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INDUSTRIAL RESTRUCTURING POLICIES IN DEVELOPING ASIAN COUNTRIES WITH PARTICULAR ATTENTION TO THE TEXTILE AND GARMENT INDUSTRY*

Prepared by the

Regional and Country Studies Branch

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Executive summary

This document is based on the papers presented and the recommendations formulated at the regional seminar on "Industrial Policy and Structural Adjustment with particular attention to the Textile and Garment Industry Sectors", held by UNIDO and the Korea Development Institute in Seoul, Republic of Korea, on 9-15 September 1987. The papers had been prepared under the study programmes of the Regional and Country Studies Branch, UNIDO and the Korea Development Institute, respectively.

The document outlines industrial restructuring policies in Asian developing countries. While import substitution was characteristic of early industrialization, the limited size of domestic markets soon forced these countries to adopt export-led strategies. Simultaneously, however, import substitution and domestic resource utilization have continued to receive attention.

Government intervention has played an important role in industrial development of Asian developing countries. It has generally aimed at facilitating structural adaption of industry through market forces rather than at replacing these forces. Current issues requiring Government attention are the geographical balance of industrial development, employment, company efficiency and technological progress. Forward-looking strategies will have to include increased attention to international competitiveness and to giving a greater role for industry for improving domestic standards of living, especially in the countryside. The role of the Asian Development Bank in supporting industrial restructuring is briefly described.

Ab example of successful industrial development and restructuring is the Republic of Korea. Import liberalization has been one of the ways in which the Government of the country has tried to stimulate industrial restructuring. Although no specific pattern with regard to import-induced restructuring can be discerned, there is a strong indication that the liberalization programme has centricated to the shift from light to heavy industries that took place in the 1970s and early 1980s. On the whole, adjustment costs have remained low, with firms adapting their production under the pressure of gradual liberalization.

Various forms of subcontracting have been pursued in the country's industrial development. The important but sometimes sensitive relationship between large, economically powerful firms and their smaller subcontractors was regulated by the Government. Some business areas were also reserved for small and medium-sized firms. Rapid technological change in the international production system now necessitates a review of existing measures and policies. While an overall framework for small and medium-sized firm development would be retained, the main force for strengthening these is to be found in competitive efforts to improve technologies, management, marketing, and other business activities. The importance of a motivated labour force, a strong and aggressive management and technical assistance to subcontractors for the rapid growth of heavy industry is emphasized.

The central part of the document surveys several aspects of the development of the textile and garment industry in developing countries, and of Asian textile and garment industries in particular.

First, the changes in the international textile industry are described. It is shown that, while the world export shares of yarn and cloth decreased, those for garments increased. Also, an increasing share of world exports (man-made fibres excluded) is provided by developing countries. Although the role of the textile and clothing industries in the economies of industrialized countries has been considerably reduced, government restructuring programmes have succeeded in retaining their competitiveness in a number of these product groups. The industrialized countries' protectionist measures are also limiting the exports of established developing country textile producers.

Developing country textile policies are usually characterized by high tariffs on imports of intermediate and final goods (cloth, garments) and a variety of measures to stimulate exports, such as tax incentives. In the developing countries themselves markets will expand in the future. The introduction of sophisticated technologies and of design/quality improvements is becoming an essential feature of developing countries' production process. The need for better industrial services is an related issue.

During the last two decades the textile industry has developed particularly rapidly in Asian developing countries. Integrated development of textile-clothing complexes however is as yet not very common, and many Asian countries still rely heavily on imports, especially of intermediate textile goods. In textile production, especially man-made fibre production, technological developments have led to increasing capital intensity and industrial concentration. In the clothing industries, medium-scale enterprise is likely to remain common; technological advance however may lead to concentration and reduced demand for labour in that subsector as well. Meanwhile, international competition and import quotas have led to the relocation of garment factories from the more advanced Asian countries to less developed countries. Future market opportunities are likely to arise in high-quality goods and will be subject to rapid changes in style and fashion. Asian manufacturers will have to redirect their production accordingly.

To enable industry to meet new technological and marketing challenges, appropriate structural government policies will have to be formulated. Policies also need to include and support traditional industries previously only serving the domestic market to be oriented towards overseas markets. This would also require improvement of productivity and quality of output. Industrial services such as assistance to product and process development, design, quality control etc. will be of increasing importance to this end. The design and implementation of such restructuring programmes can be efficient only if all agents concerned, i.e. government, labour and business are involved. Appropriate institutional arrangements thus need to be found.

An example of successful restructuring in the textile industry is the conversion from natural to man-made fibres and blends in the Republic of Korea's industry. High productivity and a continuous concern for the application of new technologies indeed characterize the Korean industry.

The impact of new technologies on the skills and gender composition of the labour force in the textile and clothing industry is an important issue. In yarn and cloth production further technological progress will result in increases in labour productivity, affecting the demand for labour. Demand for unskilled labour will fall. The demand for highly-qualified personnel, on the other hand, will rise. In the clothing industries, the introduction of micro-electronic processes and automation of assembly operations is unlikely to be applied in the near future in developing countries. In the long run, however, automatization technology will have an impact also in these countries. The future skills requirements will be determined by the type of clothing produced. For standardized mass products unskilled labour, supervised by highly-skilled management and supervisors, will be used. For high-quality, small-lot production, however, the use of well-skilled workers will be essential.

Major structural changes have occurred in the textile and clothing industries in the USA, the EEC and Japan. The contraction of the industries in the USA has been accompanied by a number of mergers, especially in textiles. Companies have carried out far-reaching modernization and penetrated special market niches (especially in high-quality clothing). Relocation of labour intensive operations to countries in the Caribbean have been undertaken as well. While government policies in the USA have been confined tariff and non-tariff barriers, the EEC countries and Japan have pursued a mix of passive and active policies, including assistance to restructuring and relocation. The contraction of the industries has been stronger in the EEC than in the USA. In Japan, the industry's restructuring has not as yet led to any major contraction. Japan has a trade surplus in textiles, with import restrictions in textiles and clothing. Japan foresees a major role for the textile and clothing industries in its economy also in the future.

Structural changes are being pursued in Burma, India, Indonesia, Malaysia, the Philippines, Sri Lanka and Thailand through various policy measures which reflect the differences in their development. In Burma, textiles is a leading industry, but its technological standard is modest, and exports are limited. Foreign investment may be expected to be crucial for rapid modernization of the industry. In India, a major textile exporter, modern textile mills are found side-by-side with traditional small-scale producers. Product reservation schemes help to protect the handloom sector, a major employer, from competition by modern mills. The Government is actively inducing and supporting modernization of the fibre production. Strong export orientation characterizes the Indonesian as well as the Malaysian garments industry. Apart from updating technology and improving product quality, a better linking of export processing zone production to production outside the zones will need to be ensured. In the Philippines, the performance of textile mills need to be greatly enhanced in order to ensure supplies to the garment factories. The programmes of restructuring need to be conceived jointly by government policy makers and industrialists. Sri Lanka is faced with the problem of stimulating the labour-intensive, traditional industry and to increase international competitiveness through design and quality improvements, especially for the garment export industry. A better supply of domestic textiles is also

needed. Thailand's industry is more advanced, and disposes of a large domestic market but is also under pressure to adjust through modernization. In all countries, skill improvements will no doubt be a central issue for modernization in the textile and garment industries.

Restructuring of the textile and garments sector thus is carried out in all countries through modernization of plant and equipment and quality control/design and other improvements. Development of indigenous fibres is being pursued. To enable these developments labour skill improvement would need to be accelerated.

The improvement of the institutional infrastructure for the industries would need to be assured as would a strengthening of information services, in particular with regard to exports and technology developments. More systematic interaction between the government and the private sector should be of great importance. International co-operation possibilities in the restructuring would need to be explored.

Introduction

During the last few years UNIDO has carried out a research programme on industrial restructuring and structural policies. This programme aims at highlighting major trends and disseminating information on the international restructuring process.

In their early industrial development process, most developing countries in Asia have emphasized the establishment of consumer goods or "down stream" industries. Capital and intermediate goods industries played a minor role. Inter-country linkages did not develop significantly in the region. With changes in the international economic environment in recent years and the resulting international competition and structural adjustment pressures in industry, Asian policy-makers are currently confronted with the need to conceive policies and programmes to rationalize the overall industrial production structure and to upgrade and specialize production in some key subsectors. These subsectors are primarily those which experienced a high rate of expansion in the past, but which now need to be consolidated and move towards new niches. Whereas these industries differ in terms of technology, markets, etc., they have a common need for far-reaching structural adjustment. One key issue is thereby how to reconcile the national socio-economic and industrial development concerns with the international trends and adjustment pressures. Another issue is how the national experience and new programmes and policies can be synchronized among leading producer countries in the region.

One subsector of particular concern to the region's policy-makers is the textile and clothing industry. In Asian developing countries this sector generally is the single most important manufacturing industry. Research on development trends and issues in the textile and clothing industry sectors carried out by the Regional and Country Studies Branch provided an input to the deliberations at the regional Seminar on Industrial Policy and Structural Adjustment organized by the Korea Development Institute (KDI) and UNIDO, and held in Seoul, Republic of Korea, 9-15 September 1987.

Within its International Development Exchange Programme, KDI has since 1982 organized seminars or "policy forums" in which the experiences of the Republic of Korea in regard to various aspects of industrial and trade policies and planning have been presented and analyzed. The regional Seminar on Industrial Policy and Structural Adjustment was held in this context.

The immediate objective of the Seminar was to enable national policy-makers in Asia and the Pacific region (i) to share recent experience pertaining to industrial restructuring policies at the country level, with particular attention to the textile and clothing industry; (ii) to review options for future policies; and (iii) to assess prospects for regional co-operation.

The Seminar was organized by Dr. Whang In-Joung, Vice President for International Co-operation of the Korea Development Institute, and his staff. The programme included a field trip to selected industries and institutions central and eastern parts of the Republic of Korea.

This report contains the main presentations made at the Seminar relating to industrial restructuring policies in Asian developing countries with particular attention given to the experience of the Republic of Korea. Focus is given to the Seminar presentations and deliberations concerning restructuring policies in the textile and garments sector. In the last chapter a summary of conclusions and recommendations of the Seminar is given.

CHAPTER I

(a) Industrial restructuring policies in Asian developing countries: An overview[1/]

1. INTRODUCTION

Economic growth in developing Asia has on the whole been satisfactory during the 1980s and compares favourably with that recorded for other developing regions. However, some of the region's countries have shown significant slackening after an exceptionally fast growth in the 1970s. Indeed, the various subregions showed a somewhat different picture. The four major developing economies of South Asia - Bangladesh, India, Pakistan and Sri Lanka - all had GDP growth rates above the average of the developing countries as a whole for the period 1980-85 (Table 1.1). In all four economies foreign trade plays an important role, although India's economic structure is more domestic-demand-oriented and diversified than is the case in the other countries. The sharp decline in prices of some of the subregion's major export items, such as jute, jute goods and tea, has had negative growth effects, in particular for Bangladesh and Sri Lanka. On the other hand, in the case of all four countries, considerable increases in earnings from non-traditional manufactured exports were recorded.

Real economic growth recorded by China during the two final years of its sixth Five-Year Plan (1981-85) was among the highest observed in the world: between 12.5 and 14 per cent.[2/]

The economies in the East and Southeast Asia subregion are the most trade-oriented ones, and accordingly show the greatest susceptibility to international changes. While for some countries (including the oil-exporting ones) in the subregion 1986 represented a continuation of their low or even negative rates of growth in 1985, other economies were able to increase their growth rates in 1986 after having recorded relatively low rates the previous

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1/ Based on a paper prepared by the Regional and Country Studies Branch, UNIDO, for the regional seminar at Seoul and on the discussions at the Seminar.

2/ However, the rapid double-digit growth during China's Sixth Five-Year Plan period also caused imbalances in the economy. Rising incomes and the sharp expansion of credit and consumption funds led to a widespread excess demand situation. A rapid increase in investment demand created an unsustainable pressure on imports, which caused a substantial drop in foreign exchange reserves. A marked acceleration of inflation was recorded, though it did not exceed manageable limits.

In order to avoid excessive pressures on resources, the Government adopted a series of policy measures which moderated the growth of the economy and attempted to ease infrastructural constraints, especially in energy and transport. By 1986, controls were progressively relaxed and incentives restored to enable a more balanced growth.

Table 1.1. Real growth rates of GDP and MVA, 1970-1985
(average annual growth rates in constant 1980 prices)

	GDP		MVA	
	1970-80	1980-85	1970-80	1980-85
Bangladesh	3.9	3.6	2.5	2.0
Burma	4.4	5.5	3.6	6.0
China	5.8	9.8	9.5[a]	12.4
Hong Kong	9.4	5.9	6.9	n.a.
India	3.2	5.2	4.1	5.6
Indonesia	8.0	3.5	14.6	6.4
Korea Rep. of	8.2	7.9	15.9	9.0
Malaysia	9.5	5.5	12.6	6.1
Pakistan	5.4	6.0	5.6	10.1
Philippines	6.2	-0.5	6.5	-1.2
Singapore	9.1	6.5	10.9	2.1
Sri Lanka	4.3	5.1	4.5	5.5
Thailand	6.9	5.1	10.0	5.3
All developing economies (all regions)[b]	5.5	2.8	6.6	2.8

Sources: UNIDO Data Base; World Bank, World Development Report 1987.

[a] World Bank estimate for 1965-80.

[b] Excluding China.

year. For instance, the Republic of Korea achieved a double-digit growth rate in 1986 after a subdued performance in 1985. For most of the economies of the region, 1985 and 1986 brought a difficult transition from the buoyant conditions of 1984, when both primary commodity and manufactures exports expanded favourably as a result of the recovery in industrialized countries. The appreciation of the yen from 1986 onwards constituted yet another most powerful stimulus for exports, especially of manufactures, from East and Southeast Asian developing economies. It was particularly economies such as Hong Kong, the Republic of Korea, Singapore and Taiwan Province, but also Thailand and the Philippines which gained most significantly.

On the whole, developing Asia has experienced reduced economic growth during the 1980s compared with the previous decade. The region has nonetheless, through timely structural adjustment and flexibility, performed better than other regions. So far industry in developing Asia has, indeed, been quite successful in adjusting to external pressures. Increasing uncertainties in the international systems of trade, finance, technology, etc., show however that the region's developing countries face growing challenges. Their continuing adjustment process will entail demands for entrepreneurial skills and effective national policy-making.

The intention of this overview is to seek to identify particular features of the on-going structural adjustment process, to see what aspects will require particular attention by the policy-makers in the respective countries and what policies are be likely to be subject to particular attention and application in the future. To this end we need to first briefly review the past industrial strategies and policies pursued by the countries in the region.

2. INDUSTRIAL DEVELOPMENT STRATEGIES IN DEVELOPING ASIA

One common typology of the pattern of industrial policies is to differentiate between import-substitution versus export-led growth strategies. Since, however, import-substitution and export promotion - or inward versus outward orientation - cannot be viewed as mutually exclusive strategies, one needs to differentiate according to the relative contributions of import-substitution and increased exports to overall industrial growth.

The most distinctive policy feature of the developing market-economies in east and southeast Asia has been the deliberate adoption of outward-looking industrial development. All countries began industrialization through import-substitution, in all cases (except Hong Kong) under cover of tariff protection. However, excessive reliance on import substitution gradually showed disadvantages. The limited size of the domestic markets, especially in small and relatively poor countries, soon limited the import-substitution possibilities and the protection of import-competing industries resulted in declining allocative efficiency. Indeed, in that policy framework, entrepreneurs tend to follow the easier way of lobbying for more protection than to take measures to improve the efficiency of their firms.

Export-led strategies on the other hand encouraged the development of industries which could utilize special comparative advantages to produce efficiently. Competition with other producers on both international and domestic markets constituted strong incentives to acquire and develop efficient product and process technologies. Uncertainties and drastic changes on the international market, on the other hand, also entailed risks to outward-oriented industrial growth. This was demonstrated during the recent worldwide recession when southeast and east Asian countries' exports were hit with resulting overall economic decline. The tendencies towards more protectionist policies of the industrialized countries constitute another threat to the outward-oriented industrial sectors in the Asian countries.

The countries in the developing Asia region currently pursue a strategy mix with policies promoting simultaneously import-substitution, export growth, and domestic resource utilization. The outward linkage is in any case seen as indispensible: Industrial growth requires both exports of manufactured products and the acquisition and efficient utilization of foreign capital, know-how and technology.

Usually governments play an active role in inducing a rapid pace of industrialization and a desired pattern of this process. In most countries in south, southeast and east Asia which have mixed economies, governments are, indeed, pursuing some degree of central development planning and influence the direction of investment flows in the private sector. The public sector continues to play an important role in the otherwise privately dominated industry sectors.

The main lessons to be drawn from the east and southeast Asian experience relate not to the degree, but to the kind of government intervention in the economy. Much of the success of the east Asian countries has been due to effective macroeconomic policies and other measures, both in terms of prudent fiscal and monetary policies and in the provision of education and other public goods. Industrial policy has relied less on governments' "picking the winners" than in phasing out losers and letting potential winners use financing and other facilities for investments and expansion. Labour and capital are supported to move from declining to growth industries.

Government intervention in the east and southeast Asian economies has generally been designed to promote adjustment through market forces. Policies followed the precept that it is primarily through the incentive role of prices for goods, capital and labour, that adjustment and thus industrial development should be promoted. Or, as was observed: 'Getting relative prices right is not the end of development. But getting prices wrong frequently is'.[1/]

The Indian Government is currently using promotional and supportive policies which are formulated in co-operation with the industry sector itself. Thus the rationalization of industrial subsectors is carried out in consultation with the industry organizations concerned. Such interaction between government and industry is seen as essential for the proper design and implementation of adjustment programmes.

The particular role of government planning is currently (again) is under debate. National industrial development plans and programmes are generally seen as essential instruments to supplement market signals in fostering and directing growth and to promote a perception of the on-going development process and its driving forces. It is on this basis that overall objectives and a framework for policies, and private sector decisions can be established. Successful national planning in this sense means greater transparency of policies and measures being applied and a continuing re-evaluation of programmes in the light of national and international developments. The most remarkable feature in developing Asia in this context has perhaps been the implicit government direction of industry through measures such as channelling financing flows and technical innovation. This has been largely achieved through broad contacts and dialogues with the industry itself.

The enormous complexity of modern industrial technology and high cost of R&D investment have caused new technical knowledge for industry to be largely subject to public or private property rights. For developing countries in Asia the acquisition of new technology from abroad, whether through licensing or direct foreign investment, constitutes an increasing foreign exchange cost. Technical cooperation among developing countries has been suggested as one way of reducing this cost. The dominance of advanced industrial countries is likely to prevail, but progress of industrialising countries, especially in east Asia, will bring about increasing technological capability, including of relevant highly skilled human resources.

1/ "Industrial Policy in East Asia 1950-1985", UNIDO/IS.636, 29 May 1986.

3. INDUSTRIAL RESTRUCTURING POLICY ISSUES

Parallel to the application of general policies and measures in support of industrial development, the developing countries had to design special policies in order to encounter a number of constraints and disequilibria which emerged in the course of development. These constraints and the various approaches to overcome them are briefly outlined below.

(i) Geographical dispersal of industry

It is well known that industrial development in the various countries in developing Asia has in the past been characterized by a pattern of high regional concentration, in most cases, in particular in and around the capital city. Small and medium scale industries, especially the more modern type, have often followed the locational patterns of larger industries in and around major urban areas. Good infrastructure, the proximity of other industries (which may serve as suppliers, buyers or sources of information), qualified labour and a large, concentrated consumer market attract firms. Such services as are available to industries will generally be located in the larger population centres, and the same applies to government institutions. Policies have in most cases strengthened the tendency for economic activities outside the primary sector to concentrate in urban agglomerations. The process of cumulative development in and around urban centres has its costs: congestion and pollution, growing spatial disparities in income levels and mass migration from the countryside to the urban centres.

During the 1970s the need for a balanced spatial dispersal of industry was increasingly recognized in the developing countries in Asia, not only to improve the quality of the urban environment but also to spread industrialization over a wider base, taking advantage of the resource endowment in the country. The challenge to policymakers has been to redirect industrial expansion without reducing overall growth. Spatial dispersal was sought not so much through restrictions on the expansion of industrial activity in the metropolitan areas as through providing improved conditions of industrial development in the non-metropolitan areas.

Several countries have developed selected "growth centres" in rural areas - providing a complete range of infrastructure and support services. The necessity to provide a "critical mass" of services in such centres has been recognized and the temptation to develop, or halfway develop, a large number of centres has been avoided. India initiated such a programme in the late 1970s. "Nucleus plants" were established to stimulate ancillary industries in districts identified as industrially backward. The nucleus plants are designed to assemble the products of feeder units within their orbits, to produce inputs needed by the smaller units, and to make adequate marketing arrangements for them. Their twin objectives are to disperse investment and employment and to provide up-graded technologies to the smaller units.

A number of countries, e.g. Pakistan, Thailand and Malaysia provide special incentives for establishing industries in less developed areas. The incentive package may include exemption from custom duties on machinery imported for installation in less developed areas and tax exemptions and credits on investment in such areas.

To redress the spatial development balance, governments have formulated and implemented various policies especially directed towards small-scale industry. SSIs would also be best suited to acquaint rural populations with industrial activities (laying the cultural basis for further industrialization) and to use scattered agricultural resources. Where a sufficiently developed and diversified industrial core is supplemented by essential private and Government services, the "service centres" thus created can play a major role in the development of rural areas. Although much can be done to support local initiatives to establish small industrial enterprises in such service-centres, SSI development will normally tend to follow and reinforce development initiatives in other sectors of the local economy rather than initiate or precipitate such developments. Examples of SSI development schemes in rural areas are China's rural and township industries integrated in the agricultural collectives, India's policies to promote village and small industries and the Indonesian "clustering" system of SSIs in rural areas.

Experience has shown that policies to disperse industrial growth can only be successful if they are implemented as an integrated package (improving rural infrastructure and education, vocational training, extension services, capital investment subsidies). Re-locating existing industries from urban to rural areas has generally proved to be costly and difficult; regional policy measures should therefore primarily focus on incentives for new enterprises (which do not depend on actual location in urban environments for inputs, labour and sales) and - primarily - on activiting and strengthening the existing rural entrepreneurial potential.

(ii) Operational efficiency of enterprises

Increasing international competition forces enterprises to continuously improve their cost efficiency. One issue for government policies is therefore inducing enterprises to adjust and modernize. Another major concern of governments in the region has been to raise the operational efficiency of public enterprises. The initiatives taken in this regard include granting greater autonomy and decision-making authority to these enterprises by relaxing controls exercised over them by government ministries, making enterprises increasingly responsible for their own profits and losses, giving managers greater discretionary powers in such matters as recruitment and dismissal, and providing material incentives in the form of bonuses to increase productivity. Thus far, the results of these measures have been mixed, and judging from the continuing concerns expressed by many Governments, the problem of establishing an appropriate system of management and control of public enterprises has not been adequately resolved.

Price distortions represent another problem which governments find difficult to solve. Many public enterprises operate in imperfect and monopolistic markets, and the prices of their goods and services therefore often are determined by central authorities. To hold inflation in check prices often tend to be fixed for long periods, without due linkage to changes in costs and international prices, such as imported inputs. The lack of adequate pricing can result in severe financial strains on public enterprises and dampen the motivation to increase production. Administered prices obviously make profit a misleading guide in judging efficiency. Moreover, artificially low prices for products and services encourage their uneconomic use, and it amounts to subsidizing the group of users of these products and services, i.e. mainly the urban popoulation, to the disadvantage of other groups.

Against this background several countries in developing Asia initiated measures aimed at overcoming price distortions. Privatization measures were conceived in various forms, covering both the introduction of competitive forces and measures for forcing public enterprises to adjust prices and to take required managerial decisions as well as - in some cases - the transfer of ownership and control of enterprises from the public to the private sector. Moreover, a number of other government-private collaborative arrangements were pursued, such as the establishment of joint ventures, leasing and management contracts. The fact, however, that public enterprises have often been established in activities where the private sector is reluctant to enter, limits the extent to which privatization could be pursued. In addition, the private sector may not be able to raise the financial resources for investing in public enterprises or provide the technical competence in the case of sophisticated plants.

In China structural reforms towards the transformation of the enterprise system were also initiated. These policy measures aimed at correcting the mismatching of production and consumer demand and to induce State-owned enterprises to combat their declining profitability. The measures included wider application of a factory director responsibility system and the transformation of State-owned enterprises into State-owned collectively-run enterprises, leased or contracted to individuals.

(iii) Unemployment

The unemployment problem in most Asian developing countries is significant and of growing concern. The Philippines, for instance, would need a 24.5 per cent annual growth of manufacturing, and India a 22.1 per cent growth, just to absorb future increases in the labour force resulting from population growth, apart from the absorption of currently unemployed or underemployed persons. New industrial establishments alone would therefore not suffice to solve the problem, a problem which is aggravated by the prevalence of two potentially conflicting objectives - employment generation and technological innovation. There is a need for a two-pronged approach: Increasing the direct and the indirect employment prospects of industry. The service content in manufacturing and industry services would be important target areas for development in this context since it would meet both objectives and dimensions. It would absorb labour outside and inside industry paper and would support industrial development through specialized services.

In order to enhance the direct employment potential of the industrial sector, some Asian countries direct their policies at industrial sectors providing the largest degree of flexibility in labour/capital trade-offs. Efforts have been made to examine the specific industrial operations and study the possibilities of replacing capital by labour, ensuring however that the substitution does not affect productivity beyond a reasonable limit of tolerance and does not create a permanent resistance to technical change.

More systematic assessments of technology choices are also carried out to ensure optimal utilization of opportunities for absorption of labour. Obviously, in the policy-makers' analysis, employment imperatives should not preclude analysis of other factors, such as effects of new technologies on productivity, quality of products and the state of modernization.

(iv) Technological capabilities, skills development and technology flows

The combined, overall objective of the various policies being pursued can be described as raising manufacturing "capabilities". "Capabilities" entail not only the acquisition of hardware - machinery and equipment - but also the actual operating and further development of a production system. It includes technology and skills, infrastructure, the capability to conceive and implement industrial projects, stability in energy supplies, etc. To improve these national capabilities, countries have to take measures across a wide front.

Many countries in south, southeast and east Asia had a headstart in building indigenous industrial development capabilities, as the industrialization effort of these countries had been preceded and accompanied by significant human resource development and rapid development of physical and institutional infrastructure. These countries were then in good position to seize and utilize the opportunities which emerged in the national and - above all - international markets. The required acquisition of industrial technology has in most of the developing Asian countries been related to foreign investment; only in a few cases has technology been bought outright and in fewer still has it been the result of indigenous innovation. In Asian developing countries there is a growing awareness, however, of the urgent need to develop national capabilities for choosing and acquiring the technologies most appropriate to their needs and on the best available terms and, above all, to build up indigenous research and development activities for generation of own technologies.

Measures aimed at encouraging domestic technological innovation have therefore been moved into focus in recent years in most countries. Two specific examples can be used to illustrate the array of measures being used. In the Republic of Korea, the Government had pursued innovation support as integral part of overall economic development policies since the 1960's. Technological innovation has been a major element of development planning with the Ministry of Science and Technology (MOST) as the central government body responsible for science and technology development, a Special Research and Development Projects Scheme (created in 1980) providing financial support to enterprises and the Korea Technology Development Corporation (KTDC), established in 1981 with capital from both the Government and the private sector, providing funds for a variety of technology development activities such as R and D, commercialization of R and D results, and prototype building.

Singapore's process of technological innovation has been promoted through a network of incentive mechanisms and financial support schemes. Tax incentives - such as double deduction of R and D expenditure, accelerated depreciation over three years for all plant and equipment for R and D and investment allowance of up to 50 per cent of the capital investment in R and D excluding building costs - and financial for private firms investment in technological innovation belong to these support schemes. Other financial assistance schemes cover the direct development costs of projects which belong to "desired" or "priority" industries for Singapore, i.e. mainly skill-oriented and capital-intensive industries.

