the argumentation applied was often that tapping offshore processing was in the interests of the T+C industries.

⁵⁵ It should also be noted that the German textile machinery industry has strong vested interests in backing such OPT activities as the ability to quickly and effectively interface with the textile industry has proved to be of crucial importance in maintaining its own international competitiveness [see Spinanger, 1994].

created that in any of the main exporting countries in the Far East would high-quality production soon prevail.

If there were two driving forces behind the offshore or foreign option, then wages and taxes must be mentioned. For the textile industry, however, environmental aspects are becoming more important as well as work regulations which keep upstream, capital intensive production processes from being run around the clock.⁵⁶ But since only few production processes in the textile industry can be profitably shifted out in a disembodied manner, the degree to which integrated offshore operations or OPT contracts can be established is accordingly limited. Nonetheless: the textile firms are in the process of contemplating where, how and to what extent going offshore is feasible.

While the clothing industry in Germany will continue to decline, thereby producing around a core of high quality products (but also with increasing OPT) sold primarily in European markets, the textile industry will no doubt continue its concentration on high quality and specialty products. To what extent the above mentioned negative impulses stemming from more severe environmental restrictions will promote relocation is an open question. Here again the Eastern European countries represent a possible option, just as increased OPT by the clothing industry in these countries also offers a potential for the future viability of the German textile industry. If such a symbiosis - i.e. between the OPT activities of German firms in Eastern Europe and the German textile industry - continues to develop as in most recent years, then the implications for major suppliers in Asia must be seen as being substantial.

⁵⁶ Agreements recently concluded in Germany will allow more flexibility in structuring work in line with production needs. While this will help the textile industry better utilize its capital stock (as noted above), productivity differences between Germany and developing countries have shrunk to the point where labor costs - despite the highly capital intensive processes - crucially determine competitiveness (see Table 18 for labor cost comparisons).

Appendix

Tables and Diagrams	A1-A18
Background of Survey	A19-A21
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A1

Table 1 - Textile^a and Clothing^b Exports of Selected ICs and DCs: 1965-1992 (Shares^c, Rankings^d and Growth Rates^e)

	1965		1973		1980		1985		1992		Growth rates ^f	
											1973-80	1980-92
Textiles and Clothing												
China	2.5	(11)	2.9	(12)	4.3	(11)	6.9	(3)	10.2	(1)	23.0*	16.2*
Italy	10.3	(2)	8.5	(2)	9.0	(2)	9.5	(1)	9.1	(2)	17.5*	8.2
Germany	8.5	(5)	11.9	(1)	9.5	(1)	8.4	(2)	9.0	(3)	12.8	7.6
Korea, Rep. of	0.5	(23)	3.6	(11)	5.3	(6)	6.6	(4)	6.1	(4)	23.3*	9.3*
Hong Kong	4.3	(10)	5.5	(7)	5.8	(5)	6.4	(5)	4.9	(5)	17.3*	6.7
Taiwan	0.7	(21)	3.8	(10)	4.4	(10)	5.7	(6)	4.7	(6)	18.7*	8.9*
France	9.3	(3)	8.2	(4)	5.9	(3)	4.6	(8)	4.7	(7)	11.2	6.0
USA	6.8	(7)	4.5	(9)	5.2	(7)	3.1	(11)	4.1	(8)	18.8*	5.0
Belgium/Luxembourg	7.2	(6)	6.8	(5)	4.7	(9)	3.5	(9)	3.6	(9)	10.5	5.7
United Kingdom	8.8	(4)	5.7	(6)	5.2	(8)	3.5	(10)	3.4	(10)	14.9	5.7
Japan	13.8	(1)	8.4	(3)	5.8	(4)	5.4	(7)	3.1	(11)	10.4	2.7
Total ^g	72.7		69.9		65.8		63.6		62.8		15.3	7.8
World ^h	10.30		33.27		95.59		105.55		247.60		16.5	8.3
Textiles												
Germany	8.6	(4)	13.7	(1)	11.3	(1)	10.7	(1)	11.9	(1)	11.0	6.8*
Italy	8.2	(5)	6.9	(5)	7.4	(3)	8.4	(3)	8.7	(2)	15.4*	7.7*
China	2.7	(10)	3.4	(9)	4.5	(8)	6.6	(4)	7.4	(3)	19.0*	10.7*
Korea, Rep. of	0.4	(23)	2.0	(16)	4.0	(9)	4.5	(8)	7.0	(4)	25.9*	11.6*
Taiwan	0.6	(20)	2.5	(12)	3.2	(11)	4.4	(9)	6.5	(5)	18.0*	12.8*
Japan	14.5	(1)	11.0	(2)	9.2	(2)	8.8	(2)	6.1	(6)	11.2	2.7
Belgium/Luxembourg	7.6	(6)	7.6	(4)	6.4	(5)	5.3	(5)	5.5	(7)	11.2	5.1
France	9.3	(3)	7.6	(3)	6.1	(6)	5.1	(6)	5.4	(8)	10.6	5.1
USA	6.8	(8)	5.5	(8)	6.7	(4)	4.5	(7)	5.0	(9)	17.4*	3.8
United Kingdom	9.9	(2)	6.6	(6)	5.6	(7)	3.8	(10)	3.7	(10)	11.5	2.8
Hong Kong	1.8	(13)	2.0	(13)	1.6	(15)	1.8	(14)	1.9	(15)	10.6	7.8*
Total ^g	70.5		68.9		66.0		63.8		69.1		13.4	6.9*
World ^h	7.77		22.12		54.99		56.35		116.80		14.1	6.5
Clothing												
China	2.0	(12)	2.1	(12)	4.0	(8)	7.3	(4)	12.8	(1)	32.3*	21.4*
Italy	16.6	(1)	11.7	(2)	11.2	(2)	10.8	(2)	9.4	(2)	19.7	8.5
Hong Kong	11.9	(2)	12.4	(1)	11.4	(1)	11.7	(1)	7.6	(3)	19.0	6.5
Germany	8.3	(5)	8.2	(4)	7.0	(4)	5.8	(6)	6.4	(4)	17.9	9.3
Korea, Rep. of	0.8	(17)	6.7	(5)	7.2	(3)	9.0	(3)	5.2	(5)	21.6*	7.2
France	9.5	(4)	9.3	(3)	5.6	(6)	3.9	(7)	4.0	(6)	11.9	7.2
USA	6.7	(6)	2.6	(11)	3.1	(9)	1.5	(15)	3.2	(7)	23.8*	10.6*
Taiwan	0.8	(18)	6.4	(6)	5.9	(5)	7.1	(5)	3.1	(9)	19.2	4.5
United Kingdom	5.5	(8)	3.9	(8)	4.6	(7)	3.1	(8)	2.8	(12)	23.1*	5.7
Belgium/Luxembourg	5.9	(7)	5.1	(7)	2.4	(10)	1.5	(12)	1.8	(16)	8.4	7.4
Japan	11.5	(3)	3.3	(10)	1.2	(16)	1.5	(14)	0.5	(38)	4.1	2.3
Total ^g	79.4		71.7		63.8		63.1		56.9		18.4	9.2
World ^h	2.53		11.15		40.60		49.20		130.80		20.4	10.2

^aSITC 65, Rev. 2. - ^bSITC 84, Rev. 2. - ^cShare of world trade. - ^dRanking based on values in 1992; covering all textile and clothing exporting countries; coverage dictated by top 11 countries exporting textiles and clothing in 1992; ranking in given year in (). - ^eAverage annual growth rate. - ^fA "*" designates an above average growth rate. - ^gSum of shares of listed countries. - ^hIn bill. US\$.