4. EMERGING STRATEGY ISSUES FOR FUTURE INDUSTRIAL RESTRUCTURING POLICY-MAKING

Current and anticipated changes in the international economy and of internal constraints will make effective adjustments of prevailing structures in Asia necessary; forward-looking strategies and policies must therefore be formulated. A dual goal is to be attained: (1) directing industrialization towards improving the living standards of the masses and (2) achieving greater international competitiveness for locally manufactured products.

(i) Broadening industrial growth

In the future, more attention is expected to be given to raising the productivity and consumption standards of the vast majorities of the population and thus to break past pattern of industrial development with manufacturing concentrated in metropolitan areas with few linkages to other economic sectors, particularly agriculture, or to the downstream manufacturing and processing activities. Evolving strategies now seek to enhance the role of industry in transmitting inputs for modernization throughout developing societies, and to derive greater support for industrial expansion from increased domestic demand for manufactured goods.

To a large degree, the product mix of industrial production has been determined by the demand pattern of urban elites, for either direct consumption or for foreign exchange. Policies now pursued by many of the developing Asian countries attempt not only to accelerate overall demand for manufactured commodities but to shift the demand pattern. Thus the pace of industrialization will to a certain extent be linked with successful implementation of rural development policies: education, health, infrastructure; and will in turn contribute to these policies by providing employment and basic goods. Growth in benefits, as distinguished from growth of output, requires shifts in product mixes and methods of production - particularly in the latter towards labour-intensive manufacturing.

(ii) International competitiveness of industry

In further developing and expanding these strategic goals, increased attention is directed to integrating industrial development with national capacities and capabilities. Such integration is a prerequisite for both strengthening the penetration of the domestic market and building up capabilities for meeting the demands of international markets giving particular attention to ways of innovation and improvements in productivity and product quality.

Being quite aware of the dramatic challenges of recent and coming years, industry in Asia's developing countries is relatively well prepared to remain competitive. The region's industrialists, competing with foreign manufacturing systems with well developed inter-production linkages, may, however, have to more carefully assess their actual possibilities. This would in most cases entail not a broad across-the-board production strategy but a strategy of product 'niches'. In these efforts, close co-operation is needed between private industry and the government policy-makers in observing global trends and development patterns in various industry sub-sectors. The government could pave the way and provide support in various ways to the

industry which is meeting the challenges of the changing international competitive environment. An important benefit may be derived if the Asian developing countries could co-operate among themselves in such endeavours, sharing observations of trends and developing possible complementarities of production strategies.

It is important for the successful realization of such schemes that the transparency of such assessments and resulting support measures be ensured. For the industrialists it would, furthermore, not only be a question of selecting product groups of specific 'niches' holding particularly promise, but also of observing cost changes, effects of technological changes, possibilities for increased flexibility in production, prospects for higher service content, and the forces which may negatively effect certain products groups.

5. CONCLUSIONS

Three observations may be put forward as an attempt to draw some overall conclusions:

Firstly, much of the industry in developing Asia has given evidence of significant adjustability at the company level. This has largely been possible due to a government policy framework which was effective enough to translate structural adjustment pressures into inducement and support for upgrading and modernization of production.

Secondly, the skill endowment in the Asian countries is remarkably high and there is a very strong ability to absorb and utilize technological changes and advances.

Thirdly, there has been a significant awareness from the government side of the need to play an active role in providing a supportive environment for the ever-changing and flexible industrial development jointly with the other actors of development.

For the countries in the region with a strong raw material base, future prospects may be found in an effective build-up and utilization of a combination of increased domestic demand and exports. It has indeed proven to be of great importance that the export industries be firmly integrated in the domestic economic structure. The economic links between the export industries and other branches of the national economy, particularly between processing industries and domestic sources of raw materials and other supplies, need to be strong. A further essential linkage is the one between large- and small-industries. The establishment of industrial estates for ancillary production and sub-contracting would be one measure to enhance such a linkage.

The remarkable growth of the east and southeast Asian countries' economies was achieved while pursuing export-led industrialization strategies based on their comparative advantages of low labour costs, rapid absorption of know-how capabilities and technology from abroad. However, despite continuous labour productivity gains in many industries, increases in labour costs have gradually reduced their advantageous competitive edge. Increasing attention is therefore being given to technological innovation and to improving quality standards in production to partly offset the decline in world development for

standardized goods. Research and development is thus seen as an effective means of increasing competitive positions in the world market.

At the same time, attention is being directed at the relatively limited role which the industrial sector of these export-led economies has been playing in satisfying domestic intermediate demand. Input requirements for technology, basic capital goods and intermediate inputs have been largely met by imports. This demand structure was advantageous in a booming world economy when the possibilities for expanding industrial exports were large. In the present situation of an increasingly difficult world market it has become important for these countries to increase their ability to satisfy their own demand for research intensive goods, by up-grading and restructuring their science and technology capabilities.

This would, inter alia, entail the effective integration of newer technologies in production, through adoption and diffusion of microelectronics-based technology and development of international sub-contracting activities in the electronics software field, etc. It would also mean a more systematic sourcing of essential intermediate inputs for industry from the internal economy.

Finally, a strong plea would be made for a more effective surveillance by Asian countries of global trends and their driving forces which may - positively or negatively - affect current industrial production structures. An industrial subsector analysis on a regular basis could even be institutionalized as a joint scheme among Asian developing countries.

(b) Development strategy for industrial restructuring - role of the Asian Development Bank - (summary)[1]

The Asian Development Bank (ADB) assists industrial development in member countries in various ways. Apart from traditional banking operations, the bank has taken an active role in structural adjustment. The paper concentrates on three areas of structural adjustment: Promotion of the private sector, financial development and technological development.

Assistance to the private sector is provided through the intermediary of existing institutions in member countries. This saves costs; also, the intermediaries' close knowledge of local conditions and potential is essential. Since inception, the ADB has approved nearly 90 credit lines totalling US $2 billion to 31 financial intermediaries in 20 developing member countries. These credit lines have financed more than 12,000 SMI projects; the single largest industry involved is textiles, with 20 per cent of the total amount. Technology upgrading is the objective of most projects.

The bank's involvement in private sector development has been intensified in recent years. Assistance has been provided for privatization-related studies in a number of member countries. In 1983, ADB started making equity investments in private enterprises and financial institutions for private enterprises; since 1985 loans are made available without Government guarantees. Under the equity investment scheme, ADB has so far approved 18 projects totalling US $14.4 million. These include special SMI projects in which ADB and a domestic financial intermediary are joint shareholders. ADB is always a minority shareholder. Under the loan programme, a total of US $27.5 million has been approved without Government guarantees.

Financial development has taken the form of supplying credit to and strengthening existing development finance institutions and helping to establish new ones. These institutions can be commercial banks, venture capital companies, credit guarantee funds, etc. Member states can also apply for advice on policies and regulations for such institutions. Finally, the bank has initiated studies on developments in financing to help prepare the way for further projects and measures.

For developing country Governments and private firms, the high cost and high risk of R and D is a major obstacle to technological progress. In the Republic of Korea, where major R and D and technology application programmes are being implemented, ADB has provided support to Government efforts in the field. This has taken the form of providing equity investment in the share capital of specialized instituions financing technological progress in SMI. In addition, ADB could also provide loans to these institutions, equity for investment in technology-intensive SMIs and assistance to technology policy and strategy formulation, review, reform or implementation; the latter type of assistance could benefit from co-operation with multilateral organizations such as UNIDO.

1/ Based on a paper presented by ADB for the seminar at Seoul.

CHAPTER II

(a) Industrial restructuring and trade policy in the Republic of Korea[1/]

INTRODUCTION

This paper examines the policy of import liberalization introduced in the late 1970s by the Government of the Republic of Korea (ROK) as well as its background. Section 1 reviews the background of Republic of Korea's import liberalization measures and their overall impact on the economy. Section 2 examines the structure of Republic of Korea's import policy as well as the details of the import liberalization programme. Section 3 examines patterns of changes in the industrial structure since the early 1970s and attempts to determine the impact of import liberalization on Republic of Korea's industries. Section 4 recapitulates the main developments and presents some suggestions for further action.

1. BACKGROUND TO RECENT IMPORT LIBERALIZATION

The Government of the Republic of Korea declared import liberalization to be official policy in 1967, but a serious attempt to implement it was not taken utntil 10 years later. At that time, the country had successfully ridden out the difficulties caused by the first oil shock and the subsequent world recession.[2/] The economy was booming, with strong export performance in the light manufacturing industries, a high level of investment in heavy industry, and successful penetration of the Middle East construction market. As a result, the current account balance was improving rapidly. However, the government was worried that domestic demand pressure was building up. Seeing import liberalization as one way to relieve this pressure, the government liberalized imports of a large number of commodities in several successive phases between 1978 and 1979.[3/]

In 1979, a dramatic downturn of the economy forced the government to discontinue import liberalization. The severity of the recession which the economy experienced in the subsequent two years was largely the result of three factors: The second oil shock, the socio-political instability associated with the assassination of President Park Chung Hee and the establishment of a new government, and the unprecedented summer crop failure of 1980. A longer term structural problem, however, became apparent as well in the problems of decling export performance (see Table 2 1) and decreasing capacity utilization in many manufacturing industries. Those trends began in

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1/ Based on a paper presented by Dr. Young Soogil, Senior Fellow, Korea Development Institute, at the seminar at Seoul.

2/ See Kim (1984) for a discussion of general economic conditions in Republic of Korea during the seventies and early eighties.

3/ See the next section for more details.

late 1978 and aggravated the effects of the triple shocks. These factors combined produced negative growth of the economy in 1980. The downturn has been attributed largely to the government policy that preceded it: The promotion of heavy industries.[1/]

Table 2.1 Republic of Korea's share in total manufactures exports of the developing countries, 1963-84, selected years
(Per cent)

Year	1963	1973	1977	1978	1979	1980	1981	1982	1983	1984
Per cent	1.1	11.9	16.9	17.3	15.8	15.3	17.0	19.0	19.4	19.5

Source: Economic Planning Board, Major Economic Indicators, various issues. GATT, International Trade, various issues. OECD, Foreign Trade by Commodities, various issues.

The dominant concern of the government authorities responsible for economic policies in the 1960s had been promotion of exports. In the 1970s, and especially since 1973, however, they became preoccupied with the promotion of "non-traditional" industries, broadly defined as heavy industries. Exports were still considered to be important, but their promotion was seen as secondary to, and in fact contingent upon, the promotion of heavy industries. This change in policy priorities was accompanied by a vigorous campaign to promote investment in all the non-traditional industries, ranging from chemicals, non-ferrous metals and steel to machinery, electronics, automobiles and shipbuilding. Various Government incentives in the form of special tax treatment, preferential credit allocation, and provision of industrial infrastructure were introduced to promote investment in these industries. These industries were also protected from foreign competition by high import barriers.

The policy was fully implemented but its effect seemed very different from that intended. By the late 1970s, the heavy and chemical industries were suffering from serious excess capacity and a worsening financial structure, and were increasingly dependent on government assistance and the rescheduling of bank loans. The promotion of heavy industries also led to upward pressure on wages that in turn caused losses of international competitiveness for light manufactures. This can be seen in Table 2, which shows a decline of 26 per cent in the unit labour-cost adjusted real exchange rate vis-á-vis the United States between 1975 and 1979.

In an environment of political and economic crisis, the new government initiated a series of economic reforms whose main objective was industrial adjustment. As a short-term measure and in immediate response to what

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1/ As yet there has been no rigorous analysis of the heavy industrialization policy of the 1970s. Young, et al. (1982) provides a critical perspective. Kim (1984) provides a useful historical perspective.

Table 2.2. Macroeconomic indicators of the Korean Economy: 1975-85, selected years

	GNP growth[a] (%)	Unemployment (%)	Manufacturing wage increase (%)	Nominal exchange rate index (W/$)	Real exchange rate index[b]	Imports/GDP (%)	Trade deficit (% of GNP)	Trade deficit ($ billion)
1975	6.9	4.1	27.0	79.7	115.9	36	8.0	1.7
1979	6.5	3.8	28.6	79.7	85.6	35	7.1	4.4
1980	-6.6	5.2	22.7	100.0	100.0	41	7.3	4.4
1981	6.6	4.5	20.1	112.1	116.8	42	5.5	3.6
1982	5.4	4.4	14.7	120.4	112.3	38	3.7	2.6
1983	11.9	4.1	12.2	127.7	121.4	38	2.3	2.6
1984	8.5	3.8	8.1	132.7	138.3	38	1.3	1.0
1985	5.1	4.0	9.5	143.2	146.4	36	0.0[c]	0.0

Source: Economic Planning Board, Major Statistics of Foreign Economy, 1986; KDI Data Base.

Notes: [a] The calculation of GNP for years beginning with 1980 has been based on the new system of national accounts.

[b] The deflator used is the ratio of the Republic of Korea's manufacturing unit labour cost over that in the United States.

[c] Preliminary estimate.

appeared to be very urgent industrial problems, the government sought to reduce excess capacity in key heavy industries sectors such as copper refineries, power generators and other heavy electrical machinery, automobiles, diesel engines and electronic switchboards, by forcing a realignment of investment among firms and the liquidation of some plants.

As a long-term measure, the government reformed the industrial incentives system. Industry-specific incentives were largely eliminated, although the general incentives for small firms and the regulation of large firms were strengthened. In addition, efforts were made to privatize and deregulate commercial banking. All these measures, which constituted a "new" industrial policy, where thought to strengthen the market mechanism and discourage the misallocation of resources. At the same time, a multi-year programme of import liberalization - a resumption of the earlier effort - was initiated.[1/] It has proved particularly controversial, as shown below.

Another important policy development was the successful attempt to adjust and stabilize the real exchange rate. The Korean won, which had been pegged to the dollar at an unchanged level since 1974 despite massive increases in domestic wages and prices, was devalued by 20 per cent in January 1980 and subsequently came under a managed float. A campaign to stabilize wages and prices through income policy and fiscal and monetary restraint has also been implemented effectively. Table 2 shows that, as a result, the real exchange rate has been maintained at a competitive level.

Given the generally held view that the heavy industries have been overly subsidized and protected, the heated national debate provoked by the import liberalization proposal was unexpected.[2/] The debate, eventually centering on the key issue of the appropriate speed and manner of the liberalization, revolved around three major concerns that an optimal import liberalization programme should address. The first was the potentially heavy costs of adjustment that would have to be borne by firms and workers. According to this argument, any significant import liberalization programme at this stage of industrial development would result in a flood of more competitive foreign goods, would bankrupt domestic firms in the affected industries and would create serious structural unemployment.

The second concern was the need to promote industrial sophistication. Opponents of import liberalization argued that free trade would retard technological development - and hence industrial sophistication in general - and the growth of infant industries.

The third concern was the balance-of-payments impact of import liberalization. One argument was that imports would surge with the dislocation of many import-competing industries, but that exports would not increase. One reason advanced for increased imports without accompanying export growth was that the upper-income class had an "irrational" preference for import advanced-country goods. The disparity would cause serious current account difficulties. This argument had special appeal to the public, given the growing alarm about Republic of Korea's large international debt.

[1/] The proposal may be found in Young, et al. (1982).

[2/] The debate is summarized in Young (1984 (a) and (b)).

Proponents of import liberalization shared these concerns but argued that a pre-announced, medium-term across-the-board programme of import liberalization, with allowance for a limited number of exceptions and a substantial level of residual transparent protection, could be implemented without undue shock to industry. Such a programme would not necessarily lead to a surge in imports, and firms would have sufficient time to prepare for adjustment. Furthermore, anticipation of the exposure to international competition would force firms to reduce inefficiency and become more innovative. As a result, their international competitiveness would be strengthened and technological development accelerated.

Proponents also argued that while the Republic of Korea had over-invested in heavy industries and needed to carry out industrial adjustment, it was nonetheless also rapidly gaining international competitiveness in this sector. Accordingly, although a reallocation of resources was not only inevitable but was also a major aim of import liberalization, the adjustment would be largely of an intra-industrial variety rather than of an inter-industrial one. Such adjustment would not have to be very painful and, in fact, with the help of efforts by firms to become more competitive and to upgrade their technologies, the costs of adjustment could be largely eliminated.

A further argument of the supporters of liberalization was that, except perhaps in the very short term, the current account balance was a macroeconomic problem that could be handled with an appropriate real exchange rate policy which maintained the international competitiveness of Korean goods in general. Overall, depending on how it was managed, import liberalization would be only moderately painful at worst and could induce necessary industrial adjustment at the same time. Stabilization of the real exchange rate at an internationally competitive level became a paramount concern of the Government in the eighties. To achieve this, the nominal exchange rate was adjusted rather flexibly, while wages and prices were stabilized through various austerity measures.

While the adjustment of industries and firms to import liberalization is discussed further in subsequent sections, it should be pointed out here that the Republic of Korea's recent balance-of-payments record supports the proponents' view of import liberalization. As shown in Table 2.2, the trade account as well as the current account were improving steadily even before the recent yen-dollar realignment and the decline in oil prices and international interests rates.

The success of these measures demonstrates that Republic of Korea's exchange rate and domestic macroeconomic policies have been favourable to import-competing and exporting firms in general and have thereby minimized the problems of adjustment. In this regard, the Republic of Korea's import liberalization programme has been well-supported by macroeconomic policies.

2. POLICY APPROACH TO IMPORTS

The Republic of Korea's import regime has a dual structure in the sense that it accords a relatively free import regime to exporters while being generally restrictive where imports for domestic use are concerned. Exporters operate under a tariff drawback system: Upon completion of exports, they are

refunded any tariffs they have paid on imports. In addition, quantitative restrictions apply much less stringently to materials brought in for processing for exports.

Table 2.3 shows that imports for domestic use accounted for nearly 60 per cent of the Republic of Korea's current total imports in 1985. Largely a reflection of the Republic of Korea's poor natural resources endowment, raw materials accounted for just over 56 per cent of them, and consumer goods for around 9 per cent, with those other than cereals accounting for less than 5 per cent. These figures suggest that the import restrictions were the most severe for consumer goods.

Table 2.3. Imports by use: 1981 and 1985
(billion dollars, %)

	1981		1985	
	Value	Shares	Value	Shares
Total	26.1	100.0	31.1	100.0
Raw materials	16.3	62.2	17.4	56.2
(Crude oil)	(6.5)	(24.4)	(5.6)	(18.0)
Capital goods	6.2	23.6	11.0	35.5
(Ships for export)	(0.9)	(3.4)	(3.1)	(10.1)
(Others)	(5.3)	(24.2)	(7.9)	(25.3)
Consumer goods	(3.7	14.2	2.6	8.5
(Grains)	(2.0)	(7.5)	(1.2)	(3.8)
Imports for export use	6.2	23.9	13.2	42.5
Imports for domestic use	19.9	76.1	17.9	57.5

Source: Ministry of Trade and Industry.

To discuss protection in the Republic of Korea, it is useful to classify it into two types: "structural" protection and "contingency" protection. There are two ways in which structural protection is provided: Through legislated tariff rates and through import licensing. The basic structure of legislated tariffs is determined by the "general" tariff rates that apply to imports from all sources. Wherever relevant, the general tariff rates are superseded by 'concession' rates fixed at GATT negotiations. Currently, the GATT concessions cover only a small proportion of traded commodities and, more often than not, the general tariffs are below the concession rates. There are two complementary systems of import licensing: One is general, and the other is dis riminatory. The general import liciensing is admistered through a "trade notice". For each one-year period starting on 1 July, the Ministry of Trade and Industry announces a revised list of the commodities for which import approval has to be requested. The Ministry of Trade and Industry also

has maintained an "import source diversification notice" - a list of commodities whose import from Japan has to be approved. Such discrimination against imports from Japan has been rationalized by the government in terms of the huge and chronic current account deficit that Korea has been running with Japan since the early years of industrialization.

Two instruments of "contingency" protection have also been used. One is a flexible tariff adjustment system, whereby the government can vary tariff rates under specified circumstances. The reasons for which tariff adjustment may be invoked to protect domestic industries include "emergencies", dumping, subsidy countervailance and "adjustments". Emergency tariffs are the Republic of Korea's version of safeguards. Adjustment tariffs allow for a temporary increase in the rate for a product in cases where general discretionary import licensing has been liberalized during the last three years. Flexible tariff adjustments are also allowed in retaliation for unfair discrimination abroad, most-favoured-nation treatment of non-GATT signatory countries, and tariff adjustment to stabilize the domestic prices of specific commodities. The last of these provisions is ordinarily used to reduce tariffs below the general rates rather than to raise them.

Another instrument of contingency protection has been the so-called import surveillance. Import surveillance products are announced periodically, and the Government monitors their import for possible quantitative restraint whenever they appear to be having "disruptive" effects on the domestic market. This sytem is to be abolished in 1988.

Historically, contingency protection has not been used much in the Republic of Korea, so that structural protection has been the major form of protection there. Accordingly, in the Korean context, import liberalization has always meant a reduction of structural protection and has been effected through the liberalization of basic tariffs and import licensing.

Up to the mid-1960s, the purpose of tariff policy was to maximize the protection of domestic industries. As a result, the level of structure of tariff rates grew increasingly complex over time.[1/] Since the late 1960s, the policy has been reversed and the government has tried to rationalize the structure of tariffs.[2/]

Table 2.4 shows the changes over time in the Republic of Korea's tariff system. It was reformed thrice in the 1970s: In 1972, 1976 and 1978. In 1972 and 1978, in particular, tariff reduction was one of the main objectives. In this connection, it may be added that while the average level of tariffs was lowered, those for selected products would often be raised. In 1976, for example, and especially in 1978, the tariffs on heavy industry products were increased.

The tariff system was reformed once again in 1984 to pave the way for the introduction of a Five-Year Programme of pre-announced tariff cuts. As shown in Table 2.5, the tariffs on industrial products are to be reduced by about

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1/ See Kim and Westphal (1976) for the Republic of Korea's early import policy.

2/ The history of the Republic of Korea's import policy since the early 1970s is discussed in details in Young (1984 a) and Kim (1986).

Table 3.4. Structure of the Republic of Korea's general tariffs rates: 1952-84, selected years

Year	Simple average (%)	Coefficient of variation
1952	25.4	0.70
1957	30.3	0.70
1962	40.0	0.77
1968	39.1	0.71
1973	31.5	0.70
1977	29.7	0.61
1979	24.8	0.69
1984	21.9	0.61

Source: Kwang-Suk Kim (1986), Table 2-4.

Table 2.5. Structure of the Republic of Korea's general tariff rates: 1983, 1984 and 1988
(per cent)

	1983	1984	1988
Agricultural products	31.4		25.2
Non-agricultural products	22.6	20.6	16.9
Raw materials	11.9	10.6	9.5
Intermediate products	21.5	18.7	17.1
Finished products	26.4	24.7	18.9
All products	23.7	21.9	18.1

Source: Ministry of Finance (1984).

one-fourth over the period and at the same time made more uniform across different stages of processing. Tariffs on agricultural products are also to be reduced but will remain relatively high.

The liberalization of import licensing is accomplished through periodic revisions of the trade notice. There are two approaches to preparing the trade notice. One is to list those products subject to automatic import approval, the other to list those products subject to discretionary import approval. The government used the (former) "positive list" approach. This change followed the declaration of import liberalization as formal policy. It was intended to signal the government's determination to liberalize imports and occurred concurrently with a significant liberalization of licensing. However, this import liberalization policy was in effect suspended immediately afterward and even reversed as the balance of payments on the current account worsened (Table 2.6).

Table 2.6. Import licensing liberalization ratio (ILLR)[a/]
(as of end December)

Year	ILLR (%)
1967	58.8
1968	56.0
1969	53.6
1970	52.8
1971	53.5
1972	49.5
1973	50.7
1974	49.3
1975	47.8
1976	49.6
1977	49.9
1978	61.3
1979	69.1
1980	70.1
1981	75.5
1982	77.4
1983	81.2
1984	85.4

Source: Kwang-Suk Kim (1986), Table 2-3.

a/ The proportion of items subject to automatic import approval under the regular trade notice, based on classification of goods into 1,097 items at the 4-digit level of the CCC Nomenclature (CCCN).

In 1978-79, a substantial liberalization of the general import licensing was implemented for the first time since the adoption of the new trade notice system. It was followed by a significant further liberalization measure in 1981. Finally, a multi-year programme of liberalization of general import licensing, covering the period up to 1988, was announced in 1983-84. Preannouncement of the plans for each commodity for licensing liberalization for each year is an important feature of this programme.

One way to quantify the extent to which imports were liberalized is to calculate what may be called the import licensing liberalization ratio (ILLR), obtained by dividing the number of commodity classes subject to automatic import approval by the total number of commodity classes at a given level of commodity classification Table 6 indicates the progress of the general liberalization of licensing in terms of this ratio.

Table 2.7 shows the structure of the current import licensing liberalization programme. The ILLR is to be raised to 95 per cent at the end of the programme. Some 360 products from a total of 7,915 will remain under general discretionary licensing at the end of the period. They will include

about 270 items in the class of primary products, food and beverages, 65 products such as jewellery, ornaments and collector goods, 23 raw silk and silk products, and a few others. These figures reflect the degree to which agricultural products are exempt from the import licensing liberalization in progress.

Table 2.7. Import licensing liberalization programme in the Republic of Korea[a] 1981-88
(as of 1 July, each year)

	Number of items[b]	Proportion of items subject to automatic import approval, under the regular trade notice (%)							
		1981	1982	1983	1984	1985	1986	1987	1988
Primary products, food & beverages	1,386	68.5	70.6	73.2	75.8	78.2	79.7	80.1	80.5
Chemical products, paper & ceramics	2,182	93.4	94.0	94.4	95.0	95.6	97.7	99.1	99.6
Steel & metal products	802	88.9	89.7	90.9	92.8	95.6	99.4	100.0	100.0
General machinery	1,414	64.2	65.5	68.7	78.0	83.0	89.4	93.3	100.0
Electrical & electronic machinery	495	40.9	46.1	53.6	62.4	73.0	87.0	95.5	100.0
Textile products, incl. leather garments	1,089	65.4	68.4	80.4	90.3	93.1	95.1	96.9	97.8
Others	547	71.2	75.7	81.2	82.1	82.8	85.7	88.2	88.2
Total	7,915	74.7	76.6	80.4	84.8	87.7	91.6	93.6	95.4

Source: Ministry of Trade and Industry, 1986.

[a] The programme for 1986-88 is announced in the plan.
[b] At the 8-digit level under CCCN as of 1984.

Table 2.7 suggests that by 1988 most mainstream industrial products will be free of quantitative restrictions. Although it should be noted that the import source diversification notice which mostly consists of manufactures covered 16 per cent of the total commodity classes in 1985, the percentage has been declining in recent years. In terms of commodity coverage, import surveillance has not been important. Table 8 shows that the proportion of commodity classes covered by import surveillance has been decreasing in recent years and currently is below 2 per cent. The flexible tariff system has not been employed frequently either. For example, according to the Ministry of Finance, in the first half of 1986 only three items fell under emergency protection and two under adjustment tariff protection. There were no other cases of tariff increases.

Table 2.8. Commodity coverage of import surveillance: 1981-85
(as of each year-end)

Year	Total commodity classes (A)	Commodity classes under surveillance (B)	% (B/A)
1981	7,465	193	2.6
1982	7,460	201	2.7
1983	7,460	161	2.1
1984	7,915	125	1.6
1985	7,915	118	1.5

Source: Ministry of Trade and Industry.

3. PATTERN OF INDUSTRIAL DEVELOPMENT AND IMPACT OF IMPORT LIBERALIZATION

The years since 1970 are divided into three periods for the purpose of analyzing industrial policies. In the early 1970s, up to 1975, the drive for heavy industrialization had not yet been launched, and industrial development largely reflected the thrust of more-or-less across-the-board promotion of exports initiated in the 60s. In the next period, up to 1978-79, the promotion of heavy industry was in full progress. In the final period, the years since 1980, that policy direction has been reversed.