Source: Own calculations based on special UNCTAD tabulations and GATT [1993a].

Table 2 - The German Textile and Clothing Industry: Production Units^a and Employment^a by Establishment Size^b: 1960 - 1992

Employees/ Establishment	Production Units				Employees				Employees / Production Unit			
	1960	1970	1980	1992	1960	1970	1980	1992	1960	1970	1980	1992
Textiles												
1 - 19	49.1	50.5	52.3	55.6	3.6	3.4	4.5	5.1	6.2	5.6	6.4	6.3
20 - 99	31.1	29.9	29.1	26.8	16.9	16.8	18.8	18.9	46.0	47.5	48.1	48.4
100 - 499	16.4	16.1	16.1	15.3	42.1	41.5	46.1	47.1	217.3	216.9	213.1	211.3
500 - 999	2.4	2.5	1.9	1.7	19.6	20.2	18.0	16.7	682.6	678.9	690.5	669.8
>= 1000	1.0	0.9	0.6	0.6	17.7	18.2	12.5	12.2	1573.2	1626.2	1460.9	1404.8
Total	6817	6024	4237	2855	576762	508646	314583	196008	84.6	84.4	74.2	68.7
Clothing												
1 - 19	45.4	47.8	49.3	57.8	6.4	6.6	7.7	10.2	7.4	6.9	7.2	6.4
20 - 99	40.7	39.1	38.8	28.9	35.1	36.2	39.7	36.2	45.4	46.3	47.2	45.3
100 - 499	13.1	12.3	11.5	8.1	45.8	45.9	45.9	43.2	184.9	186.0	184.9	191.9
500 - 999	0.8	0.7	0.5	0.4	10.0	9.3	6.8	7.1	672.9	635.2	665.7	656.1
>= 1000	0.1	0.1	-	0.1	2.7	2.0	-	3.3	1365.1	1298.3	-	1297.8
Total	7578	7828	5764	4342	398916	391391	266059	156863	52.6	50.0	46.2	36.1
Manufacturing												
1 - 19	57.4	56.6	53.6	53.2	4.3	3.9	4.0	4.0	6.2	6.2	6.5	6.2
20 - 99	28.7	28.5	31.8	31.8	15.7	14.6	16.8	17.5	45.2	45.7	45.9	46.2
100 - 499	11.2	11.9	11.8	12.3	28.2	28.0	28.5	30.5	209.1	211.4	209.7	209.1
500 - 999	1.6	1.7	1.6	1.7	13.0	13.2	12.8	13.7	689.7	694.0	692.6	686.9
>= 1000	1.2	1.3	1.2	1.1	38.8	40.2	37.9	34.3	2766.9	2780.7	2744.8	2594.8
Total	102162	99313	91802	88133	8449711	8881660	7973028	7404685	82.7	89.4	86.9	84.0

^aIn % of total. - ^b Number of employees per establishment.

Source: Own calculations based on Statistisches Bundesamt, Produzierendes Gewerbe, Fachserie 4, Reihe 4.1.2, various issues; only West Germany, incorporating extra data on small establishments (1-19 employees).

Table 3 - Regional Distribution of Employment in the West German Textile, Clothing and Manufacturing Industries: 1962 + 1992

Federal States	1962			1992			Change 1962/92 (%)
	Number	Share (%) in		Number	Share (%) in		
		Total	Manf.		Total	Manf.	
	(1)	(2)	(2)	(3)	(4)	(4)	(5)
TEXTILES							
Bavaria	112760	19.45	8.9	43922	23.13	3.1	-61.05
North Rhine-Westphalia	200990	34.66	7.0	54434	28.67	2.7	-72.92
Baden Württemberg	163171	28.14	11.2	55903	29.44	3.7	-65.74
Lower Saxony	39727	6.85	5.3	13752	7.24	2.0	-65.38
Hesse	27740	4.78	4.1	8596	4.53	1.3	-69.01
Berlin (West)	4603	0.79	1.5	3177	1.67	1.9	-30.98
Other States	30873	5.32	3.0	10104	5.32	1.1	-67.27
Total	579864	100.00	6.9	189888	100.00	2.6	-67.25
CLOTHING							
Bavaria	98413	25.64	7.8	52343	35.67	3.6	-46.81
North Rhine-Westphalia	108466	28.26	3.8	38759	26.41	2.0	-64.27
Baden Württemberg	56267	14.66	3.9	21857	14.89	1.4	-61.15
Lower Saxony	35768	9.32	4.8	13733	9.36	2.0	-61.61
Hesse	29559	7.70	4.3	9114	6.21	1.4	-69.17
Berlin (West)	22247	5.80	7.3	2873	1.96	1.7	-87.09
Other States	33079	8.62	3.2	8070	5.50	0.9	-75.60
Total	383799	100.00	4.6	146749	100.00	2.0	-61.76
MANUFACTURING							
Bavaria	1261522	15.11		1436524	19.59		13.87
North Rhine-Westphalia	2852985	34.17		1982941	27.04		-30.50
Baden Württemberg	1455870	17.44		1509465	20.59		3.68
Lower Saxony	744420	8.92		673699	9.19		-9.50
Hesse	684711	8.20		644710	8.79		-5.84
Berlin (West)	303274	3.63		168946	2.30		-44.29
Other States	1045455	12.52		916292	12.50		-12.35
Total	8348237	100.00		7332577	100.00		-12.17
<p>Note: Columns 1 and 3 are % shares of respective states in national industry. Columns 2 and 4 are shares of textile/clothing industry in given state as % of manufacturing industry in given state. Column 5 is % changes in number employed over total period.</p> <p>Rankings of states individually listed based on sum of textile and clothing employment in 1992.</p>							

Source: Own calculation based on Gesamttextil, *Jahrbuch* [1993] and Statistisches Bundesamt [1963].

Table 4 - Production Trends and Structure of the West German Textile and Clothing Industry: 1970-1992