Table 2.9 shows that the growth of manufacturing since the beginning of the 1970s has been high, particularly in the non-traditional skill-intensive sectors. The seven fastest-growing industries during 1971-83 have been electrical machinery, non-ferrous metal products, precision ("professional and scientific") equipment, iron and steel products, general machinery, transportation equipment, and fabricated metal products. Precision equipment excepted, all are heavy industries. In contrast, the growth of such traditionally important sectors as textiles and apparel has been much slower.

Table 2.10 distinguishes between light and heavy industries as defined by the government. It shows that heavy industries grew rapidly in the early 1970s, i.e. the phenomenon of heavy industrialization was already well underway by the time the government's drive was launched. In late 1970s and early 1980s growth rates decreased in most heavy industries, but compared to the rest of the manufacturing sector the rates were still relatively high. Light industries thus came to lag well behind.

The pattern of heavy industrialization in the Republic of Korea's manufacturing emerges clearly from Table 2.11. It shows that heavy industries increased their share of nominal manufacturing output by 20 percentage points between 1971 and 1983. Further details can be found in Appendix Table 1, showing that iron and steel products, electrical machinery, transport equipment and general machinery experienced large real increases in their share of output, while food, beverages and tobacco, and wood products experienced the opposite trend. A similar trend for nominal output is visible in Appendix Table 2, which shows that in the course of heavy industrialization nearly all light industries suffered a decrease in their share. In particular,

Table 2.9. Growth of manufacturing output, 1971-83[a/]
(output valued at 1980 prices)
(percentage per annum)

	1971-83	1981-75	1975-80	1980-83
Light industries	11.0	16.5	10.5	5.0
Food, beverages & tobacco	9.6	10.6	12.0	6.8
Textiles	12.7	21.8	10.5	4.8
Apparel	13.2	25.8	8.0	6.4
Leather products	16.2	38.0	8.0	4.5
Footwear	14.9	33.5	10.6	0.4
Wood products	6.6	11.1	8.7	-2.3
Rubber products	18.8	20.7	26.6	4.6
Miscellaneous petroleum products	6.9	7.4	8.0	4.4
Plastic products	10.4	13.2	24.9	2.4
Printing & publishing	9.1	11.2	10.9	3.7
Professional & scientific equipment	23.4	49.2	18.5	2.5
Miscellaneous products	10.1	16.8	8.8	3.7
Heay industries	16.5	22.6	16.6	8.5
Paper products	12.4	16.2	13.1	6.4
Industrial chemicals	17.6	29.0	16.7	5.1
Other chemical products	15.0	22.4	13.8	7.7
Petroleum products	8.2	7.1	12.6	2.7
Non-metallic mineral products	12.4	15.9	12.6	7.6
Iron & steel products	22.6	38.7	18.7	9.7
Non-ferrous metal products	24.5	28.2	23.7	21.0
Fabricated metal products	19.5	26.2	21.9	7.3
General machinery	21.8	33.2	20.3	10.5
Electrical machinery	25.3	44.1	21.3	9.7
Transport equipment	20.4	28.4	22.4	7.5
Total manufacturing	13.8	19.3	13.7	7.0

Source: Bank of Korea.

[a/] Each year represents a 3-year average around it.

food, beverages and tobacco, textiles and wood products expereinced sharp declines, even though they remained major industries. Meanwhile, iron and steel products, petroleum products, electrical machinery, industrial chemicals, transport equipment and general machinery emerged as major industries.

Table 2.11 indicates the role that exports have played in the heavy industrialization process: Exports expanded faster than manufacturing as a whole. Closer examination shows, however, that exports played a pronounced role as an engine of growth in both the heavy and light industries only in the

Table 2.10. Composition of manufacturing output: selected years[a/]
(per cent)

	1971	1975	1980	1983
In real terms:[b/]				
Light industries	56	51	44	42
Heavy industries	44	49	56	58
In nominal terms:				
Light industries	62	52	45	43
Heavy industries	38	49	56	57

Source: Appendix Tables 1-2.

[a/] Each year represents a 3-year average around it.
[b/] Output in valued at 1980 prices.

early 1970s. In the late 1970s, exports failed to generate growth in either sector. In the 1980s, an asymmetry developed, with significant export-led growth in the heavy but none in the light industries. This asymmetry suggests that, in general, the Republic of Korea had more or less exhausted the room for further increases in the international competitiveness of the light industries by the late 1970s. It also suggests that the growth of heavy industries was based on the domestic market at that time, presumably as a consequences of the import substitution bias of new investments and of the weakness of market conditions abroad.

Table 2.12 shows that, unlike the export-output ratio, the import penetration ratio, i.e., the proportion of imports in apparent domestic consumption, has been relatively stable. Nevertheless, a pattern of change can be observed. In the early 1970s, changes in the import penetration ratio varied among industries in the case of light industry but were generally limited in magnitude. In the heavy industries, however, the import penetration ratio decreased in general, an indication of a definite tendency toward import substitution. Import substitution in heavy industries continued in the late 1970s. In the 1980s, import penetration has been growing in nearly all areas, with the important exceptions of food, beverages, and tobacco, iron and steel products, and non-ferrous metal products. This would indicate that import liberalization has been effective in recent years.

Table 2.13 shows the development of heavy and light industry manufacturing trade shares. Heavy industrialization has been more prominently visible in exports than in manufacturing growth as a whole. The share of heavy industry exports increased from 22 per cent to 56 per cent over the 1971-83 period.

Appendix Table 3 shows that textiles dominated the Republic of Korea's exports of manufactures in the early 1970s: Textiles, apparel and wool products accounted for half of total exports and two-thirds of exports of light manufactures. Light manufactures themselves accounted for nearly 80 per

Table 2.11. Export penetration ratio[a] by industry: selected years[b]
(per cent)

	1971	1975	1980	1983
Light industries	19	30	29	29
Food, beverages & tobacco	2	7	8	3
Textiles	26	38	38	41
Apparel	46	70	74	67
Leather products	23	48	42	40
Footwear	51	30	63	100 [c]
Wood products	41	45	33	18
Rubber products	28	45	38	28
Miscellaneous petroleum products	0	1	2	2
Plastic products	4	18	10	8
Printing & publishing	1	9	7	8
Professional & scientific equipment	11	35	62	68
Miscellaneous products	61	49	64	64
Heay industries	9	18	19	27
Paper products	1	4	6	4
Industrial chemicals	7	6	11	12
Other chemical products	1	2	2	3
Petroleum products	3	7	1	7
Non-metallic mineral products	5	14	15	12
Iron & steel products	16	22	21	22
Non-ferrous metal products	16	9	13	8
Fabricated metal products	10	39	45	53
General machinery	15	21	17	28
Electrical machinery	25	36	33	45
Transport equipment	4	22	46	90
Total manufacturing	15	24	24	28

Source: KDI Trade Tapes; Bank of Korea.

[a] Export data in SITC have been reclassified by KSIC and converted at the average exchange rate of each year.

[b] Each year represents a 3-year average around it.

[c] Overestimated due to inaccuracy in conversion.

Table 2.12. Import penetration ratio[a/] by industry: selected years[b/]
(per cent)

	1971	1975	1980	1983
Light industries	13	14	14	13
Food, beverages & tobacco	14	11	13	7
Textiles	20	21	17	19
Apparel	1	1	1	4
Leather products	25	56	49	58
Footwear	0	0	0	0
Wood products	2	2	4	8
Rubber products	3	3	4	6
Miscellaneous petroleum products	1	1	3	3
Plastic products	3	3	2	4
Printing & publishing	4	3	4	4
Professional & scientific equipment	44	40	59	75
Miscellaneous products	15	13	22	27
Heay industries	34	30	25	27
Paper products	18	19	21	19
Industrial chemicals	45	36	29	30
Other chemical products	10	10	13	14
Petroleum products	4	4	7	7
Non-metallic mineral products	5	6	6	7
Iron & steel products	43	31	19	16
Non-ferrous metal products	44	45	33	25
Fabricated metal products	33	27	27	27
General machinery	77	69	56	56
Electrical machinery	39	35	29	40
Transport equipment	38	42	45	81
Total manufacturing	23	24	21	22

Source: KDI Trade Tapes; Bank of Korea.

a/ Export data in SITC have been reclassified by KSIC and converted at the average exchange rate of each year.

b/ Each year represents a 3-year average around it.

Table 2.13. Composition of manufactures trade: Selected years[a/]
(per cent)

	1971	1975	1980	1983
Exports:				
Light industries	78	65	56	44
Heavy industries	22	35	44	56
Imports:				
Light industries	30	25	26	23
Heavy industries	70	75	74	77

Source: Appendix Tables 3-4.

[a/] Each year represents a 3-year average around it.

cent of exports of manufactures. Since then, however, the share of textiles has been halved, while the export of wool products has nearly stopped. This was the major factor in the drastic decline of the export share of light manufactures. In the meantime, transport equipment, electrical machinery, iron and steel products and fabricated metal products have emerged as the major exports products and have sharply raised the overall share of heavy industry in exports.

Table 2.13 is somewhat surprising in that it shows clear growth of heavy industry imports that parallels the domestic heavy industrialization. At the beginning of the period under study, imports of manufactures were predominantly from heavy industry and since then the preponderance of heavy industry products in imports has grown further. Appendix Table 4 shows that, specifically, electrical machinery and transport equipment increased their shares. This trend stopped during the late 1970s but picked up again in the 1980s.

These parallel increases in both exports and imports show that domestic heavy industries have not been integrated vertically. There is a high degree of international vertical intra-industry specialization in heavy industry, with domestic productive activities consisting largely of the processing and assembly of imported materials and parts. The import composition shown in Table 2.3 suggests this pattern as well. To an important degree therefore, the Republic of Korea's imports are complements to rather than substitutes for domestic production. In so far as import liberalization in the Republic of Korea covers heavy industries, it will bring about increased intra-industry specialization in these industries, leading to increases in both domestic production (responding to growing intra-industry trade, a clear trend since 1980) and imports of heavy industry goods.

Table 2.14 shows the increase of import licensing liberalization during 1977-84 by industry. It shows that the programme deeply affected some heavy industries as well as some light industries, although protection might have been relatively less important in the first place in such sectors as textiles.

Table 2.14. Import licensing liberalization ratio[a/] by industry: 1977-84, selected years
(per cent)

	Total imported items in 1977	ILLR (%)			
		1977	1980	1983	1984
Food, beverages & tobacco	191	49	45	60	61
Textiles	227	40	70	81	90
Apparel	75	21	42	74	91
Leather products	32	66	87	91	100
Footwear	9	44	100	100	100
Wood products	50	72	82	90	100
Rubber products	26	39	92	91	92
Miscellaneous petroleum products	12	92	100	100	100
Plastic products	14	0	93	100	100
Printing & publishing	17	82	88	94	94
Professional & scientific equipment	72	57	60	67	75
Miscellaneous products	62	34	54	64	70
Paper products	42	45	88	93	93
Industrial chemicals	305	48	77	83	84
Other chemical products	107	87	96	97	98
Petroleum products	17	94	100	100	100
Non-metallic mineral products	99	58	86	91	91
Iron & steel products	92	57	76	80	84
Non-ferrous metal products	76	82	90	89	89
Fabricated metal products	82	61	85	94	95
General machinery	278	49	54	65	70
Electrical machinery	137	20	29	48	56
Transport equipment	81	32	31	37	46
Total manufacturing	2,093	50	67	76	80

Source: Office of Customs Adminstration Trade Tapes.

[a/] The number of automatic import-approval items relative to the total number of actually imported items. Commodities have been counted in terms of the Republic of Korea's tariff lines.

The "relative export-import ratio" shown in Table 2.15 should reflect both the Republic of Korea's comparative advantage and policy distortions such as import restrictions. The table suggests that the Republic of Korea has an undisputedly strong comparative advantage in such products as footwear, apparel, rubber products, miscellaneous products and textiles. Overall, light industries continue to have a comparative advantage, but their strength has been declining steadily. Coversely, heavy industries in general lack a comparative advantage, although specific products such as iron and steel products, fabricated metal products and transport equipment - i.e., ships at present - have been gaining in advantage very rapidly since the early 1970s. It is interesting to note that, starting from very low bases, the relative

Table 2.15. Relative export-import ratio[a] by industry: selected years[b]
(per cent)

	1971	1975	1980	1983
Light industries	2.58	2.21	2.17	1.92
Food, beverages & tobacco	0.21	0.64	0.51	0.57
Textiles	0.35	2.27	2.55	2.25
Apparel	262.33	178.57	225.54	3o.54
Leather products	1.53	0.74	0.64	0.51
Footwear	829.03	455.98	1,376.62	811.49
Wood products	70.33	52.49	9.74	1.79
Rubber products	20.58	30.46	14.23	4.15
Miscellaneous petroleum products	0.14	0.53	0.56	0.56
Plastic products	2.48	7.29	3.71	1.66
Printing & publishing	0.55	3.27	1.48	1.48
Professional & scientific equipment	0.26	0.80	0.66	0.50
Miscellaneous products	14.90	6.35	5.43	3.49
Heay industries	0.31	0.46	0.60	0.73
Paper products	0.06	0.16	0.20	0.13
Industrial chemicals	0.15	0.11	0.27	0.23
Other chemical products	0.20	0.16	0.15	0.13
Petroleum products	1.38	1.97	0.12	0.70
Non-metallic mineral products	1.65	2.79	2.38	1.26
Iron & steel products	0.43	0.63	0.99	1.07
Non-ferrous metal products	0.41	0.12	0.26	0.19
Fabricated metal products	0.39	1.70	1.94	2.21
General machinery	0.09	0.11	0.14	0.23
Electrical machinery	0.88	1.04	1.03	0.90
Transport equipment	0.12	0.37	0.90	1.45
Total manufacturing	1.00	1.00	1.00	1.00
(Exports/imports)	(0.58)	(1.01)	(1.16)	(1.37)

Source: KDI Trade Tapes.

[a] The ratio is 1.00 for all manufactures.

[b] Each year represents a 3-year average around it.

export-import ratios for such sectors as paper products, industrial chemicals, non-ferrous metal products and electrical machinery increased for a while but then declined in the early 1980s. Import liberalization seems to have been a factor in this process.

The preceding analysis suggests that the pattern of the Republic of Korea's trade and industry has responded rather sensitively to the changes in industrial and import policies. The Republic of Korea's heavy industrialization, which was

well underway by the mid-1970s, was associated with a decreasing level of import penetration in heavy industry in general throughout the decade. During that period, the Republic of Korea's import policy remained essentially protectionist, and import liberalization was initiated only toward the end. During 1975-80, in particular, the share of imports of heavy industry manufactures stagnated. Meanwhile, the level of intra-industry trade remained stationary.

Since the liberalization of imports at the end of the 1970s, however, import penetration has been rising in general and in heavy industries in particular, while the heavy industry share of manufactured imports has been rising, too. The index of intra-industry trade has been rising and the same time. It is not possible to pinpoint the role of import liberalization in the context of these developments, but these establish a strong presumption that import liberalization has been playing a substantial role in promoting the Republic of Korea's industrial adjustment, especially in promoting intra-industry specialization in heavy industries.

4. CONCLUSION

This paper has examined the Republic of Korea's current import liberalization programme as well as evidence about the related patterns of adjustment of industries. The programme was adopted and strengthened as means of promoting industrial adjustment, especially in heavy industry, where government intervention and protection had nurtured inefficient and excessive import substitution.

The programme consists largely of liberalization of the general discretionary import licensing of manufactures and has taken place in the presence of relatively high tariffs and other instruments of contingency protection. Its salient characteristics has been gradual liberalization over a number of years according to adjustable advance notice.

The present study has not been able to present a specific pattern of industrial adjustment to this programme in the Republic of Korea. Still, it has established a strong presumption that the programme contributed to an acceleration of heavy industrialization in recent years, promoting an intra-industry specialization in particular.

Thus, modest as the programme may have been, it seems to have effected some real adjustment. For instance, it has facilitated imports of those commodities in which there were no import-competing firms. The production and trade statistics suggest that this has occurred in such heavy industry sectors as electrical machinery and transport equipment. As a result, intra-heavy industry specialization and trade has increased.

Also, there are indications that where there were import-competing domestic firms, there seems to have occurred a substantial degree of inter-firm adjustment.[1/] Many firms curtailed their operations, and a large number seems to have tried to gain international competitiveness through technological advances and other efforts.

1/ Discussed at some length in Young (1986).

The patterns of import liberalization and the consequent industrial adjustment show that the Government assigns an important role to import liberalization as an instrument of industry promotion. It has tried to minimize inter-firm adjustment while promoting intra-firm adjustment with assistance in the form of supportive macro and industrial policies. The Republic of Korea's approach to import liberalization since the late 1970s may be characterized as one that minimizes the cost of adjustment, on the one hand, and as one that maximizes the role of import liberalization as an instrument of infant industry promotion, on the other. This is achieved through a gradual import liberalization under a pre-announced programme, stimulating firms by putting on pressure to remove inefficiencies and to learn by doing.

Evidence seems to indicate that to a significant degree this approach to import liberalization has worked. This does not mean, however, that inter-firm adjustment to import liberalization can be avoided altogether. Some firms and some industries will simply not prove viable. Under the present import liberalization programme, adjustment of this nature seems to have been largely postponed. The next phase of import liberalization will have to address this issue. Progress will have to be made along at least three lines in this phase.

First, all the remaining manufactured products should be removed from the trade notice. These include those competing with products from domestic industries with rationalization problems. Second, the role and administration of the import-source diversification scheme has to be critically reviewed and reformed in the spirit of import liberalization. Third, the level of the general tariffs on manufactures will have to be brought down substantially to complement the reduction of quantitative restrictions. In addition, policy-makers must seriously address the question of the rationalization of agricultural protection in the long-term perspective, in spite of political and social pressures to the contrary.

Appendix Table 1. Composition of manufacturing output: Selected years[a/]
(output value at 1980 prices)
(per cent)

	1971	1975	1980	1983
Light industries	56	51	44	42
Food, beverages & tobacco	23	17	14	14
Textiles	13	14	13	12
Apparel	4	5	4	4
Leather products	1	1	1	1
Footwear	1	1	1	1
Wood products	4	3	2	2
Rubber products	1	1	2	2
Miscellaneous petroleum products	4	2	2	2
Plastic products	2	2	2	2
Printing & publishing	2	1	1	1
Professional & scientific equipment	0	1	1	1
Miscellaneous products	2	2	1	1
Heay i·dustries	44	49	56	58
Paper products	2	2	2	2
Industrial chemicals	5	7	8	7
Other chemical products	3	3	3	3
Petroleum products	16	10	10	9
Non-metallic mineral products	5	4	4	4
Iron & steel products	4	8	10	11
Non-ferrous metal products	1	1	1	2
Fabricated metal products	1	2	2	2
General machinery	2	2	3	4
Electrical machinery	3	6	8	9
Transport equipment	3	4	6	6
Total manufacturing	100	100	100	100

Source: Bank of Korea.

Note: [a/] Each year represents a 3-year average around it.

Appendix Table 2. Composition of manufacturing output: Selected years[a/]
(output value at current prices)
(per cent)

	1971	1975	1980	1983
Light industries	62.3	51.5	44.5	42.7
Food, beverages & tobacco	21.8	16.0	14.9	15.3
Textiles	18.2	15.5	12.5	11.4
Apparel	5.3	5.1	4.3	4.7
Leather products	0.5	1.0	1.1	1.0
Footwear	0.4	0.7	0.7	0.6
Wood products	4.9	3.1	2.2	1.6
Rubber products	1.3	1.7	2.0	1.9
Miscellaneous petroleum products	3.0	1.8	1.8	2.0
Plastic products	2.3	1.9	1.6	1.4
Printing & publishing	1.8	1.4	1.2	1.1
Professional & scientific equipment	0.6	1.2	0.8	0.6
Miscellaneous products	2.3	2.1	1.4	1.2
Heay industries	37.7	48.5	55.5	57.3
Paper products	3.1	2.9	2.1	2.0
Industrial chemicals	4.2	6.5	7.6	7.0
Other chemical products	4.6	4.2	2.8	2.7
Petroleum products	4.4	7.0	9.5	9.8
Non-metallic mineral products	4.2	3.8	3.9	4.1
Iron & steel products	4.0	7.0	10.1	10.1
Non-ferrous metal products	0.6	0.8	1.4	1.8
Fabricated metal products	2.1	1.7	2.3	2.5
General machinery	1.6	2.1	3.2	3.3
Electrical machinery	4.9	8.0	8.4	8.2
Transport equipment	4.0	4.5	4.3	5.8
Total manufacturing	100.0	100.0	100.0	100.0

Source: Bank of Korea.

Note: [a/] Each year represents a 3-year average around it.

Appendix Table 3. Composition of manufacturing exports: Selected years[a/]
(per cent)

	1971	1975	1980	1983
Light industries	78	65	56	44
Food, beverages & tobacco	3	5	5	3
Textiles	31	25	20	17
Apparel	16	15	13	11
Leather products	1	2	2	2
Footwear	1	1	2	3
Wood products	13	6	3	1
Rubber products	3	3	3	2
Miscellaneous petroleum products	0	0	0	0
Plastic products	1	1	1	0
Printing & publishing	0	1	0	0
Professional & scientific equipment	0	2	2	2
Miscellaneous products	9	4	4	3
Heay industries	22	35	44	56
Paper products	0	0	1	0
Industrial chemicals	2	2	4	3
Other chemical products	0	0	0	0
Petroleum products	1	2	0	3
Non-metallic mineral products	1	2	2	2
Iron & steel products	4	7	9	8
Non-ferrous metal products	1	0	1	1
Fabricated metal products	1	3	4	5
General machinery	2	2	2	3
Electrical machinery	8	12	12	13
Transport equipment	1	4	8	18
Total manufacturing	100	100	100	100

Source: KDI Trade Tapes.

Note: [a/] Each year represents a 3-year average around it.

References

Government of the Republic of Korea (1981), The Fifth Five-Year Plan for Economic and Social Development, 1982-1986.

Kim, Kihwan (1984), The Korean Economy: Past Performance, Current Reforms and Future Prospects, Seoul: Korea Development Institute.

Kim, Kwang-Suk (1986), The Timing and Sequencing of a Trade Liberalization Policy - The Korean Case (mimeograph).

Kim, Kwang-Suk and L.E. Westphal (1976), The Exchange and Trade Policies of Korea, Seoul, Korea Development Institute (in Korean).

Young, Soogil (1984 a), "Problems of Trade Liberalization in Korea," paper presented at the Wiston House (UK) Research Meeting on Participation of the Developing Countries in the International Trading System, Trade Policy Research Centre, October 1984 (to be published as a Thames Essay by the Centre).

——— (1984 b), "Import Liberalization and the Management of Economy," in Seoul National University Institute of Economic Research, The Korean Economic Journal, December, Vol.23, No.4 (in Korean).

——— (1986), Import Liberalization and Industrial Adjustment in Korea, KDI Working Paper 8613.

Young, Soogil, Jung-ho Yoo, Seung-jin Kim, and Jae-[illegible]n Kim (1982), The Basic Role and a New Direction of Industrial Policy, Seoul, Korea Development Institute (in Korean).

(b) The relationship between small and medium-size firms and large firms [1/]

1. INTRODUCTION

A small or medium-sized firm (SMF) may be characterized as one that is independently owned and controlled and is not dominant in its field of business. In developing countries, their disadvantages vis-à-vis large firms often include low productivity, managerial instability and unfavourable working conditions. The study describes the development of complementary links between SMF and large firms in the Republic of Korea.

2. THE HORIZONTAL RELATIONSHIP

In a horizontal relationship, there are no direct input/output links between manufacturers. Both SMFs and large enterprises serve their own market segments, the large enterprises generally providing mass-produced standardized goods, the SMF customized or specialized goods. SMF survival is closely related to its continued ability to cover this market segment in the face encroachments by large firms. The rapid development of technologies makes it easier nowadays for large firms to produce small batches of special goods in an economic way - commodity development, marketing and technology upgrading thus become essential to the survival of SMF. On the other hand, the maturation of some products (such as applied micro-electronics) lowers production costs to such an extent that SMF can enter the market formerly dominated by large firms by concentrating on special products using these technologies, and adapting them to their own needs.

3. THE VERTICAL RELATIONSHIP

In the present context, a vertical relationship is one where a firm orders supplies to be used in its own manufacturing process from an outside producer, its own production facilities not being able to provide these for technical or economic reasons.

A common vertical relationship is subcontracting, where a large firm places an order with one or more small or medium-sized firms. As small or medium-sized firms' wages are often lower, this type of vertical relationship has addidional advantages for large firms. In relationships with SMF the large firm tends to be the dominant partner. It often orders goods made to specific requirements, making it difficult for the SMF to sell the product elsewhere. Also, the type of good is on the whole not very sophisticated, and therefore available from a large number of suppliers which the large firm can play off against each other. Finally, the larger firm may use subcontracting to purchase goods which it only needs irregularly, and thus provides an insecure market.

1/ Based on a paper presented by Dr. Lee Kyu-Uck, Senior Fellow, Korea Development Institute, at the seminar at Seoul.

When subcontracting takes a long-term form with the large firm providing capital, technology, etc., incorporating an SMF in its production plan, the term subsidiarization is used. The large firms supply of products made to exact specifications is then ensured, and so is the SMFs market.

SMF only needs limited investments and management capabilities in this case. Its dependence, however, is very great and the development of a line of products for sale elsewhere becomes extremely difficult.

4. RELATED LEGAL FRAMEWORKS

4.1 The 1961 Act for co-ordinating business areas of small and medium-size firms

This Act regulates competition among SMFs and the entry of large firms in SMF markets. Although the designation of such markets is extremely difficult due to continuous changes in supply and demand, there is a rationale for this measure. Domination of a market by a big firm may lead to widespread SMF bankrupcy with concomitant social disruption, SMFs being major employers of the socially disadvantaged. Second, a large firm's entry may be solely motivated by a desire to monopolize a market; there may be no gains to the economy in the sense of a better or wider range of products. Third, there is the argument of protecting infant SMFs which may become contributors to industrial development. Fourth, it is generally felt that large firms should lead in the penetration of export markets and should therefore use their resources for that purpose.

When a large firm wishes to enter (or expand business in) a designated area, it must give prior notice to the Ministry of Commerce and Industry, reporting its plans. The Ministry then decides whether the interests of customers and firms in the business area concerned are sufficiently taken into account. The Ministry can ask a firm not to enter or to restrict activities in a non-designated area, if this would cause serious disruption for existing business. As Table 2.16 shows, the number of designated areas has increased from 23 in 1979 to 205 in 1984. With very few exceptions, these were all in the manufacturing sector. The largest increases were noted in the metal products, machinery and equipment industry. This reflects the increase in SMFs making parts for the fast growing heavy industry. The system at present covers virtually all SMFs operating in designated ares, and 29 per cent of all SMFs. So far, 78 large firms have applied for entry in designated areas under the Act; this has only been permitted in four cases.

The Act has had some undesirable side effects:

- the establishment of designated areas leads to the emergence of vested interests, and hence to a waste of resources and a distortion of the industrial structure - as the following examples show:
  - in more than one-half of the designated areas, large firms were already operating; the law thus discrimates against newcomers;
  - as most designated areas come under import liberalization, competition by imports is increased while domestic producers are prevented from taking a market share;

Table 2.16. Designated business areas for small and medium firms

2-digit industries	1979	1983	1984
Food, beverages and tobacco	1	6	10
Textile, wearing apparel and leather	3	13	21
Wood and wood products	-	-	9
Paper and paper products, printing and publishing	3	10	15
Chemicals, petroleum, coal, rubber and plastic products	6	8	26
Non-metallic mineral products	2	13	16
Basic metal	-	6	8
Fabricated metal products, machinery and equipment	3	26	76
Other miscellaneous products	5	10	23
Others	-	-	2
Total	23	103	205

Source: The Handbook of Small and Medium Firms, Ministry of Commerce and Industry, 1986.