	1970	1980	1982	1985	1989	1990	1991	1992	Growth rates ^a		
									1970-1982	1982-1989	1989-1992
Production Indices^b											
Manufacturing	82.0	100.0	94.6	103.0	115.0	121.2	124.9	123.2	1.2	2.8	2.3
Man-made fibres	72.3	100.0	97.3	109.5	112.1	110.8	106.1	105.9	2.5	2.0	-1.9
Textiles	96.8	100.0	88.9	95.3	94.3	96.1	95.5	88.3	-0.7	0.8	-2.2
Clothing	120.7	100.0	83.2	81.3	72.4	71.8	71.2	63.4	-3.1	-2.0	-4.3
Value of Production											
Textiles											
Total ^{c,d}	40.32	36.87	34.70	33.67	34.19	34.62	35.00	32.96	-1.2	-0.2	-1.2
% thereof: ^e											
Man-made fibres	8.4	13.1	14.2	14.1	14.8	13.0	12.6	13.0	3.2	0.3	-5.5
Spinning, wool	6.1	5.9	5.0	3.9	3.2	2.9	2.7	2.9	-2.9	-2.7	-3.9
Spinning, cotton	7.9	6.5	6.5	6.2	5.9	5.6	5.1	5.0	-2.9	-1.5	-6.9
Weaving, wool	4.4	4.2	2.8	3.9	4.2	4.2	4.2	4.1	-5.0	6.1	-2.4
Weaving, cotton	16.5	16.2	16.1	11.3	9.5	9.7	9.1	9.0	-1.5	-7.4	-2.9
Home furnishing fabrics	8.5	10.2	9.4	11.9	12.8	13.5	14.6	14.1	-0.4	4.3	1.8
Knitting	20.7	17.9	16.5	16.5	14.7	15.1	16.8	16.3	-3.1	-1.8	2.2
Clothing											
Total ^c	21.15	20.71	18.23	18.63	19.24	20.36	21.03	19.31	-1.1	0.8	0.1
% thereof: ^e											
Menswear	22.4	19.3	18.9	18.5	18.6	19.0	18.7	18.3	-2.6	0.5	-0.3
Womenswear	39.0	46.8	49.4	50.9	48.8	47.5	48.2	47.6	0.8	0.6	-0.7
Undergarments	13.2	8.1	7.3	6.4	5.5	5.8	5.3	6.0	-6.0	-3.2	2.8
Occupational clothing/sportswear	10.4	8.1	7.5	7.7	7.9	7.7	7.9	7.7	-3.8	1.4	-0.8

^aAnnual growth rates of turnover in 1980 prices. - ^b1980 = 100. - ^cBill. DM, 1980 prices; based on turnover (excluding VAT) deflated by producer price indices. - ^dIncludes man-made fibres. - ^e% share of total.

Source: Own calculations based on Gesamttextil, *Jahrbuch* [various issues]; BBI [various issues]; Statistisches Bundesamt, *Statistisches Jahrbuch* [various issues].

Table 5 - The Textile and Clothing Industry in Germany - Key Indicators^a: 1980-1990

	1980					1990					% change 80 - 90				
	I	TKC	T	K	C	I	TKC	T	K	C	I	TKC	T	K	C
Sales ^b	1196.50	53.74	33.03	8.32	20.71	1823.90	68.07	41.30	8.94	26.77	52.4	27.7	25.0	7.5	26.3
Employment ^c	7660.00	552.70	303.90	90.80	248.80	7412.00	373.60	209.50	53.00	164.10	-3.2	-32.4	-31.1	-41.6	-34.0
Exports ^b	294.60	16.52	12.20	2.98	4.33	572.70	33.22	21.95	4.47	11.27	94.6	101.1	79.9	50.0	160.3
Imports ^b	177.40	26.50	16.67	6.30	9.83	395.90	49.60	26.91	12.67	22.70	123.2	87.2	61.4	101.1	130.9
Trade balance ^b	117.20	-9.98	-4.47	-3.32	-5.50	176.80	-16.38	-4.96	-8.20	-11.43	50.9	-64.1	-11.0	-147.0	-107.8
Wage costs ^d	55.61	61.99	60.71	n.a.	64.13	66.33	74.47	67.75	n.a.	89.13	19.3	20.1	11.6	n.a.	39.0
Investment ^e	6.89	2.87	4.11	n.a.	1.37	13.08	6.93	10.06	n.a.	2.86	89.8	141.5	144.8	n.a.	108.8
Producer prices	100.00	100.00	100.00	100.00	100.00	122.70	125.30	122.20	128.80	129.20	22.7	25.3	22.2	28.8	29.2

^a I: manufacturing industry / T: textile / K: knitting / C: clothing. Note: the textile industry includes knitting. - ^b DM billions - current values. - ^c 1,000. - ^d Wages + salary costs/gross value added. - ^e Gross investment/employee; 1000 DM

Source: Own calculations based on Götzig et al. [1991]; Gesamtmasche [1991].

Table 6 - Labor Productivity Trends^a in Selected West German Industries: 1970 - 92

	1970-92 ^b	1970-79 ^c	1980-92 ^c
Manufacturing	2.5	3.6	2.4
Electrotechnical	3.8	5.1	3.2
Textile	3.4	4.8	3.2
Clothing	1.3	3.3	0.8

^aAnnual growth rates. - ^bBased on (log) trend estimates over entire time period. - ^cBased on statistically significantly different (log) trend estimates over the two periods.

Source: Own calculations based on Görzig et al. [1993, p. 85].

Table 7 - German Textile (SITC 65) and Clothing (SITC 84) Exports by Major Partners - Shares and Growth Rates 1980-1992

Partner	Shares (%)						Growth rates (%)	
	1980	1985	1987	1989	1990	1992	1980/89	1989/92
TEXTILES								
WORLD (mill.US\$)	6255	6003	9633	10999	13253	13856	6.47	7.76
USA	1.53	3.79	3.32	2.81	2.62	2.71	13.92	6.61
CANADA	0.39	0.85	0.60	0.56	0.47	0.38	10.88	-5.20
JAPAN	1.16	0.94	1.03	1.19	1.26	0.89	6.82	-2.37
EC12	56.03	55.76	57.77	57.33	55.80	52.62	6.75	4.73
BNL	20.80	17.18	17.61	16.41	16.20	14.84	3.71	4.17
FRANCE	14.27	11.18	11.44	11.10	11.25	10.80	3.55	6.86
ITALY	7.87	8.82	10.05	11.04	10.47	9.30	10.56	1.67
UNITED KINGDOM	6.19	10.32	8.86	8.42	7.42	6.80	10.17	0.41
EFTA	18.32	16.74	16.81	15.44	14.70	13.32	4.46	2.35
SWITZERLAND	5.75	5.02	5.28	4.84	4.66	4.18	4.46	2.06
REST	22.04	21.12	19.94	22.17	24.71	29.70	6.54	18.96
CLOTHING								
WORLD (mill.US\$)	2910	2883	5049	5666	7085	8354	7.69	14.05
USA	0.81	3.83	2.49	2.47	2.44	2.13	21.99	8.49
CANADA	0.24	1.22	1.09	1.13	1.13	0.77	27.90	0.44
JAPAN	0.44	0.66	0.73	1.10	1.19	1.18	19.31	16.96
EC12	61.46	53.48	56.60	55.84	56.30	57.97	6.54	15.55
BNL	44.85	31.41	33.02	29.00	28.64	28.44	2.59	13.29
FRANCE	7.16	6.57	7.87	8.05	8.02	8.80	9.10	17.58
ITALY	1.90	2.65	3.14	3.51	3.70	4.39	15.31	24.83
UNITED KINGDOM	4.04	7.83	7.10	8.82	9.17	8.22	17.45	11.10
EFTA	28.62	32.29	32.46	31.76	30.42	26.95	8.94	8.14
SWITZERLAND	13.10	13.04	13.79	13.45	12.51	11.04	8.01	7.05
REST	8.34	8.25	6.47	7.52	8.36	10.85	6.45	27.42

Note: REST = World - (USA+CAN+JPN+EC12+EFTA+AUS+NZL). In other words it covers primarily LDCs.

Source: Own calculations based on COMTRADE computations.