- as there is no time limit to protection, SMFs are not encouraged to improve the efficiency and competitivity of their activities.

The Act could be improved as an economic policy instrument by reducing the number of designated areas, by introducing a time limit to protection and by paying more attention to the regulation of mergers and acquisitions by large firms, as these provide them with a way of circumventing the restrictions. Further, SMFs should be given support in shifting to other business areas when the market situation changes.

4.2 The 1975 Act for promoting subsidiarization of small and medium firms

The Act aims at protecting and promoting SMFs in vertical relationships. The Act provides tax reductions and various other financial incentives to mother firms and SMFs acting as (groups of) subsidiaries. The focus is on industries where subcontracting is already intensive. A co-operation programme must be drawn up by the mother firm and its subsidiaries, and incentives are dependent on approval by the Ministry of Commerce and Industry. Mother firms must conclude long-term subcontracts with subsidiaries to give the latter the opportunity to improve efficiency and quality in the context of stable production growth.

Under the Act, the firms involved must draw up a detailed contract specifying the terms under which co-operation takes place. These cover quality and type of products, delivery, payments and duration or frequency of subsidiarization contracts/orders. Consultation committees can be set up between the partners as a vehicle for technology diffusion and improvement.

The extent of subsidiarization under the Act is shown in Table 2.17. In terms of subsectors, subsidiarization is most common in the automobile, electronics and farming tool industries. Subsidiarization is on the whole not very common: only 5 per cent of the total number of SMFs in manufacturing had concluded such contracts in 1984. Subcontracting without reference to the Act, however, is common: Close to 40 per cent of all manufacturing SMFs had vertical relationships with larger firms. The efficiency of the Act in promoting stable subcontracting would therefore have to be reviewed, and other ways of inducing fair subcontracting practices to increase intensify mutual benefit links between SMFs and large industries must be looked at.

Table 2.17. Designated subsidiarization

	1980	1981	1982	1983	1984	1985	1986
Business areas	6	24	34	43	44	40	40
Items	71	426	1,038	1,445	1,553	1,256	1,253
Mother firms	64	220	345	389	395	337	337
Subsidiarized firms	263	1,141	1,940	2,435	2,487	2,180	2,189

Source: The Handbook of Small and Medium Firms, Ministry of Commerce and Industry, 1986.

4.3 The 1984 Act concerning fair subcontracting transactions

The Act is more comprehensive than the Act under 4.2. It also covers repair and construction, and individual subcontracts in addition to long-term subsidiarization. Thus, it represents a step forward in the legal framework for stimulating subcontracts. The requirements for mother firms and subcontractors are the same as those under 4.2, but the definition of mother firms has been broadened in accordance with the wider coverage of the Act. With the growth of markets and the increased specialization of production, subcontracting has grown rapidly: Since 1976, the number of subcontracted SMFs has more than double.

Although in most cases these subcontracts have benefitted both partners, unfair practices do occur. The most common among these are mother firms' low delivery prices and payment delays; the frequency of irregular orders, though still low, has moreover grown in rencent years. Several hundreds of such cases have been handled by the authorities, but it is suspected that the incidence may be far higher: SMFs will often not report on unfair practices for fear of damage to business contacts. The most effective way to ensure that mother firms honour subcontracts would be for SMFs to strengthen their bargaining power by co-ordinating efforts or enhancing their technology levels.

4.4 The Act concerning monopoly regulation and fair trade

This Act provides an indirect stimulus to SMF by guaranteeing free competition and fair trade. Such practices as the refusal to deal,

discriminatory dealings, boycotts, dumping, undue enticement of customers, tying arrangements, the abuse of a superior bargaining position, and exclusive dealing have been used by large firms against SMFs. Consequently, proper regulation of these practices will serve to protect SMFs. The Act has the effect of maintaining a competitive market structure in business areas of SMFs by controlling business integration. It prohibits business integrations that "may substantially restrict competition in any line of trade" or that are executed by employing unfair methods. Included under the definition are not only mergers, takeovers, acquisitions, and interlocking directorates but also the establishment of new firms. Hence, the entry of a large firm through the establishment of a small subsidiary as well as takeover of existing SMFs are subject to the regulation. The former does not cover entry of a large firm in business areas designated for SMFs, and it might be more useful to incorporate this regulation in the relevant Act described under 4.1.

5. FUTURE DEVELOPMENTS

5.1 The non-fixity of subcontracting

The vertical division of labour is defined not only by the technological level, the mode of production, and the market size of a good but also by social elements such as personal contacts in market transactions. As such, the vertical relationship is far more complex and mercurial than the horizontal one. It therefore differs by country and industry. In the case of virtually identical colour television sets, e.g., a US manufacturer will produce almost parts himself, a Japanese producer will concentrate on the electronics, purchasing or subcontracting the rest, while in the Republic of Korea subsidiarization, subcontracting joint ventures with foreign firms and purchasing are used. In Japan, the subcontracting SMFs will be assisted by the purchasers of their products, which is not the case in the US. In the Republic of Korea, assistance in this case is restricted to raw materials provision. The great extent of intensive contacts in Japan results from the family-like managerial system of Japanese firms which has been carried over to the inter-firm vertical relationship. Most of the heads of subcontracting firms were once employed by their mother firms but later spun off as self-employed workers. The system reflects the vertical structure of Japanese society. There are indications, however, that this system is changing due to economic and technological factors.

5.2 Recent development in Japanese subcontracting

The rapid growth of the Japanese machinery industry - which relies heavily on subcontracting - has led to a reorganization of subcontracting in line with the rapid technology, materials and demand changes. Small or medium subcontractors have gradually transformed themselves into self-sustaining firms through the improvement of specialized technology and the accumulation of managerial skills.

The introduction of multi-product small-lot production has forced SMF subcontractors to change and improve production processes. Process design, engineering, new technologies and production control have acquired much greater importance.

Subcontracting has on the one hand expanded as a consequence of the present development. Mother firms can concentrate resources on a few key products, design and product development. On the other, the introduction of automated integrated production processes may make it possible for the mother firm to economically produce goods that were formerly subcontracted; this also helps to retain employment. A larger accumulation of technological know-how within the mother firm is also achieved in this way.

Under the present circumstances, SMFs must incessantly important for SMFs to focus on cost reduction and techniques of delivery and cost control and strengthen their marketing capabilities, in addition to improving physical productivity though mechanization and automation. In case of production or processing that requires high-technology specialization, on the other hand, it is important for SMFs to focus on cost reduction and technological upgrading. The changing conditions also leads to a selection of subcontractors according to the criterion of economic efficiency, rather than through personal connections; SMFs requiring technical assistance are no longer considered for subcontracting. The challenge for SMF is thus to reinforce their technological adeptness and managerial capabilities in order to become equal partners rather than subordinates of the mother firms.

5.3 Prospects for subcontracting in the Republic of Korea

The increased flexibility needed in industrial operations will necessitate a reassessment of the existing policies and legislation relating to subcontracting in the Republic of Korea. On the one hand, institutional barriers should be removed; on the others the development of the physical, technological and human resources for SMF must be stimulated.

The fundamental issue is raising the competitiveness (price, quality) of products in the international market. Through their links with exporting mother firms, subcontractors are involved in this issue. Therefore policies improving the overall, global competitiveness of the Republic of Korea's manufacturing will also have a positive effect on SMF.

As to the new technologies to be adopted by SMF in this process, neither the financial resources nor the expertise will generally be available among SMFs to adopt the most sophisticated machinery; introducing semi-automated production processes may be more suitable. This does not mean that R and D should be neglected - it has not been given much attention so far in subcontracting, but the above makes it clear that its role is becoming crucial. R and D will, however, have to be adapted to the specific needs of SMF in the Republic of Korea's context.

Finally, more attention will have to be paid to the problems of so-called secondary subcontracting: firms supplying raw materials and special-purpose machinery to subcontractors have not been given support in the past. Yet many of these will have to greatly improve their performance in order to play a proper role in the present industrial environment.

Provided with protection and support where this is appropriate, SMFs can increase their contribution to the development of the industrial structure and the improvement of the international competitiveness of the Republic of Korea's

economy. The main force for strengthening SMF will, however, be found in competitive efforts to improve technologies, management, marketing and other business activities. While giving full scope to these private efforts, legislation and policies should be formulated in such a way as to provide an overall, long-term framework for SMF development.

(c) Note on managing development of basic industries in the Republic of Korea[1/]

1. EMERGENCE OF HEAVY AND CHEMICAL INDUSTRIES IN THE REPUBLIC OF KOREA: PROMOTIONAL MEASURES AND DEVELOPMENT STRATEGIES

Early industrial growth in the Republic of Korea was based on export-oriented, labour-intensive light industries. By the late 1960s, rising labour costs and competition from other developing countries necessitated a shift in industrial policies. The enactment of the Machine Industry Promotion Act in 1967 was a starting point, but only from 1973 onwards (when the Government began to implement a development policy centering on heavy and chemical industries) did a major shift in the orientation of industrial development take place. Measures included the provision of industrial infrastructure, investment and export financing support. Stimulating exports was crucial, given the limited domestic market.

Investment in the heavy and chemical industries reached a peak between 1977 and 1979, with US $9.8 billion or 79.1 per cent of total fixed capital investment in manufacturing in that period. The Government stimulated demand for domestic products by making special purchase loans available, especially for machinery. Other measures implemented at the time included special tax rebates for heavy industry and tariff and non-tariff protection.

While the heavy and chemical industries were selected as the focus of Government support, no detailed plans were drawn up for the types of industry to be established within these subsectors. The choice was left to private enterprise, with the Government adapting its support. Close co-operation between the Government and private enterprise on such issues as policies, technology diffusion, management and marketing was a key factor in the sector's fast growth; the availability of a disciplined and dedicated work force with a high educational level was another.

With Government support, large production facilities were built to realize economies of scale. Typical examples include a US $ 512 million shipyard with a capacity of 1.2 million tons/year and a US $3.5 billion steel works with a capacity of 8.5 million tons/year, both built in 1981. Technology was purchased in the early stages in order to be able to quickly market competitive products; meanwhile, R and D capacity was built up.

Between 1970 and 1985, the manufacturing industry production index rose from 100 to 998; the index for the machinery industry rose from 100 to 2,941. Total exports grew from US $830 million in 1970 to US $30.3 billion in 1985. The heavy industry share grew from 12 per cent to 57.9 per cent, and machinery exports by themselves accounted for some 40 per cent in the latter year. Whereas there is a small overall overall trade deficit, machinery exports have shown a surplus since 1982.

1/ Based on a paper presented by Dr. Kang Youngkook, Executive Managing Director, Daewoo Corporation, at the seminar at Seoul.

2. STRATEGIES AND EXPERIENCES OF THE DAEWOO GROUP IN MANAGING THE DEVELOPMENT OF HEAVY INDUSTRIES

Founded in 1967, the Daewoo group is now on US $7 billion TNC, composed of over 30 companies and employing over 100,000 persons. Although a number of major heavy and chemical industries are part of the group, it also includes engineering, construction, trading etc. companies. Stimulated by Governemnt incentives, which in the 1970s especially favoured large enterprises, a rapid expansion strategy was followed by the group. Products selected in accordance with the country's industrialization goals of the early 1970s included diesel engines, rolling stock and machine tools. Daewoo responded to the recent shifts in emphasis towards informatics by expanding into the electronics and computer fields. Such shifts are carried out by pooling the management, technical and financial resources of the group. While concentrating on products that are in the forefront of manufacturing development, Daewoo pursues a diversification policy to limit the high risks of such moves.

To acquire the technological capacities for such shifts, Daewoo initially purchased foreign product designs and sent technicians abroad to acquire know-how through on-the-job training. The company then started to improve on existing technologies and eventually began to develop its own products. Close contacts are kept with local universities and Governemnt research institutions. In 1982, the company established its own R and D centre; 90 per cent of the company's product is now based on its own technologies.

A well-trained and motivated labour force being a key element in success, the group has provided a good working environment, above average salaries and extensive training facilities to its employees. In return, long working hours are made. Efficient management receives special attention, and the management is expected to set an example for employees in all respects. On the other hand, employees are invited to submit suggestions for improved management and operations, and these have considerably contributed to company efficiency.

Daewoo relies on domestic suppliers for a large number of items. As the quality of these in part determines the quality of Daewoo's output, the company has financed a co-operative programme to improve the products of the suppliers, mainly small and medium-sized enterprises that do not have the means to make such improvements themselves. The programme offers financial, technical and managerial assistance, and the company not only places orders with the participating enterprises but also helps them plan future production by giving estimated requirements for their output over a 12-month period.

Daewoo started out by exploring the domestic market for industrial products, but its limitations soon forced the company to enter the international markets. Market penetration took place through international trade fairs, association with well-known foreign companies to take advantage of their reputation and sales networks and identifying large foreign trading houses for the distribution of products. Meanwhile, the expanding network of overseas branch offices of the company was used to collect product, technology and market information. The overall market strategy was to offer a quality product - custom-made, if necessary - at a competitive price and with first class consumer services.

Although the costs of this approach were high, it provided the company with a fast growing share in international markets: While exports were US $2 million in 1976, less than 5 per cent of total sales, they reached US $90 million in 1985, 20 per cent of total sales. Daewoo now exports computer-controlled precision machinery to the US and the FRG.

CHAPTER III

(a) Textile policy issues for developing countries[1/]

1. CHANGES IN THE INTERNATIONAL TEXTILE INDUSTRY: NEW PARAMETERS FOR DEVELOPING COUNTRIES

1.1 Changes in international textile-clothing trade

The expansion of textile and clothing exports has been fundamental to the economic growth of East Asian developing countries during the last two decades. Yet, changes in the international textile and clothing system indicate that in the future the contribution of both industries to economic development might differ from the past. Developing countries will therefore have to adjust their textile and clothing industries to new international parameters, in order to secure existing or develop new comparative advantages.

Over the 1965-1985 period, world exports of textiles and clothing grew from US $5.3 billion to US $61 billion. Export growth, however, was the result of different trends. The steady decline of the world export shares of yarns and fabrics, for the former since the 1970s, for the latter since the 1960s, and the rapidly growing share of garments are the most important. In fact, yarns and fabrics experienced absolute declines in value terms in the early 1980s (cotton yarns since the mid-1970s), reflecting both the build-up of sizeable production capacities in developing countries and the growing vertical integration of their textile and clothing complexes. In the case of fabrics, rapidly growing exports of synthetic fabrics reached and surpassed the level of natural fabric exports in the 1970s and early 1980s, but exports of natural fabrics gained ground again since the mid-1970s and had come close to the level of synthetic fabric exports by 1985.

The changing product composition of world trade flows of textile and clothing goods reflects deep changes in the industry's international division of labour, resulting from changes of comparative advantages of individual countries and country groups. Table 3.1 provides an overview of the changing world-export shares of the developed market economies (DMEs), the centrally planned economies (CPEs), and the developing countries. Two sub-groups of developing countries are distinguished according to the pace and timing of their entry into the world market of textiles and clothing. A first sub-group are those developing countries which have reached a more advanced level of income per capita and which at the same time have gained during the 1970s/early 1980s major shares in the textiles/clothing import markets of the United States and/or the European Community. These countries which will be referred to as "Advanced Textile Exporters" (ATEs) in the following, are Hong Kong, the Republic of Korea, Brazil, Mexico and Yugoslavia. All other

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1/ Summary of a paper prepared by the Regional and Country Studies Branch, UNIDO and presented at the seminar at Seoul. The full text of the paper is issued under symbol PPD/R.5.

Table 3.1. Share of selected country groups in world trade of textile and clothing goods
(Percentage)

	1965	1970	1975	1980	1985
	Exports				
Developed market economies	82.0	80.3	72.0	66.0	55.8
Advanced textile exporters	9.6	12.0	17.3	18.0	21.2
Other developing economies	6.8	5.7	7.8	13.4	20.9
Centrally planned economies	1.6	2.0	2.9	2.6	2.1
	Imports				
Developed market economies	70.3	75.6	78.0	77.5	80.1
Advanced textile exporters	5.0	7.5	5.3	6.0	8.2
Other developing economies	21.5	12.5	11.9	13.1	9.1
Centrally planned economies	3.2	4.3	4.7	3.4	2.6

Source: UNIDO Data Base.

developing countries will be referred to as "Other Developing Economies" (ODEs) in the following.

Initially the ATEs expanded their share in world export markets at the cost of both DMEs and ODEs; after 1970, their strengthened position was fully at the expense of the DMEs. After the mid-1970s, ATE shares stagnated as a consequence of ODE export growth. Growing exports from developing countries also increasingly substituted trade between DMEs: The share of intra-DME-trade in total DME imports fell from 80 per cent in 1965 to 50 per cent in 1985. The textile/clothing trade balance of the DMEs has been negative since the mid-1970s.

The global trend towards declining yarn/fabric trade and increasing trade in made-up articles is reflected in DME trade patterns. Natural yarns no longer have a significant share in DME trade, and after a period of growth in the late 1960s, imports and exports of synthetic yarn decreased as well. The late 1960s saw a strong decline in the natural fabrics trade shares, but afterwards a stabilization took place which is most marked in natural fabrics exports. After peaking in the mid-1970s, synthetic fabrics exports decreased slowly; imports (whose share has remained relatively small throughout) show a similar trend. Clothing exports (the largest single category) exhibit slow growth throughout, but knitwear export shares have remained virtually stagnant since 1970. The latter is also true for DME imports, but the import share of clothing expanded considerably, from 22.9 per cent of total textile/clothing imports in 1965 to 40.3 per cent in 1985.

The ATE countries' textile and clothing industries had achieved positive trade balances already in 1965, when their share in world exports was almost three times as large as their share in world imports. The ATEs gained rapidly

shares in international markets until the mid-1970s. Between 1975 and 1980, they could only insignificantly improve their international market positions, as their exports met both increasing protectionist barriers in industrialized countries and growing low-cost competition from other developing countries. Yet, in the 1980s, the ATEs could further increase their shares in international markets, at the expense of exports from the DMEs.

The ATE trade pattern for yarns differs in one important respect from that for DMEs: While synthetic exports are small (though increasing), imports have been quite large, though their share has been halved, from a 22.3 per cent peak in 1970 to 11.1 per cent in 1985. Natural fabrics have seen their export share decrease continuously, and are no longer very important. The import share has declined strongly as well, from 43.3 per cent in 1965 to 19.0 per cent in 1985, but a stabilization can be noticed in recent years. Exports of synthetic fabrics have grown to become the third largest category, with over 10 per cent; imports, however, are even more important although they decreased from a 40.5 per cent peak in 1970 to 29.7 per cent in 1985. Clothing has been the predominant export over the whole period, accounting for 36.6 per cent in 1965 and 45.7 per cent in 1985. It is followed by knitwear, with shares of 26.4 and 30.8 per cent, respectively. On the import side, there has been a decrease for both products during the 1970s, but shares then grew to 16.4 per cent for clothing in 1985, and 15.7 per cent for knitwear.

The ODEs played a relatively modest role in the world trade of textile and clothing goods up to the mid-1970s. In fact, ODEs were highly dependent on imports of textile and clothing products throughout the 1960s and 1970s. In the second half of the 1960s, the establishment of sizeable production capacities in these countries led to a steep reduction of their share in world imports. Yet it was not before 1980 that expanding exports could eliminate the ODEs' overall trade deficit in textiles and clothing. Subsequently they became significant net exporters: Between 1975 and 1985, the ODEs almost tripled their share in world export markets (see Table 3.1) with exports growing at an average annual rate of 31.1 per cent.

In the 1980s, the further steep rise of the ODEs' market share went parallel to new market share gains of the ATEs, but the average annual export growth rate of ODEs (11.7 per cent) was significantly higher than the growth rate recorded by the ATEs (4.3 per cent). Yet, export growth rates of both groups of developing countries fell significantly short of the rates recorded between 1975 and 1980, reflecting not only increasing trade barriers, but also the impact of the recession in OECD countries on demand for textiles and clothing. However, a decrease of the value of DMEs' exports between 1980 and 1985 by a total of 6 per cent allowed market share gains of developing countries between 1980 and 1985, comparable to the gains achieved with much higher growth rates between 1975 and 1980.

ODE yarns exports still show a fairly high share of natural yarns: 9.0 per cent in 1985. This, however, is only half the 1970 peak share. Synthetic yarns dominate imports, which after fast growth reached 16.6 per cent in 1970, and then levelled off to reach a 17.4 per cent level in 1985. The major 1960's export, natural fabrics, has seen its share decline to 13.4 per cent in 1985; synthetic fabrics exports have remained small. On the import side, a similar decrease in the share of natural fabrics is to be noted, but synthetics reached a peak of 32.9 per cent of 1975 at which it

still was, after some fluctuations, in 1985. The large export gains are in clothing and knitwear, growing from 16.4 per cent and 8.4 per cent in 1965 to 45.3 per cent and 22.7 per cent in 1985. Imports of knitwear, after growth up to the mid-1970s, have stagnated around 9 per cent; clothing imports reached a peak of 21.9 per cent in 1980, but have since decreased somewhat, the 1985 figure being 19.8 per cent.

1.2 Textile and clothing industries in economic development

During the 1960s, the majority of developing countries still were in the earliest phase of the development of their textile and clothing industries. Exceptions were developing countries with large internal markets and/or a sizeable domestic resource base (cotton) such as India, Mexico, Pakistan, Brazil. In large developing countries, trade tends to account for a smaller share of domestic production and consumption. A second group of exceptions are outward-looking countries such as Hong Kong and the Republic of Korea.

In the course of the 1970s, the developing countries expanded their textile and clothing industries, becoming net exporters of clothing and strongly reducing imports of textiles; a number of countries became net exporters of textiles as well. Almost all textile producing developing countries reviewed in the study had achieved a trade surplus for textiles and clothing combined by the early 1980s.

The growth of clothing exports has often originated in export-processing zones, utilizing duty-free imports of intermediate textile goods for further processing. In the course of industrial development, many developing countries succeeded in establishing increasingly vertically integrated textile-clothing complexes, which in advanced stages became net exporters. Yet, this general, historical pattern does neither fully reflect the experience of every individual developing country nor can its persistence be automatically assumed in the future. Some qualifications need to be made in this regard. The fact that most developing countries continue to be net-importers of textile goods reflects the difficulties to advance from a garment export led growth pattern to an integrated development of textile/clothing complexes. In fact, in recent years a trend-reversal can even be observed in terms of growing dependence on textile imports in developing countries such as the Philippines, Sri Lanka and Thailand,. It reflects the success of industrialized countries in modernizing their textile industries during the last decade in order to regain comparative advantages. In many industrialized (and also in some advanced developing) countries this was the result of specific sectoral industrial policy programmes which are described in section 2.

1.3 Changes of the industry structure: Concentration and interationalization

As a consequence of low entrance barriers for newcomers, concentration levels in the textile and clothing industries have always been far below manufacturing averages. During the last decades, however, tendencies towards oligopolistic market structures have become visible, especially in the relatively capital-intensive man-made fibres (MMF) industry. MMF producers are typically divisions of large multi-product transnational firms with sizeable financial and managerial resources. Downstream manufacturing tends

to be far less capital-intensive, and international competition tends to be strong. MMF producers have considerable market power vis-à-vis downstream producers, especially in developing countries where foreign subsidiaries of MMF producers tend to be sheltered from external competition by import barriers.

MMF is produced in some 50 countries. As Table 3.2 shows, production is dominated by the US, with Japan following. Europe's leading producers are the USSR, the FRG and Italy. There has, however, been a clear shift of production towards the developing countries. While these accounted for approximately 11 per cent in 1973, the 1987 share was some 38 per cent (note that Canada is included in the "other Americas" category). In Latin America, Mexico and Brazil lead production; the other developing country producers are mainly located in Asia, with the Republic of Korea and the Taiwan Province of China standing out.

Table 3.2. Production shares of major noncellulosic man-made fibres by geographic region, 1973 - 1987
(Percentage)

Region	1973	1981	1985	1987[a/]
Western Europe	31	24	20	18
Eastern Europe	8	11	12	13
United States	35	28	23	21
Other Americas	6	7	7	8
Japan	15	12	11	10
All Other	5	18	27	30
Total[b/]	100	100	100	100

Source: Calculated from Textile Organon, various issues.

[a/] Estimated capacity.
[b/] Totals may not add due to rounding.

A key factor influencing the competitiveness of national textile complexes is the degree of vertical integration. In the case of MMF production, backward integration involves the processing of a company's own chemical raw materials, whereas forward integration denotes a MMF company's uses of own fibres in the production of textiles. Forward integration can also include additional downstream activities, such as the manufacture of clothing and its distribution. In Western Europe, all but one of the MMF firms employ backward integration strategies.

In the case of the textile industry, internationalization is primarily characterized by substantial shifts that have occurred in the international division of production, the development of international linkages by European, Japanese, and United States trading companies, and the industrial adjustments being undertaken by national industries, and promoted by their governments. Technological progress has resulted in the integration of spinning and weaving

activities into large-scale plants, substantial increases in capital intensity, labour productivity and productive flexibility, and substantial improvements in product quality. Unless where special support has been made available, small and medium-sized firms have on the whole had great difficulties in keeping abreast of these changes.

Concentration pressures have not been as strong in clothing. While technological change has been relatively rapid in cutting and pressing, it has been considerably slower in sewing, the labour-intensive nucleus of this particular segment of the textile complex. Yet, recent technological advances indicate that the production of clothing might undergo sweeping technological and, consequently, structural changes similar to past developments in textiles production. Further pressure towards rationalization and concentration may result from the industry's often high specialization rates. As a reaction to this, US, Japanese and Korean firms have located specialized factories in low-wage areas while centralizing common services for economy.

1.4 Challenges facing developing countries

The future trends and challenges resulting from the changes outlined above can be summarized as follows:

- The share of textile and clothing expenditure in DMEs in total consumption is declining, as are population growth rates. Future growth rates for textile and clothing consumption are likely to be highest in developing countries. The markets of these countries will therefore become increasingly important;

- As national complexes and individual competitors increaseed their efforts to gain market shares on a global scale, or to protect their domestic markets, the nature, degree, and complexity of competition within the global textile complex have increased substantially and can be expected to intensify in the future. Selective protection of DME industries in the form of quotas favouring less developed countries has become an important factor in the shift of production to these countries;

- The persistent deficits in the textile (as opposed to clothing) trade developing countries are the consequence of successful restructuring efforts of textile industries in industrialized countries, the lack of corresponding programmes in most developing countries and the difficulties of "newcomers" to proceed from garment exports utilizing imported intermediate products (often in Export Processing Zones) to integrated textile-clothing development. The latter would have to include marketing, design and the establishment of sources of cheap intermediate inputs;

- The comparative advantage in low-price high-volume clothing would be with the emerging textile industries in developing countries (i.e. particularly ATEs), provided they are linked to strong export-oriented clothing industries which have large pools of low-wage labour, make use of modern production techniques and technology, and produce the quality of clothing demanded by developed country markets. Although the comparative advantage in special-type yarns and fabrics would at

present lie mainly with those West European producers who have introduced advanced, flexible technologies, developing country manufacturers should acquire the ability to introduce advanced techniques in order to remain competitive in the long run;

- Key elements determining future comparative advantages in textiles and clothing production are highly susceptible to policy action, such as access to new technologies and support to their dissemination in order to increase the flexibility of production, availability of skilled employees, access to inputs, access to sufficiently large markets to gain economies of scale, and rules affecting labour costs and labour productivity.