Table 8 - German Textile (SITC 65) Clothing (SITC84) Imports and Foreign Transactions^a (FTs) by Major Countries and Groupings - Shares and Growth Rates 1980 - 1992

Partner (FTs)	Shares (%)						Growth rates (%)	
	1980	1985	1987	1989	1990	1992	1980/89	1989/92
TEXTILE								
WORLD ^b (162/28)	6810	4963	7958	8912	11387	12397	3.03	11.63
USA (50/15)	2.21	2.21	2.37	2.55	2.65	2.45	4.66	10.10
JAPAN	2.18	2.01	2.18	1.89	1.87	1.84	1.45	10.64
EEC 12 (50/15)	59.70	59.60	58.02	58.51	59.87	59.93	2.80	12.53
BENELUX ^c	22.12	19.84	19.79	19.41	20.43	20.80	1.55	14.22
FRANCE (11/2)	12.06	10.18	9.43	9.67	9.35	8.73	0.54	7.88
ITALY	15.94	19.66	19.10	19.88	20.48	20.03	5.60	11.91
UK (7/-)	4.40	3.61	3.85	4.08	4.16	4.33	2.18	13.87
EFTA 6 (34/5)	10.48	12.68	13.54	12.63	12.32	11.09	5.19	6.89
SWITZERLAND (13/3)	5.32	6.49	6.66	5.86	5.51	4.62	4.15	3.16
E. EUROPE (-/1)	2.38	2.37	2.27	2.02	2.33	3.58	1.21	35.00
DEVELOPING	22.90	21.07	21.52	22.22	20.81	20.93	2.69	9.44
CHINA (-/1)	1.39	2.31	2.47	2.77	2.75	2.83	11.21	12.48
EA-NICs ^e +MACAU	1.98	2.05	2.14	2.52	2.56	2.20	5.82	6.65
SEA ^d	0.82	0.94	0.98	1.28	1.37	1.90	8.31	27.12
SA+MAURITIUS (-/1) ^e	4.86	4.46	4.28	4.49	4.10	4.61	2.12	11.99
NORTH AFRICA ^f	1.27	0.83	0.94	0.78	0.57	0.46	-2.46	-6.07
TURKEY (-/1)	1.69	3.12	2.79	2.94	2.67	2.52	9.59	6.05
YUGOSLAVIA	0.40	1.15	0.98	1.04	1.08	0.48	14.53	-13.37
BRAZIL	1.57	1.88	1.12	0.90	0.78	0.63	-3.11	-0.72
OTHER DEV'G	7.54	3.18	4.49	4.49	3.89	4.42	-2.73	11.70
CLOTHING								
WORLD ^b (158/14)	8369	7052	14173	14716	20129	24848	6.47	19.08
USA (7/5)	1.21	0.49	0.32	0.39	0.50	0.74	-6.20	47.74
JAPAN	0.74	0.44	0.41	0.44	0.41	0.34	0.51	9.20
EEC 12 (39/4)	45.80	41.83	39.83	36.07	35.81	34.80	3.68	17.66
BENELUX	3.94	3.73	3.59	3.91	4.16	3.91	6.38	19.06
FRANCE (14/1)	5.94	3.76	3.35	3.18	3.24	3.14	-0.66	18.58
ITALY (8/-)	21.75	21.87	19.98	16.07	16.08	15.23	2.95	16.98
UK	2.41	1.70	1.83	1.59	1.76	2.01	1.67	28.73
EFTA 6 (40/3)	5.33	4.84	4.35	3.91	3.39	3.17	2.88	11.05
SWITZERLAND (12/1)	1.60	1.38	1.20	1.23	1.09	1.01	3.42	11.46
E. EUROPE (-/1)	6.86	6.36	5.01	5.34	5.85	10.80	3.56	41.06
DEVELOPING	39.83	46.02	50.05	53.82	54.02	50.09	9.92	16.24
CHINA	1.69	2.85	3.78	5.29	6.92	8.45	20.83	39.21
HONG KONG (2/-)	11.55	9.56	8.91	8.60	7.52	6.29	3.04	7.32
KOREA REP	5.46	5.25	5.95	4.27	3.16	2.51	3.58	-0.22
MACAU	1.24	1.29	1.21	1.14	1.02	0.87	5.51	8.75
TAIWAN	2.71	2.54	2.67	1.91	1.36	1.31	2.44	4.85
SEA (3/-) ^d	2.76	2.55	3.30	4.14	4.01	4.74	11.41	24.59
SA+MAURITIUS (3/-) ^e	2.55	3.46	3.78	5.00	5.65	5.48	14.76	22.73
NORTH AFRICA (26/-) ^f	1.97	2.61	2.79	3.28	3.48	3.46	12.66	21.22
TURKEY	0.87	5.83	8.34	9.34	9.84	10.08	38.58	22.14
YUGOSLAVIA	5.04	7.67	7.20	8.73	8.62	3.91	13.17	-0.38
BRAZIL	0.44	0.31	0.24	0.27	0.24	0.28	0.62	21.22
OTHER DEV'G	2.53	1.46	1.34	1.35	1.66	2.20	-0.70	53.90

^a The figures in (/) following the partner's name represent foreign transactions (FTs) by German companies in the respective partner. The figure to the left of the "/" represents the number of German firms (foreign direct investments) at the end of 1985 as published by Gesamttextil based on Bundesbank data. The figure to the right of the "/" represents the number of new transactions (including contracts, etc.) in the period 1980 - 1989 as published by FAST. ^b Mill. US\$. ^c EA-NICs includes Hong Kong, Korea and Taiwan. ^d SEA includes Indonesia, Malaysia, Philippines, Singapore and Thailand. ^e SA includes Bangladesh, India, Pakistan and Sri Lanka. ^f North Africa includes Morocco and Tunisia.

Source: Trade data: Own calculations based on COMTRADE computations. FTs - FAST [1990]; Gesamttextil, Textilbericht [various issues].

Table 9 - Imports of Textiles (SITC 65) and Clothing (SITC 84) from Germany, Italy and Selected Country Groupings^a for EC, EFTA, USA and Japan - Shares and Growth Rates 1980 -1992

Importer Source	Shares (%)						Growth Rates (%)	
	1980	1985	1987	1989	1990	1992	1980/89	1989/92
Textiles (SITC 65)								
EUROPEAN EC12								
EC12	66.10	68.27	67.29	67.33	67.34	67.48	5.48	8.07
GERMANY, W.	13.98	16.14	16.62	16.57	16.21	15.21	7.27	4.97
ITALY	11.36	13.40	12.95	13.06	13.33	13.87	6.91	10.18
NONECRIM	4.97	5.90	6.05	5.94	5.67	5.83	7.38	7.31
OTHER DEV'ING	14.09	12.42	12.96	13.78	14.20	14.39	5.01	9.56
FRANCE								
EC12	74.33	73.81	72.91	72.89	72.72	73.01	4.33	6.93
GERMANY, W.	20.83	18.35	18.61	18.36	18.61	18.51	3.10	7.16
ITALY	17.26	21.50	20.07	19.41	19.46	19.17	5.93	6.44
NONECRIM	4.11	5.14	5.38	4.63	4.51	4.71	5.96	7.49
OTHER DEV'ING	11.01	10.25	10.50	11.44	11.68	11.90	5.00	8.27
ITALY								
EC12	56.29	60.07	59.06	59.02	59.15	57.63	8.59	1.80
GERMANY, W.	18.35	21.57	22.63	23.62	23.29	22.50	11.09	0.96
NONECRIM	8.36	10.04	10.14	10.15	9.50	9.61	10.37	0.74
OTHER DEV'ING	17.35	15.48	15.36	16.70	16.79	17.97	7.56	5.16
UNITED KINGDOM								
EC12	58.02	67.18	64.02	65.13	63.89	58.54	7.65	2.71
GERMANY, W.	10.81	16.19	14.92	15.54	14.77	11.62	10.64	-5.44
ITALY	10.25	11.77	11.30	11.47	10.79	10.51	7.61	1.18
NONECRIM	2.79	3.65	4.60	5.07	4.68	5.26	13.59	5.45
OTHER DEV'ING	15.43	13.24	15.74	14.48	16.33	18.21	5.52	12.44
EFTA								
EC12	64.50	68.19	68.59	69.66	70.33	70.15	3.18	3.22
GERMANY, W.	25.53	28.22	29.26	30.11	30.57	30.17	4.19	3.05
ITALY	8.79	10.73	10.31	10.56	11.12	11.06	4.40	4.58
NONECRIM	4.61	4.49	4.56	4.21	3.93	3.83	1.28	-0.21
OTHER DEV'ING	9.68	8.80	9.87	9.67	9.73	10.60	2.28	6.19
JAPAN								
EC12	24.40	20.88	24.23	23.94	29.14	22.96	11.31	-3.34
GERMANY, W.	4.43	2.94	3.13	2.75	3.73	3.32	5.80	4.39
ITALY	8.60	8.17	10.49	12.24	14.62	10.64	16.02	-6.46
NONECRIM	0.69	0.44	0.82	1.15	0.99	0.60	18.03	-20.94
OTHER DEV'ING	62.69	68.84	65.40	64.74	58.36	66.22	11.89	-1.25
USA								
EC12	26.29	28.24	25.85	28.24	27.51	23.56	11.52	2.78
GERMANY, W.	3.50	4.37	4.37	4.82	4.99	4.52	14.66	6.89
ITALY	8.36	9.12	7.90	8.42	7.49	6.50	10.73	0.17
NONECRIM	3.25	3.11	4.53	3.59	3.39	4.14	10.75	14.53
OTHER DEV'ING	49.87	47.28	49.93	50.00	51.54	54.65	10.67	12.46

Continued on next page

Table 9 continued

Importer Source	Shares (%)						Growth Rates (%)	
	1980	1985	1987	1989	1990	1992	1980/89	1989/92
Clothing (SITC 84)								
EUROPEAN EC12								
EC12	53.31	52.87	49.77	47.19	47.27	44.04	5.74	15.82
GERMANY, W.	8.06	7.83	7.29	7.75	7.48	7.08	6.71	15.01
ITALY	17.10	18.86	17.26	14.76	14.31	12.59	5.44	12.41
NONECRIM	11.54	15.82	16.75	18.55	19.75	20.16	12.98	21.86
OTHER DEV'ING	27.72	26.18	28.94	30.01	28.92	31.96	8.13	21.04
FRANCE								
EC12	59.04	58.16	52.40	47.22	43.98	37.80	7.63	6.85
GERMANY, W.	6.12	4.47	4.12	3.78	3.37	3.23	4.59	9.13
ITALY	30.02	32.40	27.69	23.60	21.07	16.61	7.42	2.37
NONECRIM	13.85	17.74	19.56	23.28	26.20	25.74	16.88	19.00
OTHER DEV'ING	21.44	20.61	24.92	26.71	26.49	33.29	13.06	23.94
ITALY								
EC12	46.53	51.30	44.00	43.67	46.75	40.11	10.18	24.85
GERMANY, W.	6.36	9.45	9.38	8.89	9.34	8.29	15.15	25.49
NONECRIM	13.71	14.66	13.59	13.82	13.21	18.77	11.05	42.26
OTHER DEV'ING	27.53	25.23	32.85	32.45	30.91	34.21	13.00	30.71
UNITED KINGDOM								
EC12	33.38	43.58	40.29	38.57	40.82	36.36	9.96	8.63
GERMANY, W.	4.66	7.45	6.54	8.53	9.19	8.28	15.72	9.68
ITALY	8.71	12.84	10.52	9.27	8.68	6.75	8.97	-0.36
NONECRIM	5.84	7.71	7.06	7.59	7.85	8.27	11.41	13.99
OTHER DEV'ING	49.37	42.25	47.65	49.45	46.82	50.89	8.23	11.85
EFTA								
EC12	57.42	66.11	65.04	64.27	65.30	61.29	8.01	7.18
GERMANY, W.	16.92	18.72	18.60	18.82	18.89	18.27	7.93	7.83
ITALY	13.83	17.08	17.87	16.25	16.28	14.35	8.59	4.47
NONECRIM	3.65	3.64	4.06	4.67	5.15	7.10	9.63	25.25
OTHER DEV'ING	17.70	18.43	21.17	22.84	22.37	25.54	9.72	13.02
JAPAN								
EC12	20.84	14.41	12.60	15.14	20.36	13.13	17.50	2.68
GERMANY, W.	0.70	0.86	0.68	0.61	0.85	0.73	20.07	14.02
ITALY	10.83	8.48	7.57	9.44	13.67	8.64	19.91	4.53
NONECRIM	0.23	0.14	0.10	0.42	0.47	0.23	30.14	-11.20
OTHER DEV'ING	71.36	82.41	84.00	81.36	74.82	81.06	23.54	7.54
USA								
EC12	6.36	9.45	8.23	6.90	6.82	4.85	16.90	-3.88
GERMANY, W.	0.34	0.65	0.53	0.47	0.50	0.41	20.16	2.87
ITALY	2.70	4.54	4.21	3.59	3.42	2.75	19.55	-1.14
NONECRIM	1.65	2.12	2.75	2.91	2.96	2.92	23.43	8.14
OTHER DEV'ING	87.62	83.38	85.35	87.91	88.31	90.13	15.90	8.95

^aNONECRIM designates non-EC developing countries lying on the rim of the EC. Thus NONECRIM = all former Eastern European COMECON members + Yugoslavia + Turkey + Israel + Egypt + Tunisia + Morocco; OTHER DEV'ING = all non-EC countries - NONECRIM.

Source: Own calculations based on COMTRADE computations.

Table 10 - Foreign Direct Investment (FDI) Activities of German Companies - Comparison with Textile and Clothing (T+C) Industries

	1978	1982	1985	1987	1988	1989	1990	1991	1992	Averages	
										1978-89	1989-92
Amount of FDI: ^a										% annual change ^e	
1. Total	43508	95400	130512	141031	167205	194908	221744	253453	275296	14.1	12.2
2. Manufacturing	36604	55105	77510	84413	101019	105006	116580	134374	141534	9.7	10.5
3. Textiles	262	317	430	476	647	806	975	1210	1368	10.6	19.3
4. Clothing	188	287	278	261	308	472	456	503	777	8.3	18.1
No. of FDI companies: ^b											
5. Total	4644	5575	6068	6289	6478	6758	7080	7428	7560	3.5	3.8
6. Manufacturing	1682	1920	2082	2135	2192	2270	2358	2495	2555	2.8	4.0
7. Textiles	77	77	79	80	90	88	92	92	99	1.2	4.0
8. Clothing	70	83	82	70	67	72	68	73	76	0.3	1.8
FDI investment quota: ^c										∅ Shares ^d	
9. Total manufacturing	-	9.2	13.7	4.8	22.0	0.1	12.4	17.8	7.7	12.4	9.5
10. Textiles	-	1.2	2.7	1.3	9.1	4.6	7.7	11.5	8.5	3.6	8.1
11. Clothing	-	7.8	-0.9	-2.2	11.8	30.7	-6.4	10.0	63.7	4.3	24.5
T+C investment indicators:											
12. T+C FDI in % of man. FDI ^e	1.30	1.10	0.90	0.90	1.00	1.22	1.23	1.27	1.52	1.04	1.36
13. T+C cap. stock in % of man. cap. stock ^f	5.89	5.24	4.86	4.63	4.52	4.42	4.34	4.24	4.13	5.03	4.28

^aIn Mill. DM; stock of assets as of end of year. Data on FDI amounts beginning in 1989 not comparable with earlier years since changes in reporting criteria made. However, % changes 1978-89 calculated using unrevised data not shown in table. - ^bNumber of companies as of end of year. - ^cAbsolutely change in FDI stock in % of sum of domestic investment in period. - ^dFor the periods through 1988 and 1989-92. - ^eLines 3+4 in % of line 2. - ^fSum of domestic T+C capital stock as % of domestic manufacturing capital stock.