2. TEXTILE POLICIES OF DEVELOPING COUNTRIES: INDIVIDUAL EXPANSION AND MODERNIZATION

2.1 Protection

Compared to the industrialized countries, higher tariffs are levied by most developing countries on imports of textiles (yarns and fabrics) and clothing, with tariff rates ranging between 20 per cent and 100 per cent. The lower tariffs are for fibres and yarns, the higher tariffs are for fabrics and clothing. In addition, most developing countries have other non-tariff and non-quantitative trade restrictions. These tariffs and trade restrictions virtually "close" textile and garments markets of many developing countries to foreign competition, thus providing local producers the opportunity to subsidize foreign sales with high domestic contributions. The greater role of protection in the policy framework of developing countries compared to developed countries corresponds to the different policy objectives of developing countries, i.e. to establish and expand their young industries. In addition, the high profits generated on domestic sales are used to off-set the lower profit margins obtained from exports sales. There are, however, serious drawbacks to the use of this approach, unless offsetting policies are introduced. In particular, exports are being discriminated. In addition, such policies, unless continued with modernization and restructuring policies, may result in an inefficient industry.

2.2 Sectoral aid measures

Sectoral aid has included modernization assistance, input subisdies and job-preservation assistance. An example of the first measure is the Republic of Korea's textile industry modernization fund: As part of the 1982-1986 Plan, financial assistance was made available to replace obsolete machinery. Measures in the Philippines include subsidized capitalization arrangements, special regulations with regard to foreign exchange earnings to facilitate the purchase of imported machinery, and loans. Low-interest loans have also been made available by the World Bank.

Input subsidies are provided by a number of countries, either as direct subsidies (as in Pakistan) or in the form of cheap loans for raw material purchases (as in Thailand). Job preservation assistance is provided by e.g.

India and Pakistan, where uncompetitive companies have been nationalized, following West European strategies of the 1970s. In general, this approach discriminates against companies which attempt to become internationally competitive. They must not only compete with highly competitive companies in foreign markets, but with heavily subsidized public companies in their domestic markets. In most cases, both in the developed and developing countries, a more effective policy approach to maintain employment has been one geared to the replacement of antiquated capacity with modern, internationally competitive capacity coupled with an aggressive marketing to expand exports.

2.3 Tax incentives

Tax incentives can take the form of profit or earnings tax relief and of tax reductions on imported materials/equipment or exports/sales. These incentives will often be available to all industries or to groups of targetted industries; a number of countries, however, provides special tax relief for the textile and clothing industries (e.g. Thailand, India, Pakistan and the Philippines). In general, tax incentives have proved successful in combination with other support measures.

An example of general tax incentives which particularly benefit the textile and clothing industry is provided by the Republic of Korea. Firms with up to 700 employees are eligible for special investment tax allowances and accelerated depreciation rates. Most of the textile and clothing firms in this size category, these industries benefit directly. Moreover, tax-based measures to generally promote exports are available. Similar incentives apply in the Taiwan Province of China, with special arrangements for firms operating in EPZs.

2.4 Auxiliary services

These refer to various aspects of R and D and marketing. In the past, most attention focussed on the production aspects of fabrics, yarn and clothing. Today, it is increasingly apparent that fashion, design and fabric combinations are as important as price and product quality. Belgium and Spain (see Section 3) are examples of developed countries which have explicitly incorporated these aspects into their textile plans. Developing, and particularly advanced developing countries also are paying increasing attention to these aspects. One example is the Republic of Korea (see below). All three countries have included programmes designed to stimulate fashion and design, marketing services, and country and brand image promotion in their textile and clothing restructuring plans. They have also created non-profit institutions to administer their restructuring programmes, as well as centres for research and development, commercial activities, and production and management training.

2.5 Case study: The Republic of Korea

In the competitive Asian textile industry invironment of the late 1970s, the country 's Government formulated new policies and measures to modernize the industry. Key measures were amalgamation of units to realize scale

economies, redirection of investment towards dyeing and finishing and accelerated introduction of more technology/capital-intensive production methods. While the production of yarns and textile is to be the task of large units, smaller companies will concentrate on clothing production, using sophisticated labour-saving equipment.

The policy framework is the 1980 Basic Modernization Plan for Textile Industries. A Textile Modernization Fund has been established by both the Government and the private sector, from which textile companies can borrow at rates of 6-8 per cent per annum, with maturities ranging from 5-8 years. For small companies, special subsidized loans and export support are available. Moreover, those companies have access to the Small and Medium Business Promotion Fund; its terms are comparable to those mentioned above. Other general measures from which the industry benefits include tax reductions and depreciation allowances.

The Government of the Republic of Korea pursues a very active R and D policy in co-operation with private business. Textile R and D was supplied with US $20.6 million in loans during the 1976/1983 period. Government assistance has also been provided to improve dyeing and design.

In order to secure reliable supplies of raw materials at stable prices and to diversify export markets, several measures have been taken. On the import side, price-reduction and price-stabilization schemes have been established; on the export side, a diversification away from Japan and the US (which account for 40 per cent of Korean textile exports) is stimulated as well as diversification into non-quota products e.g. high-value quota products. Support for overseas investment is also provided.

A key role in the modernization process is played by the Korea Federation of Textile Industries (KOFOTI). It co-operates with the Government in its modernization drive, provides information on developments in the industry and strengthens foreign contacts and the Republic of Korea's foreign presence through missions, fairs, etc.

3. TEXTILE POLICIES OF INDUSTRIALIZED COUNTRIES: RESTRUCTURING TO MEET LOW-COST COMPETITION

3.1 Policy orientations and instruments

As growth in the demand for textiles and clothing stabilized or declined during the 1970's, and import competition increased, Governments of industrialized countries made a range of stimuli for the sector available. These include:

- general industrial incentives, which were being provided to all industrial branches alike; and/or

- special incentives provided to promote development in structurally less developed regions; and/or

- branch-specific incentives, aiming at restructuring and revitalizing the textile and clothing industries.

In the European Community, common textile and clothing policies have been widely confined to the area of trade policy (in the framework of the various extensions of the MFA), with the exception of a branch-specific allocation of approximately US $4.5 million within the EC's programme to promote R and D. Most individual member states also support R and D. However, the textile industry's share in funds provided by the EC remained small and the Commission of the EC in various cases intervened against specific incentives contained in support schemes of member states.

Among individual EC countries, the FRG stands out in restricting itself to general industrial incentives. Other EC countries did apply branch-specific incentives. In Italy, subsidized investment loans have been granted, and since 1978 Government loans or loan guarantees are provided for the restructuring of the industry. Yet, more important in the case of Italy has been direct Government intervention through public enterprises, particularly in the man-made fibre segment. This involvement had a positive impact on further down-stream segments of the complex, which benefitted from the provision of intermediate inputs at favourable prices. Other examples of Government ownership or particiation in can be found in Spain and the Netherlands.

Financial incentives to the textile industry were also provided by industrialized countries which are not members of the EC. For instance, Canada implemented a programme of approximately US $195 million in the 1981-1986 period, and in the U.S.A., 518 clothing and 71 textile enterprises benefitted between 1975 and 1982 from adjustment support in the framework of the U.S. trade legislation.

Comprehensive programmes for the whole textile-clothing complexes were undertaken by a number of European countries. These "textile plans":

- specified industry-wide restructuring objectives based on a comprehensive assessment of the industry's status, development potential and resource availabilities;

- provided financial support to companies to re-establish the financial viability of enterprises, to modernize the equipment and adapt the product-mix to changed market requirements, and to make changes in the company structure and technology consistent with the available labour force; and

- established new institutional arrangements involving the main agents concerned in the implementation of the plan and/or monitoring of its progress.

Due attention to the role of labour was a key factor in the success of these policies. This involved reallocation to other industries combined with retraining, early retirement schemes, flexibilization of working hours and improved work organization.

3.2 Case studies

The Beligium and Spanish textile plans provide good examples of restructuring policies in developed countries. The Belgian plan, apart from being successful, exemplifies the major areas and issues involved. Spain is an example of a Mediterranean textile exporter; this region will be a strong competitor with ATEs in the future.

Belgium

The aims of the textile plan launched in 1981 were the stabilization of employment and the strengthening of competitiveness in the EC market. The policies and programmes were developed by a tripartite committee representing the Government and labour and employers' organizations, on the basis of extensive studies. The plan consisted of three related parts: Financial restructuring and modernization, auxiliary services development and social support services. Financial support was distributed through and administered by a public holding company. The auxiliary services segment of the plan was implemented by a tripartite organization.

The purpose of the first part of the programme was to lower production costs by reducing excess capacity, improved productivity, lower purchasing and energy costs and reduced overheads. Finance for productivity improvements was disbursed on the basis of projects submitted by companies considered viable. Capacity increases were not supported financially. The companies themselves had to supply at least 30 per cent, and the private credit sector (banks) was expected to supply another 25 per cent in the form of a short-team loan against a subsidized interest rate. Auxiliary services included fashion and design, marketing, R and D and training. Particular attention was given to co-operative programmes for small and medium-size companies; the larger companies were considered to be able to develop these services individually. Co-operative programmes included the development of computer-assisted grading and drawing of patterns for clothing manufacturers. Social support mainly consisted of early retirement and unemployment benefit complementation schemes.

The plan achieved many of its original goals. Instead of employment declining to the 75,000 level which was forecast in the case that no action would be taken, employment in the textile and clothing industries actually increased from 101,500 persons in 1983 to 102,100 persons in 1984. In addition, the industries have succeeded in regaining market shares in the EC. One essential element for the success of the Plan was the emphasis put on the supply of risk capital. However, the companies assisted needed to be financially viable or have good prospects of becoming financially viable within a short time. Also, the projects submitted had to be practical and in line with market conditions. A second basic element was the multi-dimensional and internally consistent nature of the plan. That is, the financial restructuring segment was being supported with complementary activities: modernization, increased commercial activities, stimulation of creativity and product innovation and training.

Spain

Key objectives of the Spanish 1981 textile industry restructuring plan were to raise the industry's competitiveness, productivity and flexibility, to increase the share of higher value added products and to improve the managerial, production and financial structure of the individual participating firms. At the industry level, employment was to be stabilized, though shifts among the various segments of the textile/clothing complex were anticipated.

The instruments for achieving these goals were of a financial nature, including reductions of customs duties, turnover tax, corporation tax and income tax, and subsidies for both new equipment and for quality and design improvements and marketing. Subsidies are given up to a maximum of 70 per cent of a new investment. Moreover, companies are also eligible for a certain amount of area-specific general subsidies. To increase flexibility in production in response to seasonal fluctuations, unemployment benefit payments can be spread over a 12-month period and can be stopped during short periods of demand fluctuations. Early retirement schemes, etc., have also been introduced.

Up to July 1985, 476 companies submitted conversion plans. Job losses in these companies remained well below sector average, their exports grew by 370 per cent and productivity went up by 60 per cent.

The major problems encountered to date include a lack of interest in the plan on the part of small and medium-sized clothing companies, and insufficient development in the areas of fashion and marketing, product standardization, training of personnel, and the development and dissemination of information. The Design and Fashion Promotion Plan is to remedy these shortcomings. With Government assistance, a promotional infrastructure for both home and foreign markets is to be created, training centres [illegible]ely co-opeating with industry are to be established, and a Design and Fashion Promotion Centre has been created. As these measures will focus primarily on the clothing industries, they are likely to be of special benefit to the smaller industries.

4. THE RESTRUCTURING OF TEXTILE COMPLEXES IN DEVELOPING COUNTRIES: KEY AREAS AND POLICY ISSUES

4.1 Assessment of restructuring requirements and prospects

The 1990s are likely to witness a new round in the competition between developed and developing countries for world market positions. High efficiency will be the key concept rather than low cost. For the developing countries to retain, re-establish or strengthen their position in global markets, a number of steps will have to be taken. The examples of international restructuring outlined above could help to provide guidelines. The first step would have to be the formulation of textile industry restructuring programmes. Incorporating both supply and demand aspects, an assessment of the situation from both national and international perspectives would have to be made.

In the national perspective, this would include an evaluation of the textile industry's performance in terms of its past, current and potential contribution to the achievement of key development objectives, such as

- economic and industrial growth;
- foreign exchange earnings/savings;
- employment and income generation;
- price stability;
- satisfaction of basic domestic needs; and
- regional development.

Further, the state of the industry (capital stock, technology levels, marketing efforts) would have to be assessed.

In the international perspective, the focus is on the industry's competitiveness. Product prices, product quality, wage costs, capital costs, input costs and the structure of production costs would need to be established and compared with corresponding parameters of international competitors. This assessment would need to be complemented by an analysis of demand aspects, in which the actual and potential product basket would be contrasted against current and prospective national and international demand trends. Based on this assessment of the industry in national and international perspective, the desirable direction, extent and resource requirement of the restructuring process can be established.

4.2 Technological upgrading

Although the economic relevance of technological improvements varies between individual product categories, it becomes more and more obvious that in the production of textiles developing countries will have to follow the modernization efforts of industrialized countries, if they do not want to run the risk of remaining internationally competitive in simple, low value added products only.

Although a wide range of technologies is available in the international market, technological innovation has on the whole not been geared to the specific needs of developing countries. Some ATEs (Brazil, Republic of Korea) have established their own textile machinery industries, but these are often closely linked to major machinery manufacturers in industrialized countries.

A careful evaluation therefore has to be made of the type of modernization investments needed, also because resource limitations will often exclude an overall modernization of the industry. The main bottlenecks preventing the industry from achieving international efficiency levels will have to be identified; on the basis of this, the type of company eligible for modernization incentives can be singled out. The measures taken by the Republic of Korea with regard to dyeing (cf. Section 2.5) can be taken as an example.

The dualestic nature of the textile/clothing industry in many developing countries may necessitate special measures. Small and medium-sized enterprises generally using traditional companies which often use a mixture of outdated and modern technologies. Especially in the former case, technology improvement measures should take account of skill and enterprise finance requirements and of employment effects. In the case of the latter, the

presence of a degree of modern technology in an enterprise may make modernization measures relatively cheap and lead to maximum efficiency increases. Such measures should, however, take into account international standards and be carried out in the context of an overall structural change plan for the textile/clothing industry.

4.3 Auxiliary services

The capabilities of industries to respond to shifting international market trends can be improved through the increased use of market intelligence, a concentration on productive flexibility, fashion, design and quality control, coupled with increased efforts to develop international market linkages.

In the field of fashion and design, technological progress (CAD) enables developing countries to quickly respond to changing trends in their main export markets. Yet, given the size of the industry in many developing countries and high investment costs of introducing these technologies, most individual companies are not in a position to benefit from these technological advances. The establishment of design centres is, therefore, an option to improve a country's industrial design. The shortage of skilled designers may make it necessary to provide financial support to the contracting of such designers or the training of domestic designers abroad. Activities which would benefit specific enterprises (such as quality control centres) could be principally financed by their customers, through charging for their services. However, public financial support might be required in the initial phases, and in the long term the demand for the services of such institutions should be promoted through appropriate policy action.

International marketing could benefit from establishing contacts with trading houses in industrialized countries. Arrangements between producers of intermediate products in industrialized countries and textile mills and clothing industries in developing countries provide additional channels for communicating information on market trends, fibre developments, and associated textile technology requirements. Licensing and management contracts provide additional sources for gaining experience.

The development of such international linkages still leaves developing countries in the position of "price, quantity and design takers". Particularly for the relatively advanced textile and clothing industries of developing countries it will become important to play a more active role here. Regional co-operation may be a promising road towards the strengthening of own marketing capabilities.

Finally, the establishment and expansion of textile/clothing related training facilities is a necessary complement to , and possibly even a pre-condition for programmes aiming at increasing the industry's efficiency. The rapid pace of technological innovation has added a new qualitative dimension to the problem. A stocktaking of existing skill profiles in the industry, a comparison with required profiles resulting from a modernization programme, and the adjustment of training programmes must be an integral part of national policy programmes.

4.4 Labour

In several developing countries, labour costs may have a negative impact on international competitiveness. This may be partly due to the prevailing exchange rate; lowering the exchange rate could not only help to create more competitive wage levels, but could also generally help to make exports more competitive. Wages may also have to be closer related to the individual worker's productivity, and greater flexibility in the labour market and in labour legislation may have to be introduced.

Such measures should, however, give due consideration to workers' rights. Collective agreements could e.g. be drawn up for enterprises taking part in restructuring programmes which would compensate the labour force (through higher wages or otherwise) for the introduction of more flexible production methods or for labour reallocation production. Higher wages would be justified by increased productivity; reallocation and employment reduction may be justified by long-term employment gains as the industry expands under successful restructuring programmes. To be effective, all major unions involved in the industry should be partners in such agreements.

4.5 Establishing an institutional framework

In order to ensure the smooth functioning of the programme it is essential that all parties concerned should be consulted concerning its design and should co-operate in its implementation. Several countries, therefore, have established a permanent, tri-partite body, involving the Government, industry and labour. This tri-partite body may be closely attached to or form part of an institution which would be in charge of implementing the programme. This institution could, among others,

- evaluate and approve company restructuring plans;
- provide special financial support to the modernization efforts of small and medium-sized companies;
- support the horizontal amalgamation of companies in order to create more efficient units;
- finance collective activities undertaken by the industry.

Although such a body would have to reflect the particular conditions of a country and its textile and clothing industry, a careful evaluation should also be made of the experience with such institutions in countries which are presently implementing or have implemented a restructuring programme.

(b) Restructuring of textile and garment industry in Asian developing countries[1/]

1. TRENDS IN ASIAN DEVELOPING COUNTRIES IN THE LAST TWO DECADES

Being in many countries one of the largest industrial employers and the key industrial earner of foreign exchange, the textile and clothing industries have been usually considered - depending on the point of view - as essential promoters of industrial development in developing countries or as a major threat to industrial employment in the industrialized countries. "Export-led growth", the magic formula used to describe the exceptionally high growth rates of several Asian developing countries over the last two decades, was often used synonymously with "textile-led growth". Yet, recent trends in the international textile and clothing system indicate that, in the future, the contribution of both industries to economic development might differ from their roles in the development of certain Asian countries. This notion is not only founded in the persistance of tight international controls on trade with textile and clothing goods. New technologies, changes in the industry structure both within and between countries, and wide-spread government interventions through specific industrial policies are leading to new international constellations of competition and "man-made" comparative advantages.

A characteristic feature of the development of the textile and clothing industries in a number of the developing Asian countries has been a significant trade deficit in textile goods, resulting from insufficient capacities to fully serve domestic demand and, at later stages, to support rapidly expanding exports of garments. In many of these countries such garment exports originate from manufacturers based in export-processing zones, utilizing duty-free imports of intermediate textile goods for further processing.

In the course of industrial development, many of these countries have succeeded in establishing increasingly vertically integrated textile-clothing complexes, which in advanced stages became net-exporters. Yet, this general, historical pattern does neither fully reflect the experience of every individual developing country nor can its persistance be automatically assumed in the future. Some qualifications need to be made in this regard. Only a few countries fully completed import-substitution of textile products and even managed to achieve a trade surplus for such products. The fact that the majority of developing countries continue to be net-importers of textile goods reflects on the one hand the difficulties to advance from a garment-export-led growth pattern (with parallel imports of textiles) to an integrated development of textile-clothing complexes. In fact, in recent years in some developing countries a trend-reversal can be observed in terms of an again growing dependence on textile imports. It also reflects the success of some of the region's more advanced developing countries during the last decade in modernizing their textile industries in order to regain comparative

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[1/] Based on an issues paper prepared by the Regional and Country Studies Branch, UNIDO, for the seminar at Seoul.

advantages. This success was in some of these more advanced developing countries the result of specific sectoral industrial policy programmes. These policies aimed at modernizing the textile industries of the respective countries and adjusting their product-mix to new market requirements in order to regain or secure new and sound long-term comparative advantages.

2. CHANGES IN INDUSTRY STRUCTURE - TEXTILE

Significant structural changes in the textile and clothing industries are not limited to the international level, but can be also observed within individual countries. Until recently, the textile and clothing industries in most countries have been characterized by a large number of small and medium-sized firms, often family-owned. As a consequence of small plants and low barriers to the entry for new producers, levels of industrial concentration have generally been below the average for most manufacturing industries.

During the last decades, however, a trend towards oligopolistic market structures became visible, particularly in the production of man-made fibres. Man-made fibre producers are typically divisions of large multinational, multiproduct firms, with sizeable financial, technical and managerial resources. Man-made fibre production enjoys the largest economies of scale of all of the segments of the textile complex. It is also the most capital-intensive and usually most efficient segment. These characteristics dissipate rapidly in downstream-moving activities which are characterized by greater numbers of firms, less economies of scale, less production efficiency, greater labour intensity, and more intense international competition. Due to these structural differences, man-made fibre producers have considerable market power vis-à-vis individual textile companies in terms of product types, product quality and price.

A key factor influencing the competitiveness of national textile complexes is the degree of vertical integration. In the case of man-made fibre production, backward integration involves the processing of a company's own chemical raw materials, whereas forward integration denotes a man-made fibre company's uses of own fibres in the production of textiles. Forward integration can also include additional downstream activities, such as the manufacture of clothing and its distribution.

Technological progress has resulted in the integration of spinning and weaving activities into large-scale plants, substantial increases in capital-intensity, labour productivity and productive flexibility, and substantial improvements in product quality (defect-free output, texturing, fibre blends, and so on). The rapidly mounting costs associated with modernizing textile plants and the textile production process are placing severe burdens on small and medium-sized firms with limited financial resources, unless public funds are made available to support such investments. Corresponding government-led programmes to rationalize the production of fibres, textiles and clothing in a number of Asian developing countries have also had the net effect of a gradual increase in the level of industrial concentration, primarily in textiles.

3. CHANGES IN INDUSTRY STRUCTURE - CLOTHING

Concentration pressures have not been as strong in clothing in Asia's developing countries. While technological change has been relatively rapid in cutting and pressing, it has been considerably slower in sewing, the labour-intensive nucleus of this particular segment of the textile complex. Yet, recent technological advances indicate that the production of clothing might undergo sweeping technological and, consequently, structural changes, similar to past developments in textiles production. Further pressure towards rationalization and concentration may result from the high specialization ratios of the industry in many countries. Clothing firms specialized almost exclusively in a particular clothing category are highly vulnerable to changes in the operations.

4. CHALLENGES FACING ASIAN DEVELOPING COUNTRIES

The textile and clothing industries in developing Asia have thus experienced considerable change in the last three decades. These changes as well as changes at global level are anticipated to continue and will constitute important parameters for the plans of governments to develop, revitalize and/or restructure their industries. They can be summarized as follows:

(i) Demand for textiles and clothing is growing in the industrialized countries at a rate below the average demand increase associated with rising income per capita. Adding to this the persisting high differentials in population growth rates between developed and developing countries it can be concluded that the main growth markets for clothing in the future will be in the developing countries. Therefore, the potential of internal markets in Asia's developing countries constitutes a source of growth which these countries' textile industries will have to increasingly rely on in the future.

(ii) This conclusion, which is based on demand considerations, is supported by current trends on the supply side. As national complexes and individual competitors increase their efforts to gain market shares on a global scale, or to protect their domestic markets, the nature, degree, and complexity of competition within the global textile complex have increased substantially and can be expected to intensify in the future. Some of Asia's developing countries have successfully completed the transition from overall trade "deficit phases" to trade "surplus phases" of their textile-clothing complexes.

(iii) The establishment of country-specific import quotas by developed countries favouring less advanced developing countries has accelerated the development of lower-cost clothing industries in such countries. Textile industries from more advanced developing economies, such as Hong Kong, the Republic of Korea and India have for instance established clothing facilities in less advanced developing countries.

(iv). In the world-wide textile-clothing complex national industries are specializing in those segments in which they enjoy comparative advantages e.g. specialization in particular types of fibres, fabrics, and clothing. The international markets for textiles are increasingly being divided into two distinct segments: undifferentiated (commodity-type) fabrics and yarns and differentiated (specialty-type) fabrics and yarns.

(a) The first market is for basic yarns and fabrics which can best be satisfied with long production runs. The comparative advantage for this type of textile market is with developing Asia's new emerging textile industries provided they are linked to strong export-oriented clothing industries which have large pools of low-wage labour, make use of modern production techniques and technology, and produce the quality of clothing demanded by the markets of the developed countries.

(b) The second market is for specialized yarns and fabrics. It has grown substantially in the last twenty years, and is the combined result of textile firms seeking to become dominant in specific market segments, and the growing sophistication of clothing markets in developed countries. The introduction of new, flexible machinery allows these companies to react quickly on changing demand requirements in high-fashion markets and to produce even small lots cost-efficiently. Access to the more affluent markets, close links to man-made fibre firms, the domination of advanced fabric forming and finishing technologies, experience in marketing on a global scale and, last but not least, close links to manufacturers of textile machinery support these newly established comparative advantages which are characteristic for a growing number of textile manufacturers, in the first hand in Western Europe, but also in Asia.

(c) Key issues for the development of a policy framework for the restructuring of textile and garment industries [1/]

A vital step towards the design of a textile industry restructuring programme, be it for one segment or the entire complex, is a comprehensive stocktaking and evaluation of the industry. This assessment should be done incorporating both supply and demand aspects in national and most importantly, international perspectives.

In the national perspective, this would include an evaluation of the textile industry's performance in terms of its past, current and potential contribution to the achievement of key development objectives, such as

- economic and industrial growth;
- foreign exchange earnings/savings;
- employment and income generation;
- price stability;
- satisfaction of basic domestic needs; and
- regional development.

In the international perspective, the focus is on the industry's competitiveness.

- Product prices;
- product quality;
- wage costs;
- capital costs;
- input costs; and
- the structure of production costs;

would need to be established and compared with corresponding parameters of international competitors. This assessment would need to be complemented by an analysis of demand aspects, in which the actual and potential (given the country's resource endowment) product basket would be contrasted against current and prospective national and international demand trends.

Based on this assessment of the industry in national and international perspective, the desirable direction and extent of the required restructuring process can be established. To translate these restructuring objectives into a policy programme, the relevant national parameters would need to be established in terms of the textile industry's capital stock, its technological vintage, productivity, rehabilitation potential and modernization needs, using again as a yardstick international standards ("best practice" norms and levels achieved by main international competitors). Relevant national parameters to be included would also constitute these factors which are decisive for the "market effectiveness" of an industry such as distribution channels, marketing efforts and design activities.

1/ Based on a note prepared by the Regional and Country Studies Branch, UNIDO, for the seminar at Seoul.

The key objective of a textile industry restructuring programme is to increase the industry's international competitiveness. This involves two main issues. First, to reduce production costs through modernization of the capital stock, and second, to strengthen the capital structure of industrial companies, in order to enable them to initiate the required investments.

Crucial policy deecisions are called for in this context to determine which

- enterprises;
- segments of the textile clothing complex;
- type of machinery; and
- vintage of technology

should benefit from modernization incentives. Assuming that resource limitations exclude the possibility of a complete modernization up to latest technological standards of all segments of the production chain, a selective approach would be called for. Based on the results of the industry assessment those critical links in the production chain can be identified which demonstrate the most significant deviations from international standards and which constitute key bottlenecks preventing the textile industry from achieving international efficiency levels. Based on this, "eligibility criteria" may be established to determine which companies would benefit from modernization incentives.

In many developing countries the textile industry is of a highly dualistic structure, given by the co-existence of a usually large segment of small to medium-sized enterprises, operating with an outdated capital stock and serving mainly the domestic market, and a usually small segment of medium- to large-scale enterprises, serving both the domestic and external markets. The latter segment often consists of some highly modern enterprises complying with advanced technological standards and many technologically heterogeneous enterprises, operating modern and outdated equipment at the same time. The co-existence of both types of equipment is often given both within one manufacturing stage (e.g. spinning) and between various manufacturing stages (e.g. modern weaving equipment, but outdated finishing equipment), constituting a main bottleneck to achieving international efficiency standards.