Source: Own calculations based on Deutsche Bundesbank [various years] for all FDI data and Görzig et al. [1993] for denominators in lines 9-11 (Table 74) and line 13 (Table 42).

Table 11 - Foreign Investment Activities^a of Surveyed Companies: Industries by Main Regions^b - 1980/90

	Total	EUR	EE	ANICs	Oth. LDCs	ICs, Unall.	Total	EUR	EE	ANICs	Oth. LDCs	ICs, Unall.
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
	FDI-Production						ICA-Production					
	1980											
Total	37	23	0	2	10	2	28	2	6	8	2	10
Clothing	4	2	0	0	1	1	18	1	2	5	2	8
Knit./Tex.	33	21	0	2	9	1	10	1	4	3	0	2
Knitting	33	21	0	2	9	1	10	1	4	3	0	2
Textile	0	0	0	0	0	0	0	0	0	0	0	0
	1990											
Total	40	18	6	2	10	4	114	5	44	14	14	37
Clothing	14	5	4	0	4	1	64	2	13	10	9	30
Knit./Tex.	26	13	2	2	6	3	50	3	31	4	5	7
Knitting	24	11	2	2	6	3	48	3	31	4	5	5
Textile	2	2	0	0	0	0	2	0	0	0	0	2
	FDI-Commercial						ICA-Commercial					
	1980											
Total	3	1	0	1	0	1	0	0	0	0	0	0
Clothing	2	0	0	1	0	1	0	0	0	0	0	0
Knit./Tex.	1	1	0	0	0	0	0	0	0	0	0	0
Knitting	1	1	0	0	0	0	0	0	0	0	0	0
Textile	0	0	0	0	0	0	0	0	0	0	0	0
	1990											
Total	29	14	0	3	1	11	8	1	0	0	0	7
Clothing	13	3	0	2	0	8	5	1	0	0	0	4
Knit./Tex.	16	11	0	1	1	3	3	0	0	0	0	3
Knitting	16	11	0	1	1	3	0	0	0	0	0	0
Textile	0	0	0	0	0	0	3	0	0	0	0	3

^aNumber of operations/contracts existing in 1980 or 1990 in a given region; ICA = International Contractual Agreements. -
^bEUR = EC + EFTA; EE = Eastern Europe; ANICs = Asian NICs; Oth. LDCs = mainly Asia + Mediterranean; ICs, Unall. = mainly unallocated LDCs (ANICs, other Asia), but also USA, Canada, Japan.

Source: Own calculations based on survey.

Table 12a - Origin of Products Sold (%)^a

Country/Region	Total	Clothing	Textile and Knitting	Total	Clothing	Textile and Knitting
	1980			1990		
Germany	77.44	89.23	63.97	50.93	51.70	50.06
W. Europe - total	6.09	1.96	10.82	16.61	14.62	16.67
E, GR, IRL, P	0.22	0.25	0.19	6.46	9.38	3.13
Other EC	5.47	1.71	9.77	6.94	3.29	11.11
EFTA	0.40	0.00	0.86	3.21	1.95	4.64
E. Europe	2.31	2.63	1.94	9.91	16.45	2.43
Mediterranean	0.81	1.43	0.10	1.81	2.61	0.90
Asia NICs +China	1.33	0.75	2.00	6.43	8.45	4.13
Jap. + N. America	1.69	0.00	3.63	1.35	0.00	2.89
Other	10.33	4.01	17.54	12.96	6.18	20.71

^a % of total sales originating (produced) in given market.

Source: Survey.

Table 12b - Destination of Products Sold (%)^a

Country/Region	Total	Clothing	Textile and Knitting	Total	Clothing	Textile and Knitting
	1980			1990		
Germany	67.56	68.88	66.07	58.50	59.17	57.75
W. Europe - total	19.84	19.07	20.71	31.16	30.30	32.12
E, GR, IRL, P	0.18	0.23	0.13	2.31	0.78	4.02
Other EC	16.80	14.40	19.50	24.21	23.54	24.96
EFTA	2.86	4.44	1.08	4.64	5.98	3.14
Japan	0.31	0.00	0.66	1.15	2.18	0.00
N. America	1.72	1.27	2.24	5.75	6.98	4.36
Other	10.56	10.79	10.32	3.44	1.38	5.76
For comparison ^b : % Germany	83.22	87.40	80.60	74.63	79.80	71.30

^a % of total sales to a given market. - ^b Based on aggregate data from official statistics.

Source: Survey and Statistisches Bundesamt, *Statistisches Jahrbuch* [1983, Table 9.12; 1992, Table 9.5].

Table 13 - Structure of Value of Production (%)^a

Category	Total	Clothing	Textile and Knitting	Total	Clothing	Textile and Knitting
	1980			1990		
Material inputs	44.29	41.57	47.00	42.00	38.50	46.00
Own domestic value added	43.00	45.00	41.00	31.63	28.56	35.14
Domestic subcontractors	4.14	5.29	3.00	6.20	9.13	2.86
Foreign subsidiaries - tot.	2.13	2.86	1.43	6.03	7.56	4.29
E, GR, IRL, P	0.00	0.00	0.00	1.27	1.13	1.43
EE + LDCs	1.29	2.57	0.00	3.30	6.19	0.00
Total OPT	0.14	0.29	0.00	4.97	7.31	2.29
Foreign subcontractors - tot.	5.97	5.14	6.86	12.40	15.88	8.43
E, GR, IRL, P	0.07	0.14	0.00	2.60	4.63	0.29
EE + LDCs	3.86	3.71	4.00	7.40	8.38	6.29
Total OPT	5.07	5.14	5.00	8.47	9.63	7.14
All OPT ^b	5.21	5.43	5.00	13.44	16.94	9.43
For comparison ^c						
% Material inputs	42.46	39.10	44.60	42.06	39.10	44.00
% Subcontracting	7.07	9.70	5.40	8.46	12.80	5.60
% German imports from						
ECRIM ^d		11.80	5.20		10.60	5.50
ECMED ^e		4.80	2.90		9.30	4.30
NON-ECRIM ^f		15.70	7.10		28.30	7.60
NON-ECMED		3.80	4.30		13.90	4.20
E-EURRIM		11.90	2.80		14.50	3.40
% EC imports from						
ECRIM ^d		9.20	4.80		10.00	7.40
ECMED ^e		4.80	4.40		8.60	5.80
NON-ECRIM ^f		11.50	5.00		19.80	5.70
NON-ECMED		4.10	2.80		11.90	3.50
E-EURRIM		7.40	2.20		7.90	2.20

^a% share in ex-factory value of production. - ^bSum of foreign subsidiary OPT and foreign subcontractors' OPT. - ^cBased on aggregate data from official statistics. - ^dDK+IRE+E+P+GR. - ^eE+P+GR. - ^fE-EUR (including YUG)+TUR+ISR+EGY+TUN+MOR

Source: Survey and Statistisches Bundesamt, *Statistisches Jahrbuch* [1983, Table 9.4; 1992, Table 9.3] and UNCTAD tabulations.