Such enterprises constitute, under cost-benefit considerations, a particularly promising target group for modernization programmes under resource constraints, resulting in a maximum increase of the industry's efficiency with minimal financial support requirements. Focussing on these enterprises would correspond to a "picking-the-winner" strategy when it comes to establishing eligibility criteria for companies to benefit from modernization incentives. At the operational level, such companies may be identified taking investments undertaken in the recent past as a yardstick. Yet, this criterion by itself does not necessarily identify future "winners", as a company may have significantly invested, but in production lines not corresponding to the country's long-term comparative advantage. Company-specific variables will, therefore, not be sufficient for the determination of eligibility criteria, but will need to be complemented by critera derived from the assessment of the industry in national and international perspective and the resulting industry-wide restructuring objectives. International productivity standards in combination with criteria derived from the established restructuring objectives may also be used to decide whether technology of an older vintage should benefit from

modernization incentives. This issue may be relevant as the experience of some countries has shown that some industrialists took advantage of modernization incentives effecting capital flight, through imports of old, over-invoiced equipment.

Finally, modernization of the textile industry's capital stock and improvements of it's market effectiveness will not leed to the desired results without due consideration of the role of labour in the programme. In several developing countries the labour force works at wage costs which are considered not to properly reflect the countries' relative factor endowments and which therefore are higher than in competing countries, partly due to the prevailing exchange rate, partly due to structural characteristics of the labour market and existing labour legislation. In several countries, policies of the labour unions and their strong position to enforce create obstacles to desirable efficiency increases. The negative impact of this on these countries' international competitiveness reinforces cost disadvantages deriving from the operation of outdated machinery. An essential requirement for the success of a restructuring programme is therefore to increase the flexibility of the labour market.

An effective restructuring programme will not only raise the industry's productivity, but also affect the composition of output. These changes cannot be expected to be accomplished always in the same enterprises. Some reallocation of labour between enterprises might be necessary, requiring a flexible labour legislation. This does not imply that acquired rights of the labour force should be simply eliminated. Instead, one would need to look for solutions which give due consideration to the interests of all parties concerned and to the requirements of and prospects offered by the restructuring programme itself. One approach to be considered in this context would be to negotiate a specific collective agreement which would pertain only to those enterprises which participate in the restructuring programme. This agreement would couple more flexibility for enterpreneurs to reallocate or (temporarily) reduce the labour force with wage rates (or other forms of compensation) which would be higher than in enterprises outside this agreement and the restructuring programme. Higher wages would be justified by increased labour productivity as result of modernization efforts, but should of course not eliminate the necessary effect of productivity increases on the profitability and thus international competitiveness of enterprises. To be effective, such a specific collective agreement would need to include all major trade unions established in a country's textile industry.

The provision of financial resources to selected enterprises in order to promote technological modernization will not lead to the desired results without the creation of a corresponding institutional framework. In order to ensure the smooth functioning of the programme it is essential that all parties concerned should be consulted concerning its design and should co-operate in its implementation. Several countries, therefore, have established a permanent, tri-partite body, involving the Government, industry and labour, to discuss the key elements and instruments of a restructuring programme, to monitor the restructuring process and to serve as a forum for settling disputes between different actors.

This tri-partite body may be closely attached to or form part of an institution to be created which would be in charge of actually implementing the programme. This institution could, among others:

- provide financial support to the modernization efforts of small and medium-sized companies;

- support the horizontal amalgamation of companies in order to create more efficient units;

- finance collective activities undertaken by the industry.

The latter type of programmes would include the cost for establishing and operating specific institutions, such as fashion centres, centres for technical studies, textile schools and quality control centres.

(d) Textile and garment industry - development of institutional infrastructure and industrial services[1/]

1. SUPPORT FOR PROCESS AND PRODUCT DEVELOPMENT

Emphasis on production efficiency is a necessary and vital part of any development, revitalization or restructuring programme. At the same time, however, new and increasing attention is being focused on gaining market effectiveness.

One important area in which R and D efforts in many countries are given emphasis is that of utilization of various natural fibres, such as e.g. silk and ramie. Closer co-operation between the Asian developing countries (and even with other countries, e.g. in Latin America regarding ramie utilization). An important basic consideration for the countries pursuing such efforts is the building up, if possible, of a distinct 'product image'.

Certain inter-country co-operation in the area of textiles testing might be of direct interest, e.g. for testing of coloured yarns. Testing for the 'Wool mark' certificate is another example of inter-country co-operation.

In many countries, Governments and industries, mostly in joint undertakings, are seeking effective ways to increase the capabilities of their industries to be responsive to international market trends and demand shifts. This is being accomplished primarily through the increased use of market intelligence, a concentration on productive flexibility, fashion and design and quality control, coupled with increased efforts to develop international market linkages.

In the field of fashion and design, technological progress (CAD) enables developing countries to quickly respond to changing trends in their main export markets. Yet, given the size structure of the industry in many developing countries and high investment costs of introducing these technologies, many individual companies are not in a position to benefit from these technological advances. The establishment of design centers is therefore an option to improve the design strctures of a country's industry on a wider basis. In this connexion a lack of skilled designers is constituting a bottleneck in developing countries. Support to the contracting of international designers or to the fielding of national designers for training abroad has been successfully applied by several countries to overcome this constraint. In the framework of a textile industry restructuring programme a national design and fashion centre may be entrusted with advising individual companies' on the incorporation of design and fashion improvements into their restructuring plans.

The financing of such institutions could come from various sources and should be tied to some extent to the benefits. Thus, activities which would benefit specific enterprises (such as quality control centres) could be

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1/ Based on a note prepared by the Regional and Country Studies Branch, UNIDO, for the seminar at Seoul.

principally financed by their customers, through charging for their services. However, public financial support might be required in the initial phases, and in the long term, the demand for the services of such institutions should be promoted through appropriate policy action, such as the requirement of obtaining quality certifications issued by such institutes. In addition, joint activities could be partly financed through levies on imports and/or domestic production, as is currently being done in several European countries.

2. MARKETING

Marketing is another priority area for joint industry-government activities. Until now, many developing countries are pursuing a passive marketing strategy. Close contacts to trading houses in Europe, Japan, and the United States channel information to developing countries on quality standards, product variety, design and fashion. Large trading houses also provide access to their import markets and reduce the difficulties and costs associated with establishing market outlets and distribution chains. Arrangements between producers of intermediate products in industrialized countries and textile mills and clothing industries in developing countries provide additional channels for communicating information on market trends, fibre developments, and associated textile technology requirements. Licensing and management contracts provide additional sources for gaining experience in the manufacture of products acceptable in international markets in the selection of appropriate equipment and the training of personnel.

Yet, the development of such international linkages will not automatically spill over into the development of indigenous market intelligence capabilities in developing countries. It leaves developing countries as "price, quantity and design takers". Particularly for the relatively advanced textile and clothing industries of ASEAN countries it will become important in the future to play a more active role in this field. Regional co-operation may be a particularly promising road towards the strengthening of own marketing capabilities, e.g. through joint exhibitions at the regional level.

3. TRAINING FACILITIES

Technical training is in general an expensive activity in the textile field. It needs complete laboratries and pilot plants which require not only a considerable investment but also involve high running costs. This notwithstanding, the establishment and expansion of textile-clothing related training facilities is a necessary complement, and possibly even precondition to programmes aiming at increasing the industry's efficiency. In fact, a lack of skilled textile technicians prevents in many countries the achievement of minimum efficiency standards which could be obtained with given equipment.

As serious as this quantitative lack of trained specialists is for developing countries, the rapid pace of technological innovation has added a new qualitative diamension to the problem. Existing curricula do not any more fully correspond to the needs of industry. A stocktaking of existing skill profiles in the textile and clothing industry, a comparison with required profiles resulting from a modernization programme, and the adjustment of training programmes in size and content will need to form an integral part of national policy programmes to restructre the textile and clothing industries.

Accumulation of technical know-how in the textile industry[1/]

The Korean synthetic textiles industry dates back to 1957 when Korea Nylon Company (Presently Kolon) first began texturizing nylon filaments. Soon after that, in 1959, Mijin Chemical Company began production of Vinylong polyvinylalcohol fibre with a very small capacity of 2 T/D in Pusan. However, modern textiles production as we know it today began with the commissioning of Korea Nylon's nylon filament plant with 2.5 T/D and a similar plant by Hanil Nylon (later bought by Tongyang Nylon) with 1.3 T/D capacity in 1963 and 1964 respectively.

Soon after that, in 1966, Hunghan Chemical Fibres (presently Wonjin Rayon) began producing 15 T/D of viscose rayon in a northern suburb of Seoul, and Hanil Synthetic Textiles completed 7.5 T/D of acrylic fibre capacity in Masan. In that same year Tongyang Synthetic Textiles (presently Taekwang) also started 6 T/D of acrylic fibre production using the American Cyanamid process.

1. ORIGINS AND GROWTH OF POLYESTER PRODUCTION

The so-called miracle fibre polyester first appeared in Korea with the construction of 6 T/D Taehan Synthetic textiles' Plant in Pusan in 1968. The plant produced polyester staple fibre (a cotton-like, short-crimped and cut fibre used most popula ly in blends with cotton) with Chemtex-supplied equipment without too much assistance from Chemtex in running the plant. In 1969, another polyester plant with 7 T/D capacity was built by Sunkyung in Suwon near Seoul with Teijin know-how and financing. In December of that year, Samyang completed 1 T/D polyester filament and 12 T/D polyester staple fibre plants. Similarly, Korea Nylon established the Korea Polyester Company in March 1969, and began producing 20 T/D of polyester filament with Chemtex and Toray technology. Thus, the Republic of Korea entered the age of polyester.

Korean textile industry therefore made the conversion from wool and cotton to synthetics in the 1960's. Another entry into the field was the polyester/rayon blend initiated by Cheil Wool, who began producing fabrics based on that blend in 1969 at its Kyungsan plant with 10,000 spindles of spinning facility. Soon after that Cheil Synthetic Textiles Company was established with the addition of 20,000 spindles in 1970. This plant's polyester requirement was first supplied by Samyang, but soon after, in 1974, Cheil also began producing 50 T/D of polyester fibres at Gumi.

Over time, expansion of each company has led to the existence of textiles plants with the production capabilities shown in Table 3.3 Table 3.4 shows the Korean production capacity for other synthetic fibres. It is quite clear that the three major synthetic textiles have shown remarkable growth during the last ten years.

1/ Paper presented by Dr. Young Ok Ahn, President, Korea Technology Advancement Corporation, at the seminar at Seoul.

Table 3.3. Polyester production capacity in the Republic of Korea
(Name plate[a] tons/day)

		1975	1980	1982	1985
Polyester staple fibre	Cheil	50.0	70.0	70.0	140
	Sunkyung	100.0	100.0	100.0	171
	Samyang	42.0	92.0	92.0	170
	Daehan	8.0	28.0	35.0	57
	Kohap	-	-	12.0	16
	Total	200.0	290.0	309.0	554
Polyester filament	Cheil	-	-	24.0	33
	Sunkyung	52.5	66.5	66.5	120
	Samyang	1.0	31.0	49.0	69
	Daehan	4.0	30.0	38.6	78
	Kohap	-	-	30.0	30
	Tongyang	30.0	71.0	77.5	133
	Kolon	32.0	78.0	98.0	134
	Jeil	-	2.0	2.0	6
	Samheung	0.5	4.5	-	-
	Daesung	1.0	1.0	1.0	-
	Total	121.0	284.0	386.6	646

[a] To convert name plate capacity to actual figures: multiply by 1.7 for staple fibre and 1.5 for filament.

2. COMPETITIVENESS OF THE SYNTHETIC TEXTILES INDUSTRY

Before discussing a specific case history of technology accumulation in the synthetic textiles industry, it may be beneficial to obtain an overview of the competitiveness can be measured by comparing the "local" supply price to the import price. "Local" price is defined as the price which fibres and filament producers charge the down stream converters who eventually export the converted goods. The converter therefore, under government approval, has the option of either using domestic or imported raw material. Recent trends are shown in Table 3.5.

An alternate yardstick of textiles' competitiveness is to compare the export prices of finished goods. These are shown in Table 3.6.

Of course, if we extend our analysis further upstream, we can compare the price structure of the raw material which polyester, nylon and acrylic fibres producers purchase. It can be seen (Table 3.7) that Korean manufacturers use higher priced feed stock than similar manufacturers in the American continent.

Table 3.4. Synthetic textiles production capacity
(Name plate[a] tons/day)

		1971	1974	1975	1976	1977	1978	1979	1980	1986	1987
Acrylic	S	73.5	158.5	223.5	223.5	249.5	275.5	320.5	345.5	464	514
Nylon	F	68.2	116.1	135.1	153.1	176.1	208.5	253.5	253.5	413	442
	S	-	4.0	4.1	4.0	9.1	9.0	9.0	9.0	9	9
Polyester	F	45.0	91.0	121.0	151.0	153.0	231.0	265.0	299.0	815	931
	S	20.0	200.0	200.0	230.0	230.0	230.0	230.0	290.0	732	732
P.P	F	2.5	5.0	5.0	5.0	3.0	3.0	3.0	9.0	3	3
	S	19.5	23.0	23.0	23.0	23.0	23.0	23.0	23.0	7	7
P.V.A.	S	7.0	7.0	7.0	7.0	7.0	-	-	-	-	-
Rayon	F	15.0	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32	32
	S	-	-	27.0	27.0	27.0	27.0	27.0	77.0	77	77
Acetate		7.5	7.5	15.5	15.5	15.5	15.5	15.5	15.5	23	23
Total		258.2	644.3	793.3	871.3	925.3	1,054.7	1,178.7	1,353.7	2,575	2,769

[a] To convert name plate capacity to actual figures: multiply by 1.7 for staple fibre and 1.5 for filament.

Table 3.5. Price trends of major synthetic textiles
(Unit: US $/lb, %)

		80.1	80.12	81.9	81.12	82.5
Nylon F 70d	Local price	1.27 (85)	1.45 (103)	1.45 (101)	1.45 (100)	1.33 (111)
	Import price	1.50 (100)	1.41 (100)	1.43 (100)	1.45 (100)	1.20 (100)
Polyester F 75d	Local price	1.15 (107)	1.15 (106)	1.25 (98)	1.25 (99)	1.17 (98)
	Import price	1.07 (100)	1.09 (100)	1.27 (100)	1.26 (100)	1.20 (100)
Polyester SF 1.5ϕ	Local price	0.72 (104)	0.72	0.75	0.75	0.68 (111)
	Import price	0.69 (100)				0.611 (100)
Acrylic SF 3d	Local price	0.75 (103)	0.79	0.815 (101)	0.815 (101)	0.815 (101)
	Import price	0.73 (100)		0.81 (100)	0.81 (100)	0.81 (100)

Table 3.6. Comparison of export prices of textile goods
(81.1 - 9 AVE)
(Unit: US $)

	Nylon fabric (SM)	Polyester fabric (SM)	Polyester knit fabric (KG)	Synthetic sweater (Dozen)
Republic of Korea	0.646 (100)	0.96 (100)	10.08 (100)	64.94 (100)
Japan[a/]	0.90 (139)	1.43 (149)	11.47 (114)	37.42 (58)
Taiwan Province of China	0.733 (113)	- (-)	4.998 (50)	71.12 (110)
Hong Kong	- (-)	1.113 (116)	- (-)	96.67 (149)
Great Britain	9.07 (1,404)	4.53 (472)	12.39 (363)	139.15 (374)
France	2.04 (316)	4.57 (476)	36.54 (123)	243.16 (214)
Germany	3.058 (473)	5.382 (561)	15.96 (158)	347.50 (535)
USA	4.58 (709)	2.00 (208)	7.82 (78)	116.65 (180)

Source: Japan trade monthly.

[a/] Japan: Export price (FOB).
Other countries: Import price into Japan (CIF)

Table 3.7. Raw material price trends of synthetic textiles
(Unit: US $/MT, %)

		1979.12	1980.12	1981.12	1982.4
A.N. Monomer	Local price	718 (102.6)	780 (120.0)	823 (109.7)	805 (107.3)
	Import price	700 (100.0)	650 (100.0)	750 (100.0)	750 (100.0)
Caprolactam	Local price	1,299 (76.4)	1,700 (100.0)	1,700 (117.2)	1,500 (114.5)
	Import price	1,700 (100.0)	1,700 (100.0)	1,450 (100.0)	1,310 (100.0)
T.P.A.	Local price	-	733 (109.4)	763 (105.2)	749 (109.3)
	Import price	808	670 (108.0)	725 (100.0)	685 (100.0)
E.G.	Local price		567 (108.0)	587 (124.9)	520 (120.9)
	Import price	670	525 (100.0)	470 (100.0)	430 (100.0)

Source: Korea Chemical Fibres Association.

The cost of energy is also very high in the Republic of Korea and this is shown in Tables 3.8 and 3.9.

To offset these disadvantages somewhat, Korean manufacturers are attempting very hard to minimize the wages of the textiles, workers. This is indicated in Table 3.10.

Another serious problem is the cost of financing new business and its eventual effect on the soundness of the company. For example, the average net worth to total assets ratio for a Korean textiles company is 23.4 per cent while that of Du Pont is 59.4 per cent and Monsanto 50.2 per cent. In conclusion, the competitiveness of the Korean textiles' industry is being challenged both in terms of raw materials cost and energy cost. Survival therefore depends heavily on the ability of the industry to upgrade its productivity and the capability to produce specialty products with higher technology content.

Table 3.8. Comparison of bunker-C fuel prices (1982.2)
(Unit: ¢/l)

	Price	Index
Republic of Korea	29.1	100.0
USA	15.6	53.6
France	18.3	62.9
Japan	24.3	83.5

Source: Korean Chemical Fibres Association.

Table 3.9. Comparison of energy cost (1981)
(Unit: Won/MMBTU)

	Republic of Korea	Japan	Taiwan Province of China	Germany	USA	Canada
Industry energy cost	4,402	4,274	3,891	3,445	2,392	1,308
Index (Korea=100)	100.0	97.1	88.4	78.3	54.3	29.7

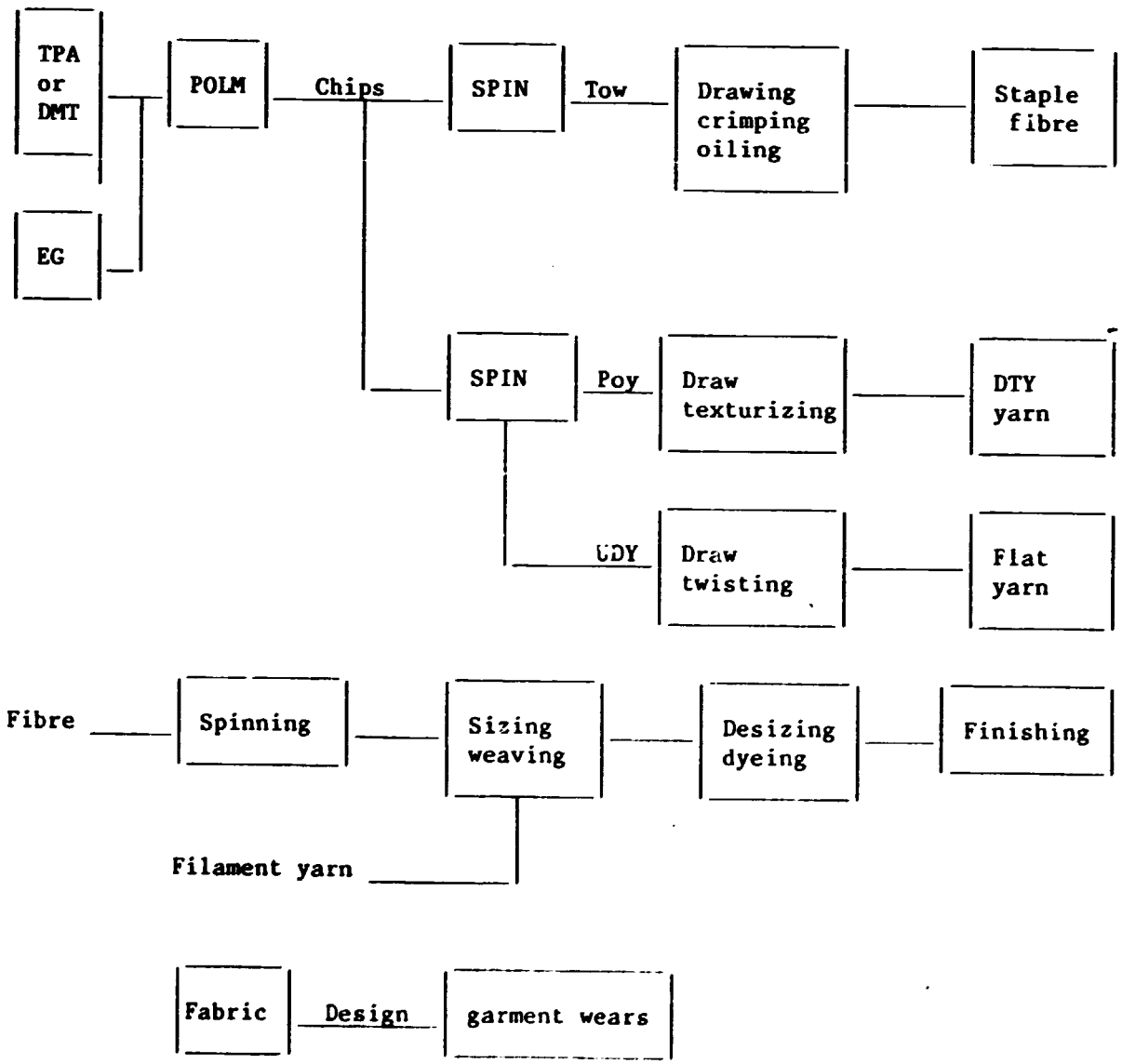
Source: Japan Chemical Fibres Association.

Table 3.10. Wage cost comparison of chemical fibres industry
(Korea = 100)

	Labour productivity index	Wage index	Wage cost index
Republic of Korea	100.0	100.0	100.0
Japan	106.1	557.7	525.6
Taiwan Province of China	90.9	161.5	177.7
USA	127.3	816.7	641.6

3. ACCUMULATION OF TECHNOLOGY

There are various approaches in defining what one means by technology. One such approach is to follow the sequences of operation one must follow to obtain the final product. For polyester, for example, one can construct following sequences.

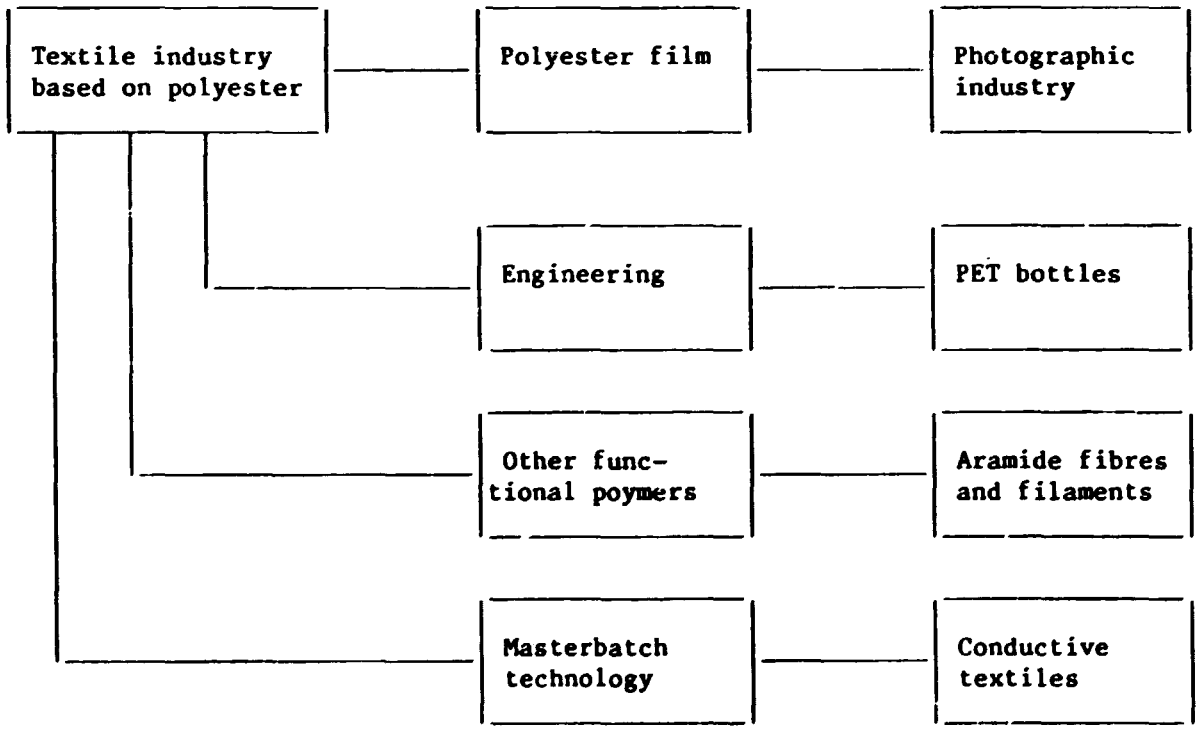


A tremendous amount of technology is therefore required to obtain the final product. In each aspect of the processes shown above, constant efforts are required to keep up with the ever increasing amount of the improved technology. These improvements are obtained through in-house R and D, technology licensing or by way of machinery producers who are willing to supply the know-how that come with the capital equipment purchase. Over the years, Korean industry, the major corporations in particular, accumulated considerable experience in all aspects of technology acquisition.

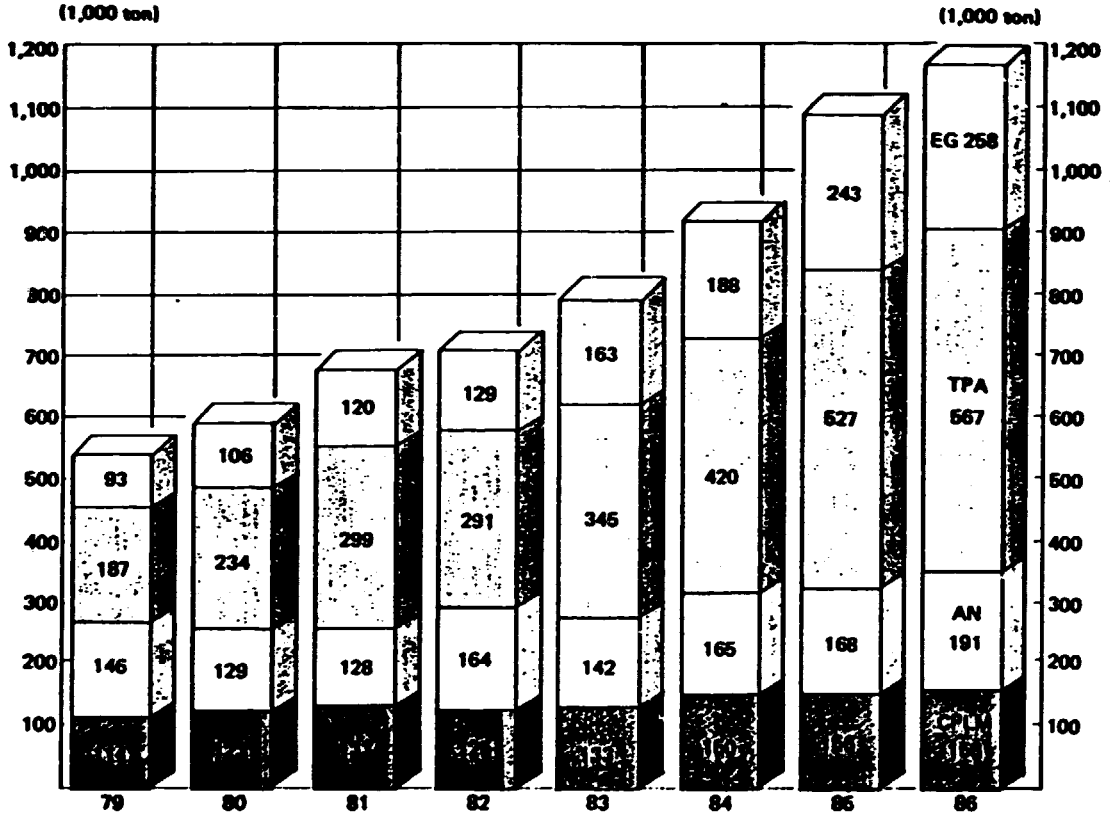
The final goal of chemical synthetic fibres, however, is to imitate nature as best as possible. Therefore, considerable amounts of efforts are exerted to obtain very thin silk-like fabric or wool-like fabric with all the functionality of the natural wool. Once these are obtained, more energy is poured into the design and colour which again is a vast field by itself.