Table 14 - Quality Structure of Output (%)^a

Quality level	Total	Clothing	Textile and Knitting	Total	Clothing	Textile and Knitting
	1980			1990		
High	5.00	2.22	8.57	10.00	11.11	8.75
Medium-High	55.00	66.67	40.00	60.59	65.56	55.00
Medium	31.25	28.89	34.29	28.24	23.33	33.75
Medium-Low	7.50	2.22	14.29	1.18	0.00	2.50
Low	1.25	0.00	2.86	0.00	0.00	0.00

^a % share of output aimed at a particular quality level.

Source: Survey.

Table 15 - Strategic Options 1980/90 and 1991/95^a

Strategic policies	Total	Clothing	Textile and Knitting	Total	Clothing	Textile and Knitting
	1980/90			1991/95		
Quality improvement	1.82	1.56	2.13	1.56	1.44	1.71
Prod. differentiation	1.12	1.22	1.00	0.50	0.33	0.71
Distribution						
- more control	0.76	0.78	0.75	1.19	1.33	1.00
- less control	0.00	0.00	0.00	0.00	0.00	0.00
Process innovation	0.88	0.78	1.00	0.44	0.33	0.57
Decentralization:						
Domestic	0.00	0.00	0.00	0.00	0.00	0.00
LDCs	0.65	0.67	0.63	1.00	1.11	0.86
ICs	0.12	0.00	0.25	0.13	0.00	0.29
Vert. integration						
Domestic	0.18	0.22	0.13	0.06	0.00	0.14
Foreign	0.00	0.00	0.00	0.32	0.56	0.00
Brand names/ New markets	0.41	0.78	0.00	0.57	0.78	0.29

^a Average points given to specific strategic option over all firms answering question concerning the 3 most important options over the respective time periods. The surveyed firm was requested to give the most important policy 3 points; the second most important 2 points; the third most important 1 point.

Source: Survey.

Table 16 - The Bottom Line: How Do Strategic Options Compare^a: 1980/90 and 1991/95

Strategic policies	Total	Clothing	Textile and Knitting	Total	Clothing	Textile and Knitting
	1980/90			1991/95		
Quality improvement	302	568	74	356	641	70
Prod. differentiation	86	84	87	32	26	36
Distribution						
- more control	419	636	58	338	457	59
- less control	-	-	-	-	-	-
Process innovation	98	143	48	122	152	78
Decentralization:						
Domestic	-	-	-	-	-	-
LDCs	102	134	55	88	103	73
ICs	55	-	55	55	-	55
Vert. integration						
Domestic	30	48	11	11	-	11
Foreign	-	-	-	238	238	-
Brand names\	978	978	-	776	985	148
New markets						
For comparison:						
% \emptyset increase ^b	24	26	22	24	26	22

^a The numbers in the table are average % changes in sales during the period 1980-1990 for all those firms selecting a certain strategic policy as being one of the top 3 either over the period 1980-90 or in the current period 1991-1995. - ^b Based on aggregate data from official sources.

Source: Survey and Statistisches Bundesamt, *Statistisches Jahrbuch* [1983, Table 9.4; 1992, Table 9.3].

Table 17 - Strategic Options and the Quality Level of Output: 1980/90 and 1991/95

Strategic policies	Quality level of output ^a					
	Upper ^b	Medium ^c	Difference	Upper	Medium	Difference
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)
	1980-90			1991-95		
Quality improvement	55	27	28	73	26	47
Prod. differentiation	70	16	54	94	6	88
Distribution						
- more control	73	15	58	70	29	41
- less control						
Process innovation	53	33	20	64	34	30
Decentralization:						
Domestic						
LDCs	47	50	-3	55	42	13
ICs	20	80	-60	20	80	-60
Vert. integration						
Domestic	30	70	-40	35	65	-30
Foreign						
Brand names\	83	17	66	95	5	90
New markets						
For comparison:						
% share in survey	60	31	29	71	28	43

^a See Table 14 for overview. ^b Represents average % output of firms in high and medium to high quality level of output carrying out a given policy. - ^c Represents average % output of firms in medium quality level of output carrying out a given policy.

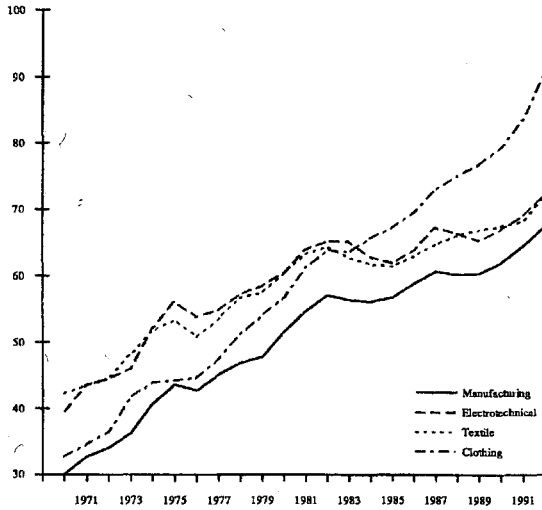
Source: Survey.

Table 18- Labor Costs and Mill Operating Time - Textile Industry

	Total labor cost/hr ^a				Mill operations ^b
	1980	1985/86	1990	1991	1985/86
Switzerland	9.65	10.84	19.23	19.23	260
Italy	9.12	8.22	16.13	17.31	262
Germany, W.	10.16	8.88	16.46	16.96	240
Japan	4.35	8.20	13.94	16.37	262
France	7.91	7.44	12.74	12.63	224
USA	6.37	8.67	10.02	10.33	255
United Kingdom	5.75	5.90	10.20	10.16	233
Spain	4.90	9.54	7.69	7.93	236
Greece	3.49	3.14	5.85	5.75	251
Taiwan	1.26	1.60	4.56	5.00	355
Portugal	1.68	1.27	2.75	3.17	249
Turkey	0.95	1.05	1.82	3.12	300
Tunisia	1.13	2.38	2.82	2.82	325
Morocco	0.85	0.59	1.28	1.37	325
Hungary	-	-	1.24	1.32	-

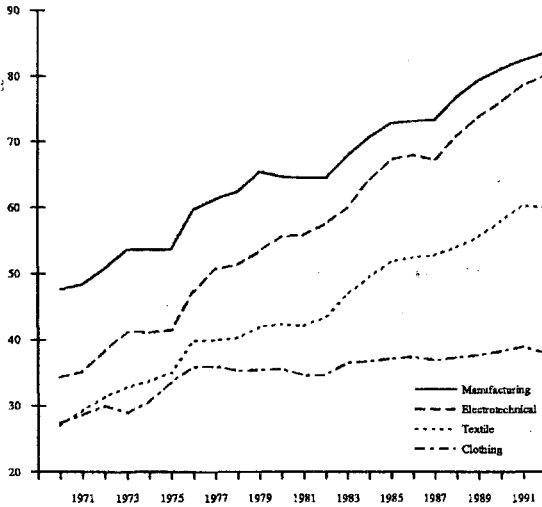
^aUS\$. - ^bDays/year.