At this point, it should be mentioned that polyester chemistry is so versatile that business can be expanded into non-textile industry as indicated below.

One or two polyester companies have already invested in all the above on a commercial scale. In the years to come, the unending struggle to accumulate new knowledge to expand into new business ventures will continue.



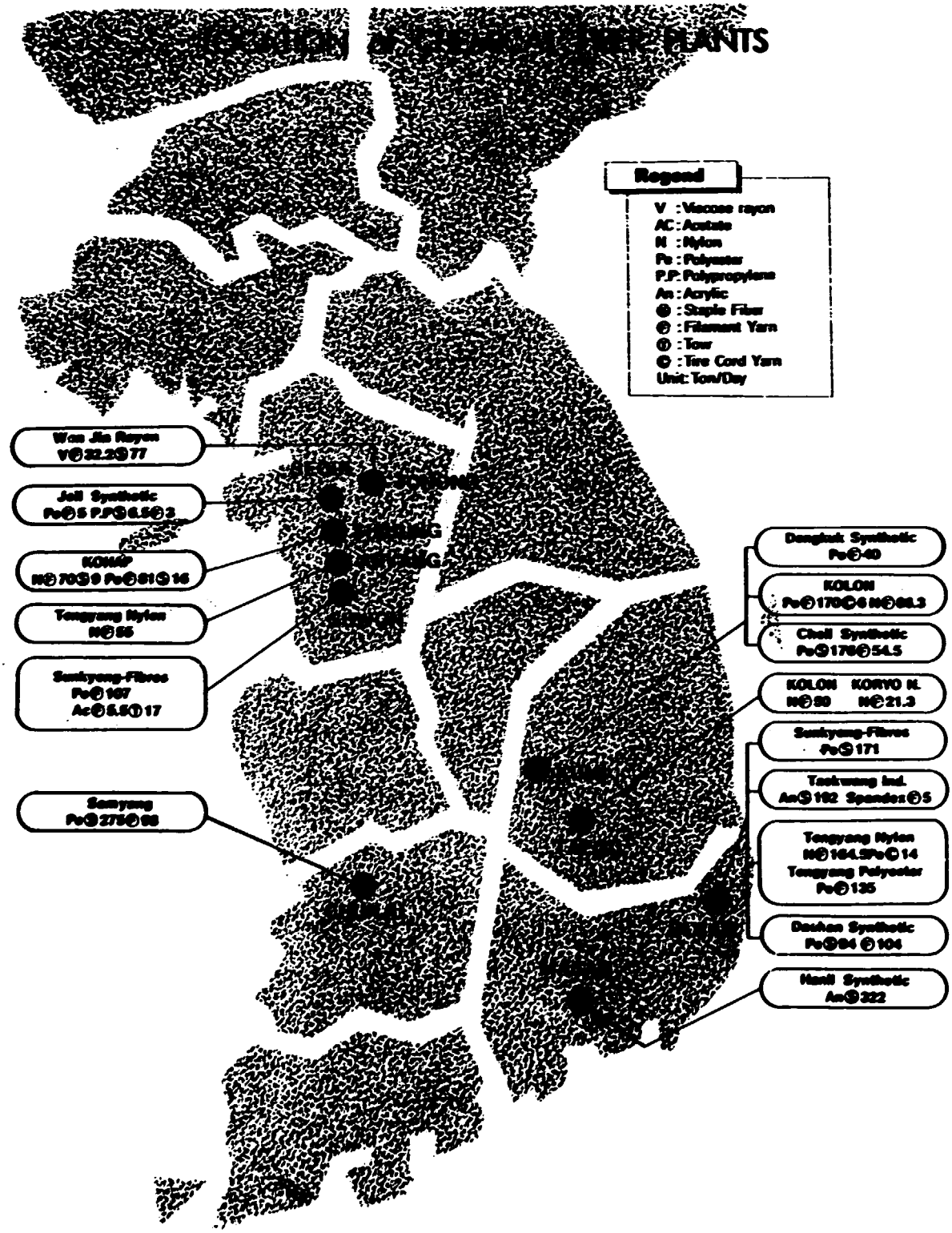
Demand structure of synthetic fibre raw materials



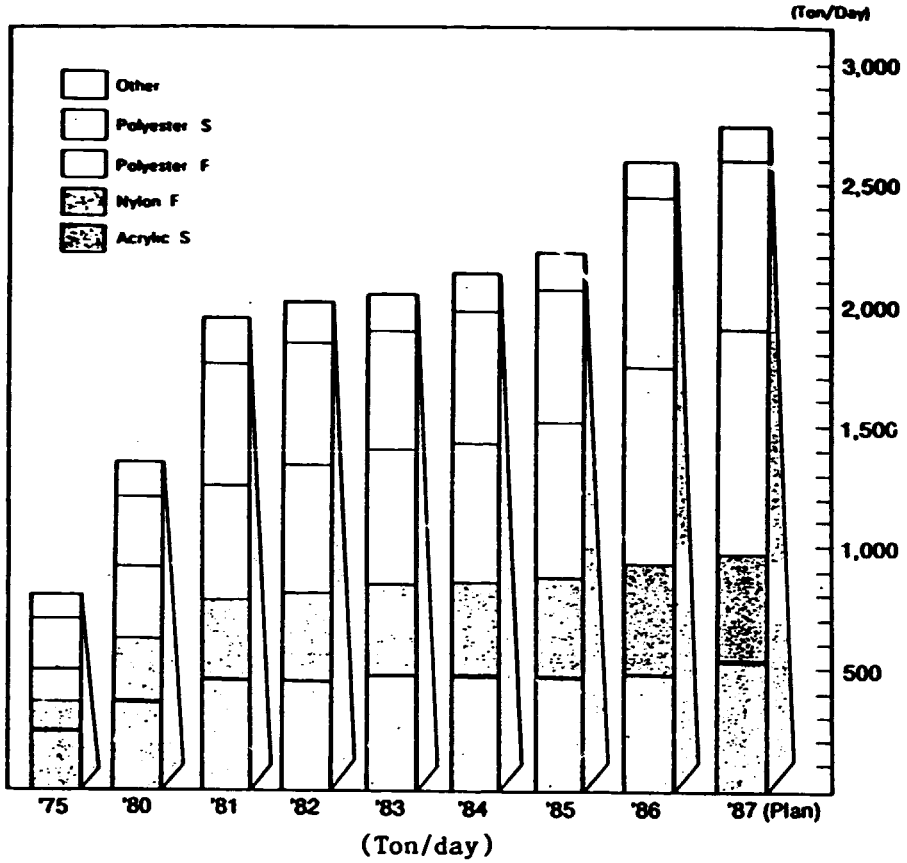
(in 1,000 tons)

	Caprolactam		AN		TPA		EG		Total	
Year	Demand	%	Demand	%	Demand	%	Demand	%	Demand	%
1979	114	21	146	27	187	35	93	17	540	100
1980	123	21	129	22	234	39	106	18	592	100
1981	133	19	128	19	299	44	120	18	680	100
1982	125	18	164	23	291	41	129	18	709	100
1983	133	17	142	18	345	44	163	21	783	100
1984	150	16	165	18	420	46	188	20	923	100
1985	156	14	168	15	527	48	243	23	1,094	100
1986	158	14	191	16	567	48	258	22	1,174	100

Note: Demand is based on local consumption.


Legend
V : Viscose rayon
AC : Acetate
N : Nylon
Pe : Polyester
P.P: Polypropylene
An : Acrylic
S : Staple Fiber
F : Filament Yarn
T : Tow
C : Tire Cord Yarn
Unit: Ton/Day
Won Jin Rayon
V S 32.2 S 77
Jeil Synthetic
Pe S 5 P.P S 6.5 C 3
KOLON
N S 70 S 9 Pe S 61 S 16
Tongyang Nylon
N S 55
Sunkyong-Fibres
Pe S 107
Ac S 6.5 T 17
Samyang
Pe S 275 S 55
Dongbuk Synthetic
Pe S 40
KOLON
Pe S 170 C 6 N S 65.3
Cheil Synthetic
Pe S 178 F 54.5
KOLON KORYO H.
N S 50 N S 21.3
Sunkyong-Fibres
Pe S 171
Taekwang Ind.
An S 102 Spandex F 5
Tongyang Nylon
N S 164.5 Pe S 14
Tongyang Polyester
Pe S 135
Daehan Synthetic
Pe S 84 F 104
Hanil Synthetic
An S 222

Producing capacity of chemical fibres

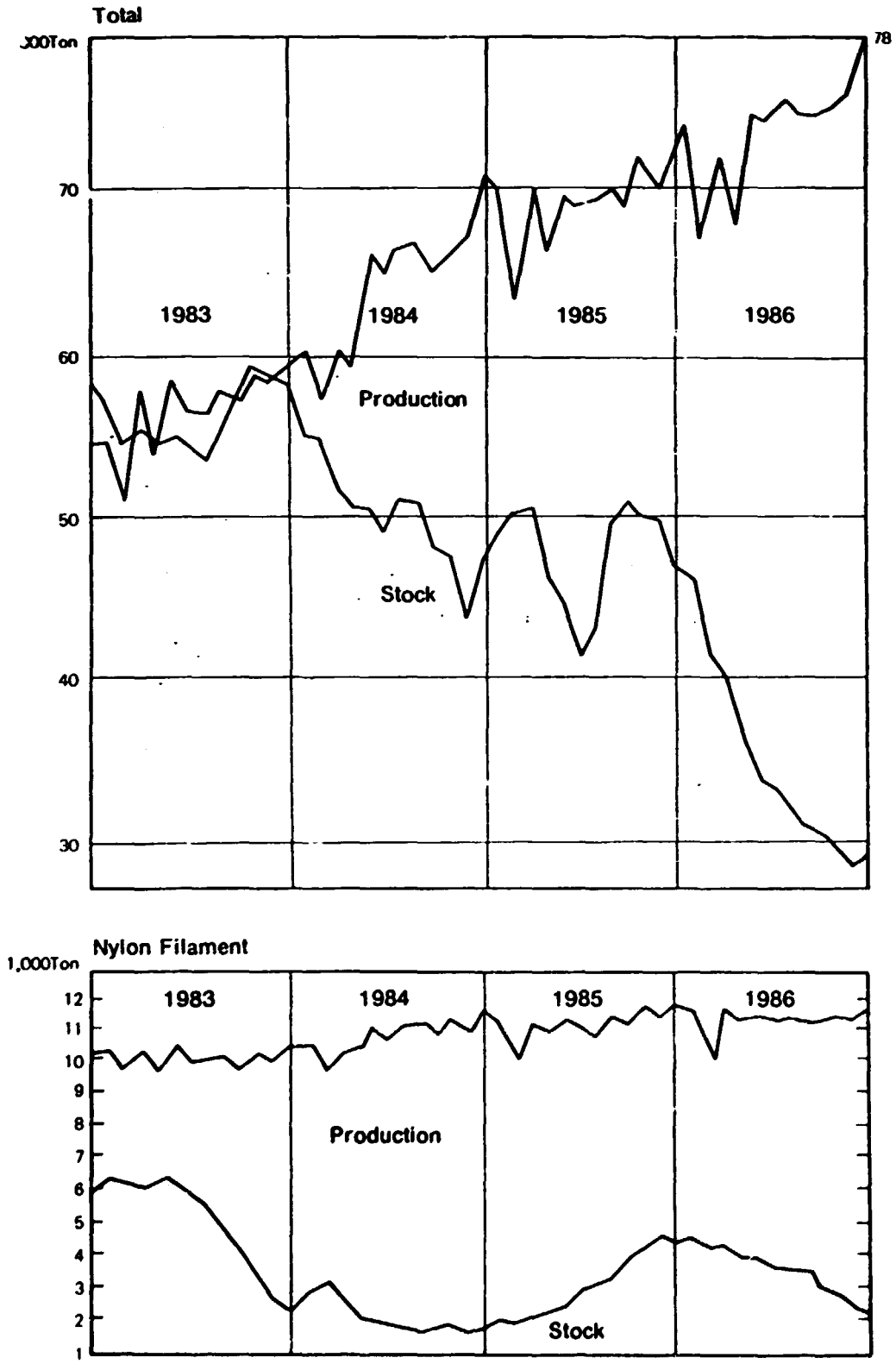


		1975	1980	1981[a/]	1982	1983	1984	1985	1986[a/]	1987 (Plan)
Acrylic	S	223.5	345.5	439.0	439.0	459.0	459.0	459.0	464.0	514.0
Nylon	F	142.8	255.3	347.0	365.0	375.0	385.0	409.5	413.8	441.5
	S	4.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Polyester	F	121.0	299.0	474.5	538.6	560.1	578.6	642.6	814.5	931.2
	S	200.0	290.0	503.0	503.0	494.0	554.0	554.0	732.0	732.0
P.P.	F	5.0	9.0	9.0	9.0	3.0	3.0	3.0	3.0	3.0
	S	23.0	23.0	12.8	12.8	6.5	6.5	6.5	6.5	6.5
P.V.A.	S	7.0	-	-	-	-	-	-	-	-
Rayon	F	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2
	S	27.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0
Acetate		15.5	15.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total		801.0	1,355.5	1,926.0	2,008.1	2,038.3	2,127.6	2,215.3	2,574.5	2,768.9

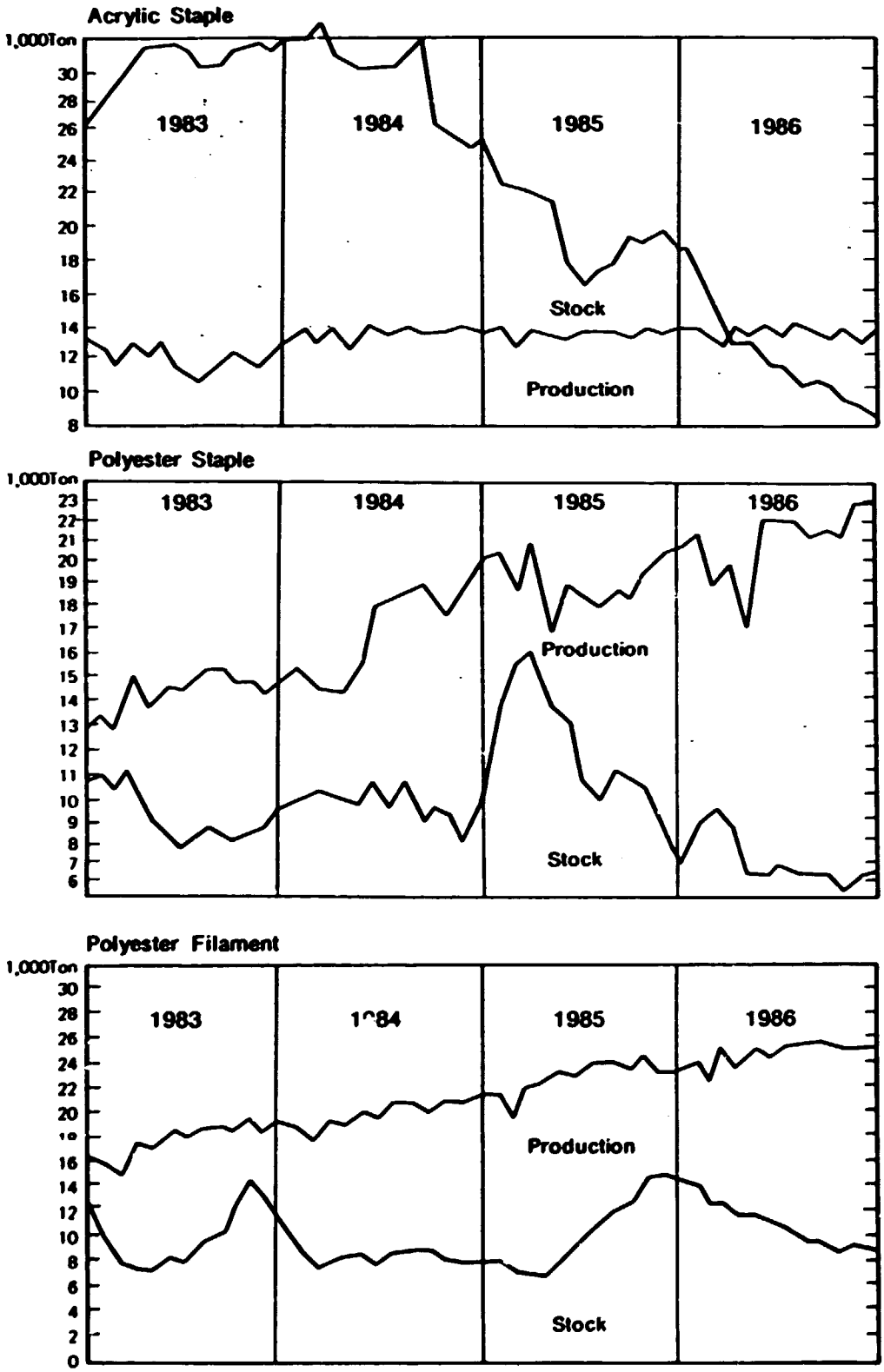
Remark: KCFA member companies only.

[a/] Production capacity was actualized. S: staple fibre; F: Filament yarn.

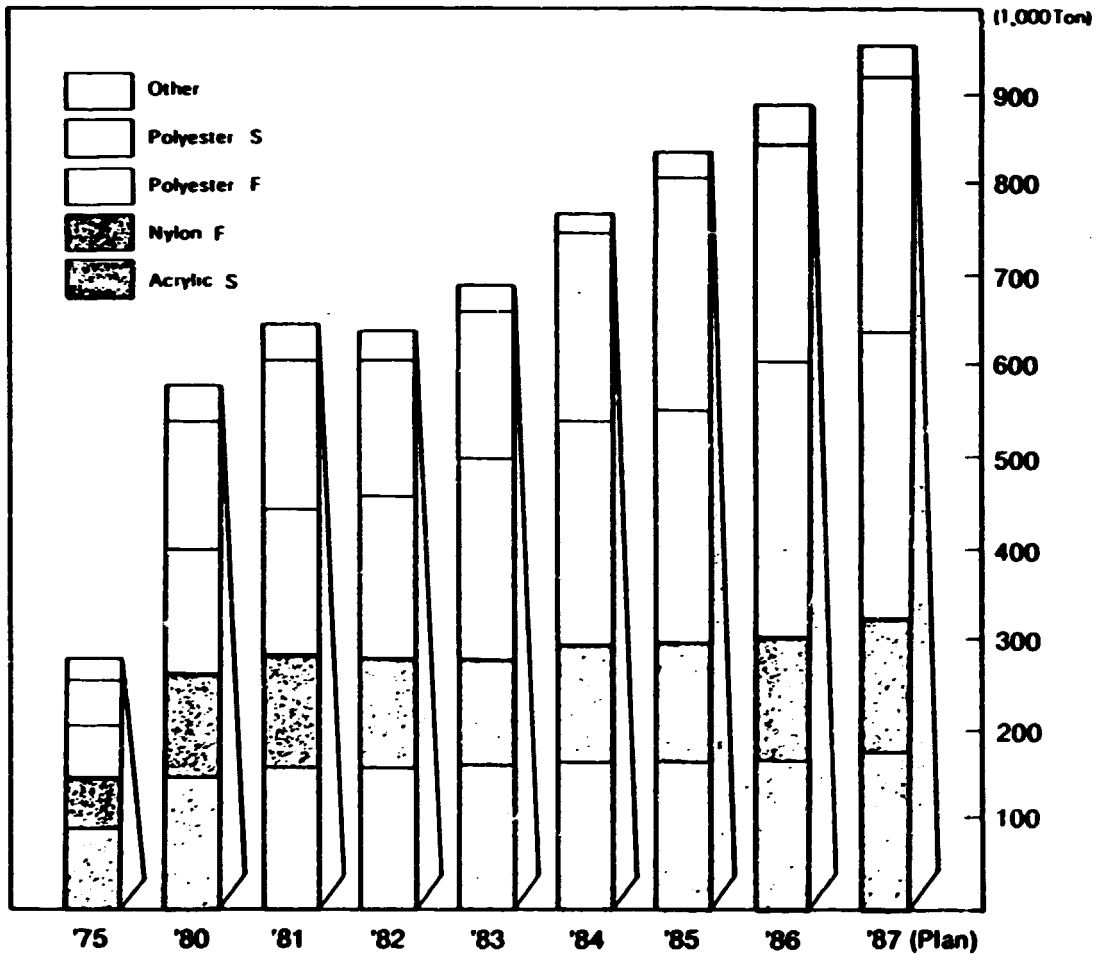
Trends of chemical fibre production and stock



Trends of chemical fibre production and stock



Production of chemical fibres



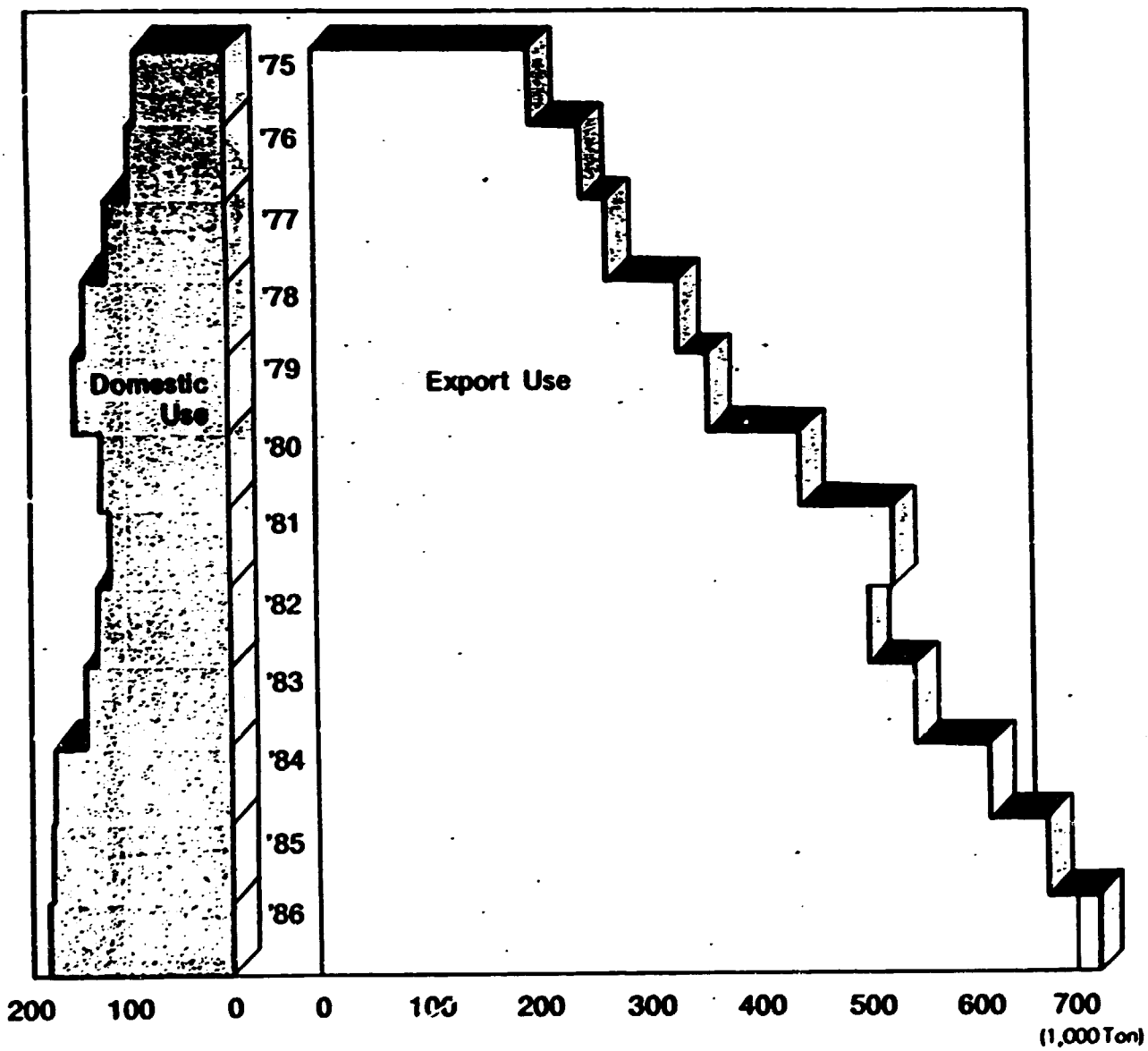
Production of chemical fibres

(Ton)

		1975	1980	1981	1982	1983	1984	1985	1986	1987 (Plan)
Acrylic	S	91,966	139,436	153,847	154,867	152,304	162,660	163,804	164,944	175,500
Nylon	F[a]	57,641	118,313	121,873	116,633	120,465	128,935	133,784	136,027	146,200
	S	1,047	1,584	2,387	2857	3,463	4,348	4,659	3,467	4,900
Polyester	F	62,325	136,901	161,684	184,598	215,802	240,436	274,563	299,705	314,800
	S	49,371	140,179	170,209	154,115	171,784	210,658	234,429	257,484	292,400
P.P.	F	860	781	521	577	479	952	431	-	-
	S	4,332	3,116	2,602	1,523	75	-	-	-	-
Rayon	F	7,992	10,435	10,751	7,773	10,749	10,569	11,619	11,771	11,500
	S	-	15,003	13,992	5,821	-[b]	-	-	-	-
Acetate		5,661	7,466	7,910	8,607	8,164	8,088	8,069	7,064	8,700
Total		281,559	573,214	645,886	636,831	683,285	766,646	831,358	880,462	954,000

[a] Nylon F+monofil.
[b] Stopped operation.
S: staple fibre; F: Filament yarn.