Source: Werner International [various issues].

Diagram 1 - Unit Wage Costs^a in Selected German Industries: 1970-1992

^a Wage and salary costs in % of gross value added.

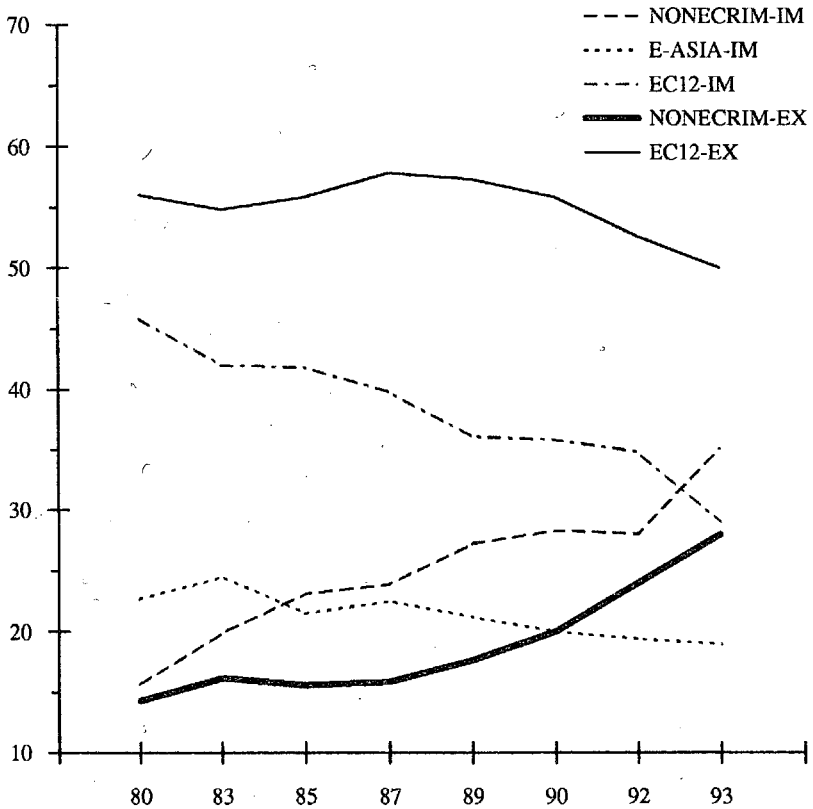
Source: Based on data from Görzig et al. [1993, Table 71].

Diagram 2- Labor Productivity^a in Selected German Industries: 1970-1992

^a Effective gross value added per employee; constant 1985 prices.

Source: Based on data from Görzig et al. [1993, Table 85].

Diagram 3 - Structure^a of Germany's Textile Exports(EX) and Clothing Imports(IM) by Selected Regions^b: 1980-93



^a % of respective total textile exports or clothing imports. ^b NONECRIM = former COMECON + Yugoslavia and Egypt + Israel + Morocco + Tunisia + Turkey; E-ASIA = China + Hong Kong + Korea + Macao + Taiwan.

Source: Own calculations based on special UNCTAD computations.

Background on the Survey

As in the case of Italy [see Navaretti, Perosino, 1992] the German survey intended to cover a total of 30 firms from the T and C complex, i.e. 15 from each industry. While generally trying to ensure that each industry sample roughly reflected the structure of the respective industry, it was decided that two additional factors should also shape the survey. First and foremost, given the main thrust of the study, namely to analyze strategies underlying trends of the German T and C industries, it was taken into consideration that only larger companies would more likely contemplate and tap the entire set of options open to them. This is, for instance, particularly the case vis-à-vis the propensity to venture abroad, be it either directly or in the form of international contractual agreements. Hence, contrary to the overall small and medium-sized structure of the German T and C complex, only larger firms were to be included. Secondly, in light of the fact that Germany exports roughly twice as much in textiles as in clothing and is likewise the world's largest exporter of textiles, it was hoped to be able to subject this industry to a greater degree of scrutiny.

In line with the above considerations 20 textile companies, 6 knitting companies and 17 clothing manufacturers were approached. As can be seen in the following table the response rates (25 percent for textile, about 70 percent for knitting and over 50 percent for clothing companies) were quite acceptable. Nonetheless, the lower than hoped for participation of the textile industry means that it could not be subjected to planned increased scrutiny. However, the entire spectrum of those responding across all industries does cover fairly well the production spectrum in Germany. It is hence assumed to be a relatively representative sample from which conclusions, albeit not of overly bold nature, can be drawn.

As concerns the questionnaire itself, it attempted to capture factors influencing both past reactions and policies (i.e. back to 1980) as well as those posited to be dominating in the coming years. It commenced with questions on the state of the company vis-à-vis employment, sales, investment and foreign operations in 1980 and 1990/91. It then focused on the market (quality) segments aimed at, the most important competitors, factors affecting the competitive position and the impact of prevailing trade regimes (e.g. MFA, OPT, etc.). Thereafter it centered on issues concerning the structure of production, the relative level of wages and the standard of production technology prevailing. Furthermore, specifics on

Table A1 - Overview of Firms Participating in Survey/Interviews: Data from around 1990^a

Branch/Name	Major products	Employees	Total sales ^b	Exports (%)
Textile				
1. Karl Otto Braun	Medical supplies	1300	150	50
2. Lauffenmühle	Fabrics	2300	350	45
3. NAK Stoffe	Printing, dying	810	210	40
4. Südwolle	Wool yarn	980	860	60
5. Wiebe	Fabrics	920	380	20
Knitting				
1. Falke	Socks, knitwear	1300	360	25
2. Kunert	Hosiery, socks	5970	590	25
3. Lucia	Women's knitwear	1750	360	40
4. Triumph	Women's undergarments	28000	2000	-
Clothing				
1. GFT Bäumlner	Men's fashionwear	2000	300	50
2. Willy Bogner	Women's outerwear	1580	220	15
3. Brax	Men's/Women's pants	1500	230	20
4. Escada	Women's fashionwear	6000	1400	70
5. Hucce	Women's wear	1800	600	30
6. Konen	Men's fashionwear	1000	110	30
7. Mondri	Coordinated women's wear	3000	425	65
8. Mustang	Jeans	1250	210	25
9. Steilman	Women's/Men's fashionwear	8250	1800	50
^a The figures refer primarily to consolidated sales of the respective group, excluding (wherever possible) non-textile/clothing items. Exports refer mostly to % of production exported via German operations. ^b Mill. DM.				

various cost aspects of clothing production were requested. Of key importance were the questions on strategic policies, both followed over the past decade as well as foreseen being relevant in the coming years. Then factors underlying the decision to invest or establish contacts abroad were examined. These included the driving force behind such decisions as well as the reasons determining in which country should be invested. In this connection the influence of import restraints for essential capital equipment on the selection of a given country was explored. Finally, it was attempted to isolate those policies in the home market which would have had to have been changed to induce production to remain in the home market. Out of all these questions only those were selected for evaluation in this paper, which specifically dealt with structure/characteristics/performance of companies vis-à-vis policies followed.

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