Producers' shipments for domestic vs. export use



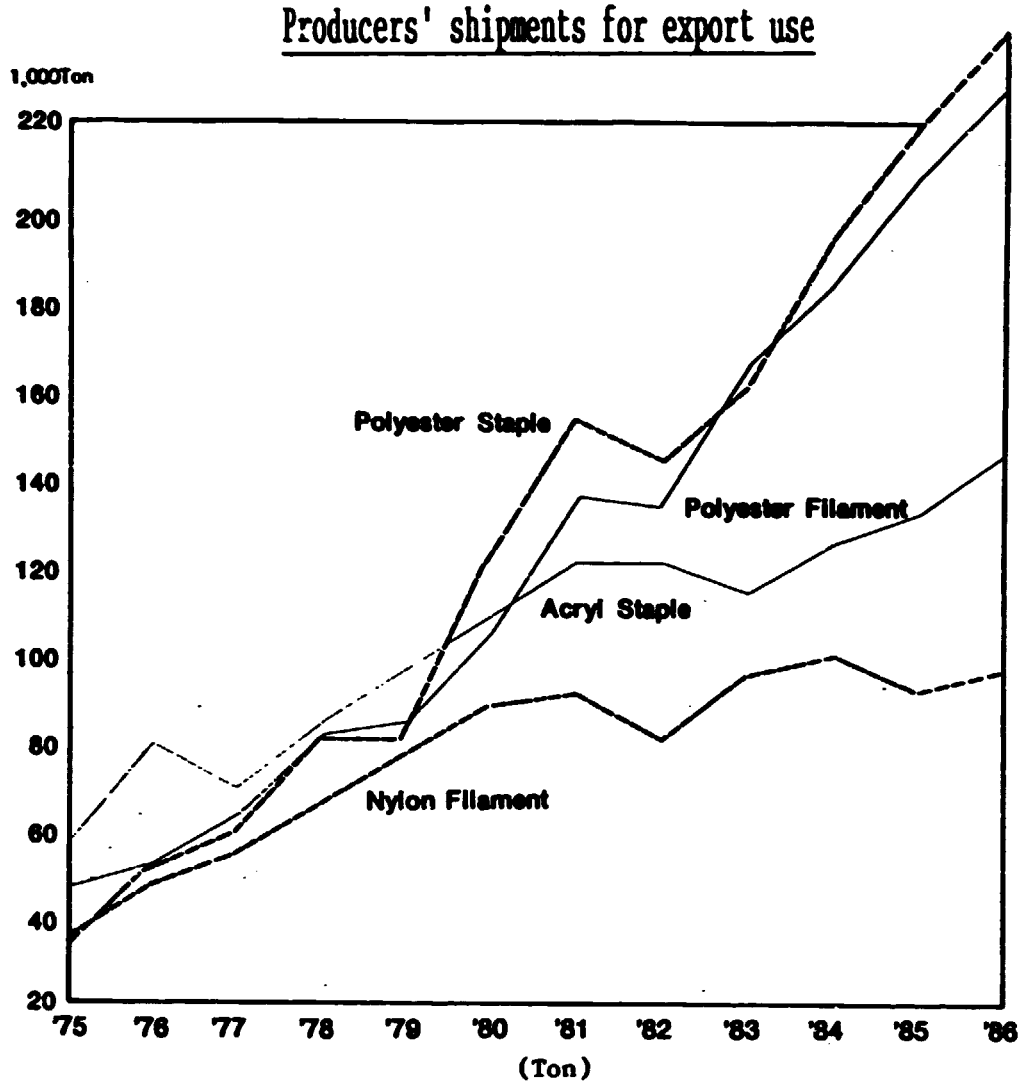
Producers' shipments for domestic vs. export use

(Ton)

		1975	1980	1981	1982	1983	1984	1985	1986
For domestic use									
Acrylic	S	28,553	23,215	27,303	27,666	31,106	43,766	38,126	29,798
Nylon	F[a/]	20,132	28,737	31,664	33,390	29,539	31,610	40,407	43,309
Polyester	F	13,939	34,129	26,289	39,147	49,721	57,404	58,917	76,776
Sub-total		86,231	120,971	112,576	127,538	137,631	166,038	167,150	180,348
For export use									
Acrylic	S	61,204	111,410	122,402	122,957	116,469	125,227	130,971	145,013
Nylon	F[a/]	36,980	87,905	91,592	80,892	93,390	98,666	90,571	94,619
Polyester	F	47,897	106,517	137,545	134,961	168,472	186,102	209,293	228,582
	S	34,638	123,917	154,537	143,139	159,433	190,661	222,216	241,589
Sub-total		190,210	449,293	526,908	497,334	546,068	610,290	663,436	719,201
Total		276,441	570,264	639,484	624,897	683,699	776,328	830,586	899,549

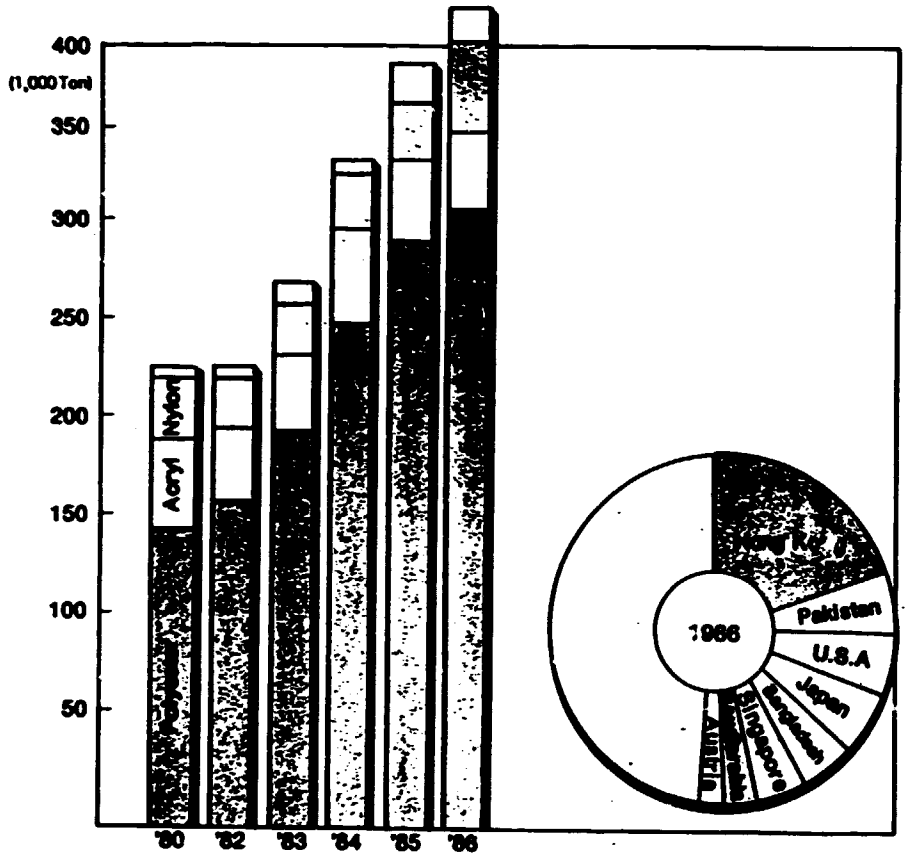
[a/] Excludes monofil.

Producers' shipments for export use



		1975	1980	1981	1982	1983	1984	1985	1986
Acrylic	S	61,204	111,410	122,402	122,957	116,469	125,227	130,971	145,013
Nylon	F	36,980	87,905	91,592	80,892	93,390	98,666	90,571	94,619
	S	408	920	1,633	1,968	2,469	3,517	2,901	2,974
Polyester	F	47,897	106,517	137,545	134,961	168,472	186,102	209,293	228,582
	S	34,638	123,917	154,537	143,139	159,433	190,661	222,216	241,589
P.P.	F	252	398	541	470	352	685	355	3
	S	2,831	1,523	1,578	886	103	-	-	-
Rayon	F	5,529	5,696	4,066	5,092	4,725	5,090	6,800	6,185
	S	-	10,215	12,017	6,248	90	-	-	-
Acetate		205	721	916	605	457	315	287	230
Total		190,210	449,293	526,908	497,334	546,068	610,290	663,436	719,201

Exports of chemical fibre products[a/]



Divivided by kinds of fibres (ton)

Divided by destinations 1986 (ton)

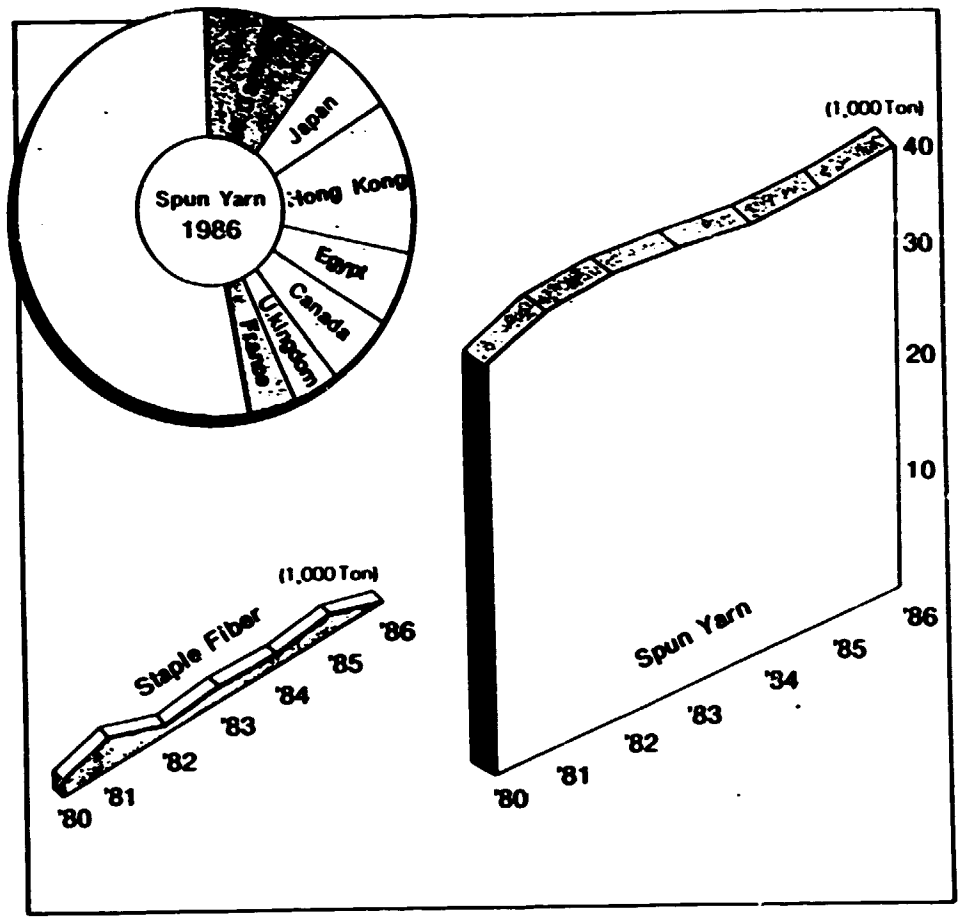
	1983	1984	1985	1986
Acrylic	40,845	40,731	44,260	43,792
Nylon	29,683	30,031	32,088	37,217
Polyester	195,861	249,194	285,118	302,573
Other synthetic	4,988	6,627	7,688	9,435
Synthetic total	271,377	326,583	369,154	393,017
Rayon	8,033	9,061	10,003	10,934
Rayon Acetate total	9,434	10,731	12,883	16,720
Chemical fibre products total[a/]	280,811	337,314	382,037	409,737
Fibre producers shipments for export use	546,068	610,290	663,436	719,201

Country	Volume
Hong Kong	71,195
Pakistan	31,201
USA	24,751
Japan	21,225
Bangladesh	17,621
Singapore	17,450
Saudi Arabia	14,349
Australia	12,936
Canada	10,927
FRG	8,072
Taiwan Province of China	7,782
Egypt	7,176
Thailand	6,865
Kuwait	5,917
Indonesia	5,218

Source: Statistcal Yearbook of Foreign Trade, KCFA.

[a/] Fibre, yarn and fabrics only.

Exports of acrylic products[a/]



(ton)

Acrylic	1983	1984	1985	1986
Staple fibre	1,941	1,903	3,021	48
Spun yarn	38,075	37,009	39,329	41,303
Spun fabric	829	1,819	1,913	2,441
Total	40,845	40,731	44,260	43,792
Fibre producers' shipments for export use	116,469	125,227	130,971	145,013

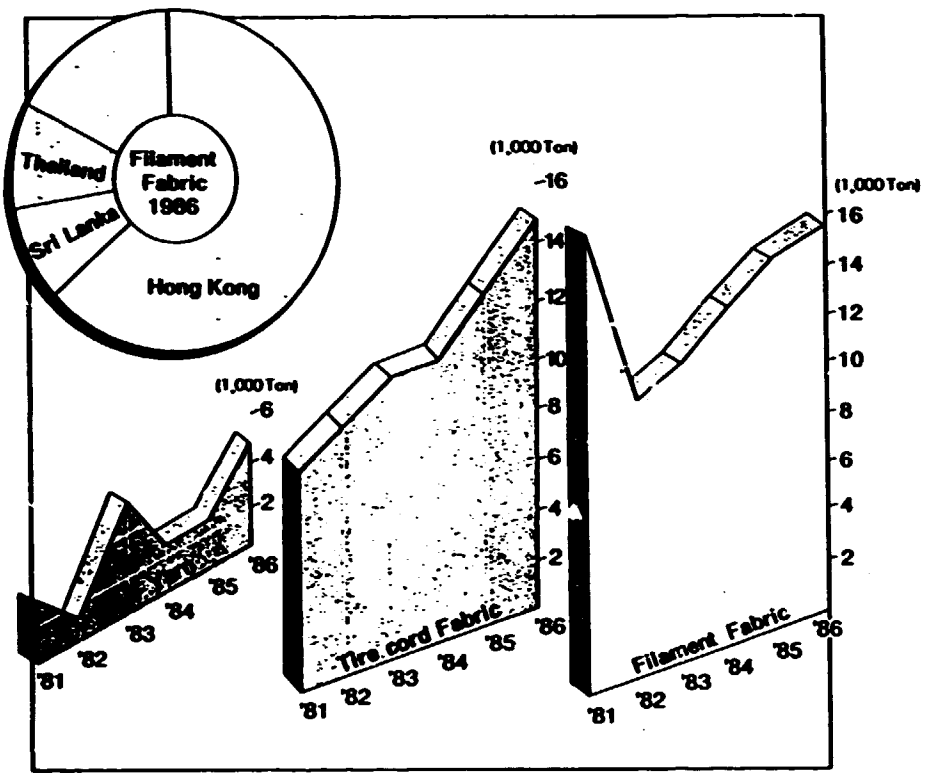
1986 (ton)

Country	Spun yarn
FRG	4,654
Japan	2,460
Hong Kong	5,796
Egypt	2,959
Austria	1,106
Canada	2,413
Bangladesh	1,198
United Kingdom	1,579
France	1,574
Italy	1,053
Belgium	957

Source: Statistcal Yearbook of Foreign Trade, KCFA.

a/ Fibre, yarn and fabrics only.

Exports of nylon products[a/]



(ton)

Nylon	1983	1984	1985	1986
Filament	4,856	2,050	2,359	5,056
Staple fibre	1,079	2,240	1,175	1,70.
Spun yarn	104	4	45	21
Filament fabirc	12,019	14,009	14,866	15,800
Tire fabric	11,523	11,626	13,531	14,536
Spun fabric	102	102	112	98
Total	29,683	30,031	32,088	37,217
Fibre producers' shipments for export use	95,967	102,210	93,514	97,599

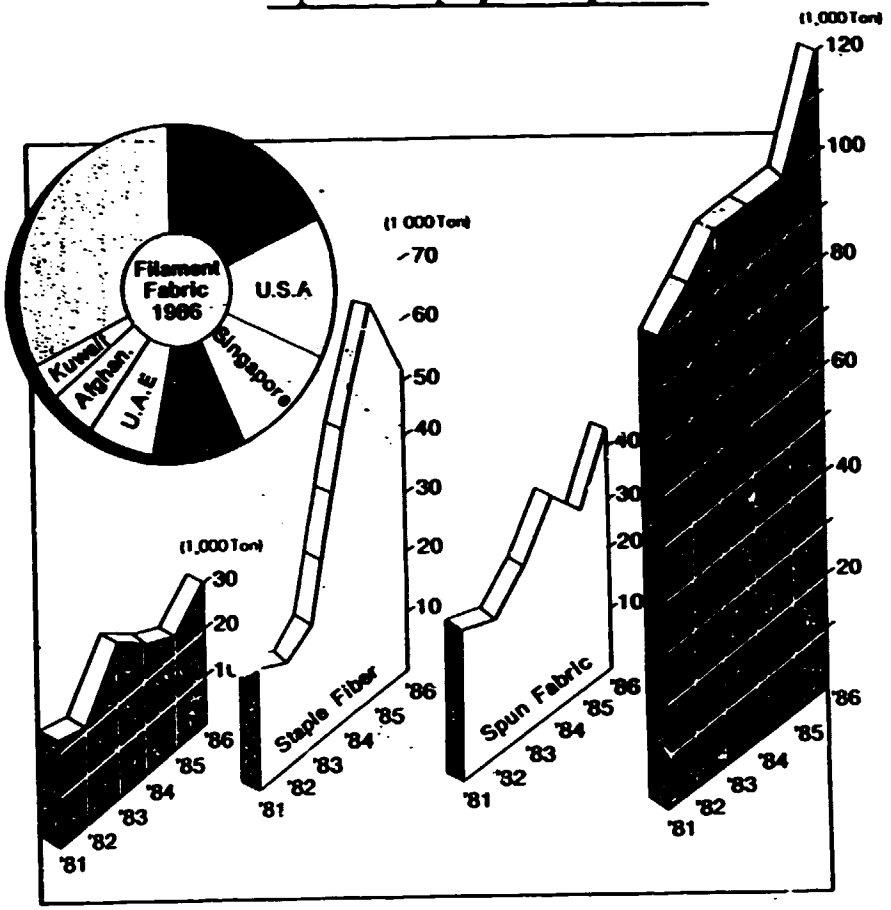
1986 (ton)

Country	Filament fabrics	Tire fabrics
Hong Kong	9,543	3,155
Japan	345	2,168
Thailand	540	2,496
Indonesia	73	903
Sri Lanka	543	218
Philippine	442	437
Taiwan Province of China	77	1,209
Bangladesh	381	93
Chile	410	18
Pakistan	84	466
Sudan	-	1,295

Source: Statistcal Yearbook of Foreign Trade, KCFA.

a/ Fibre, yarn and fabrics only.

Exports of polyester products [a/]



(ton)

Polyestern	1983	1984	1985	1986
Filament	20,801	38,486	55,629	53,154
Staple fibre	16,592	50,660	66,855	54,129
Spun yarn	31,461	25,700	22,606	30,016
Filament fabirc	99,602	97,620	106,792	120,896
Tire fabric	761	677	633	1,274
Spun fabric	26,627	36,051	32,603	43,104
Total	195,861	249,194	285,118	302,573
Fibre producers' shipments for export use	327,905	376,763	431,509	470,171

1986 (ton)

Country	Filament fabric
Hong Kong	20,978
USA	14,076
Singapore	13,815
Saudi Arabia	11,128
U.A.E.	6,486
Afghanistan	6,196
Kuwait	5,303
Japan	5,288
A.R.E.	2,876
Panama	2,762
Malaysia	1,633
United Kingdom	1,495
Kenya	1,219

Source: Statistcal Yearbook of Foreign Trade, KCFA.

[a/] Fibre, yarn and fabrics only.

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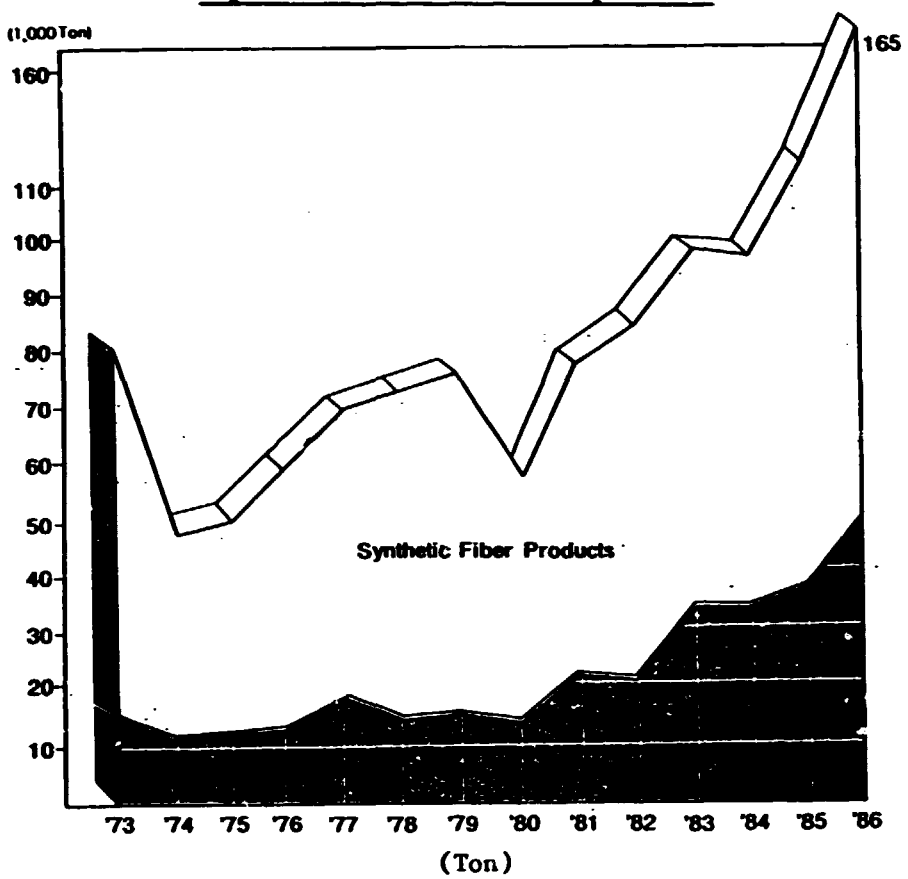
Imports of chemical fibre products a/



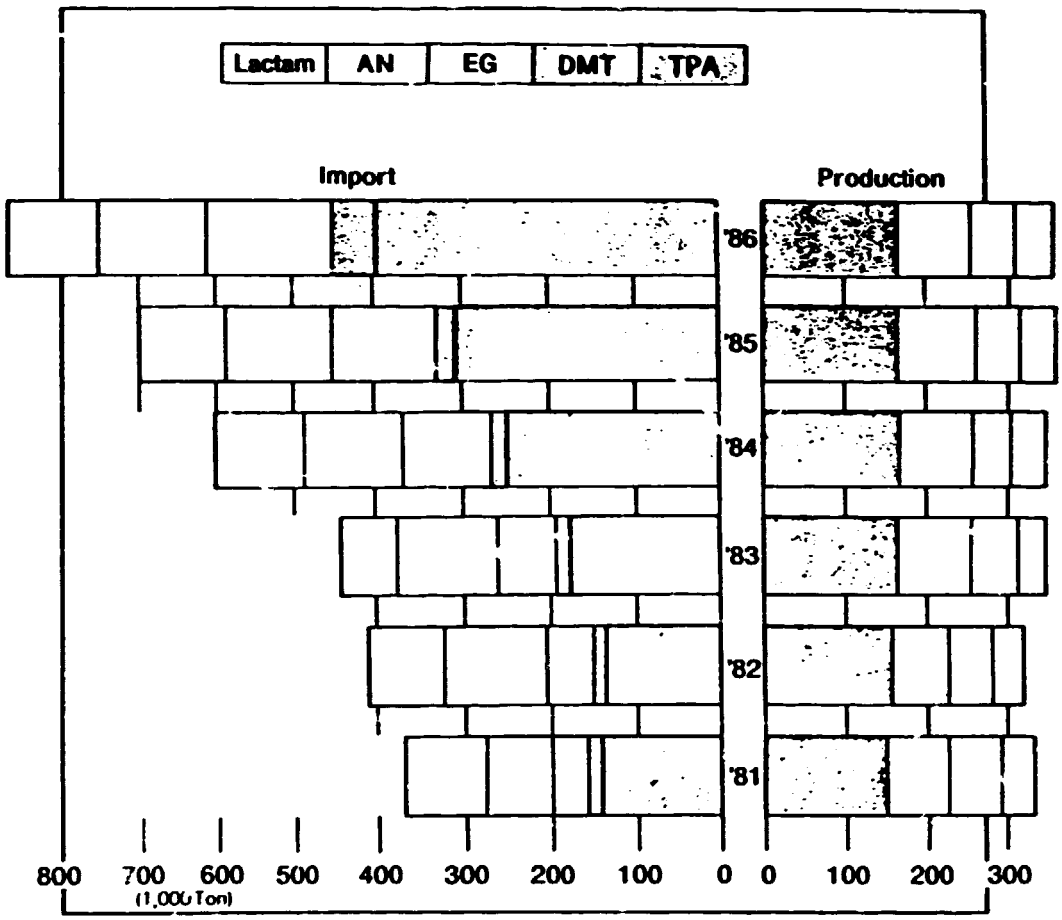
(Ton)

		1975	1980	1982	1983	1984	1985	1986
Acrylic		5,106	6,608	7,801	12,675	17,547	22,217	37,919
	S	3,643	2,724	5,047	7,991	11,585	16,528	26,722
Nylon		12,572	7,813	8,158	6,133	9,953	9,847	10,222
	F	8,879	5,839	6,447	4,240	7,979	6,663	6,670
	S	422	142	319	604	428	636	851
Polyester		16,721	19,248	34,342	37,065	24,768	34,346	56,315
	F	4,508	3,554	18,645	11,653	3,247	3,718	6,443
	S	275	5,689	3,913	10,803	4,320	7,012	9,512
Viscose		7,320	6,686	9,482	19,956	18,003	22,540	26,170
	F	228	241	257	250	149	428	1,122
	S	6,529	5,789	8,326	18,607	16,786	20,674	21,796
Total		48,103	59,315	83,496	98,688	95,490	113,938	165,269
(Synthetic)		36,383	43,566	61,348	64,006	61,299	76,599	115,520
(Rayon, Acetate)		11,710	15,749	22,148	34,682	34,191	37,339	49,745

Source: Statistical Yearbook of Foreign Trade.

a/ Fibre, yarn and fabrics only.
Fabrics are excluded until 1974.
F = Filament yarn.
S = Staple fibre.

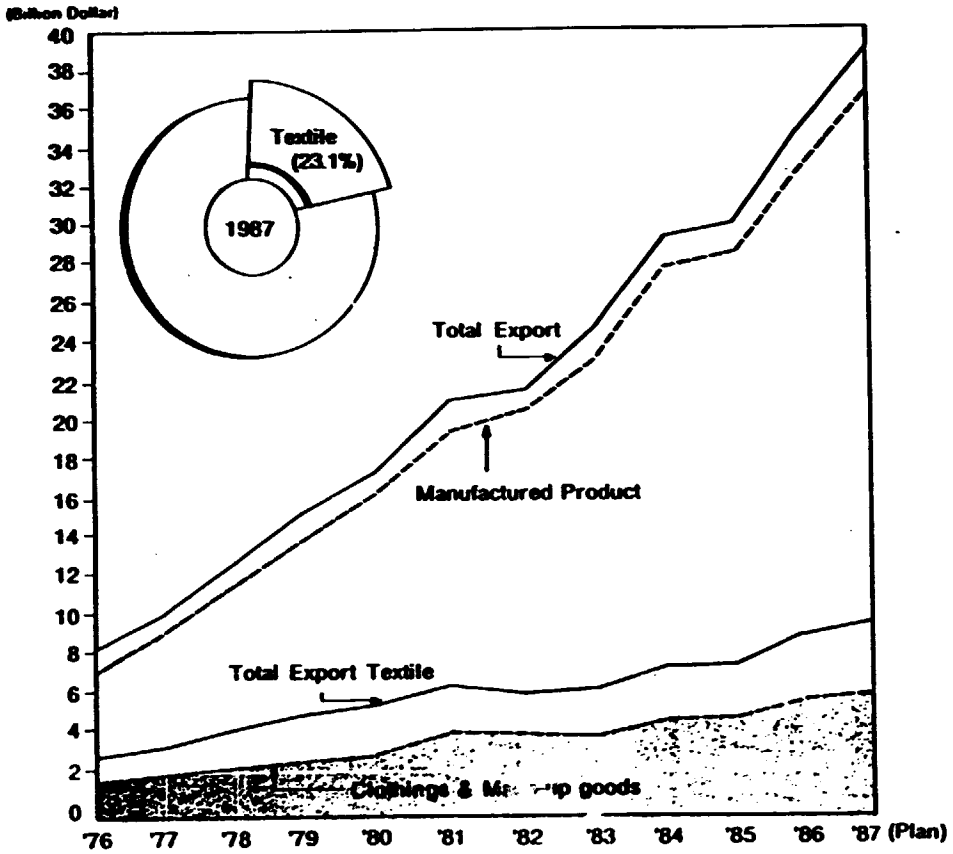
Production and import of raw materials



(1,000 ton)

		1981	1982	1983	1984	1985	1986
Caprolactam	(Import)	93	83	93	110	114	116
	(Production)	40	42	40	41	42	41
AN	(Import)	76	122	98	117	119	143
	(Production)	52	42	44	48	49	50
DMT	(Import)	14	17	17	21	29	47
	(Production)	-	-	-	-	-	-
TPA	(Import)	140	136	178	243	303	392
	(Production)	159	155	167	177	175	177
EG	(Import)	46	52	71	105	134	172
	(Production)	74	77	94	85	95	86

Exports of textile products

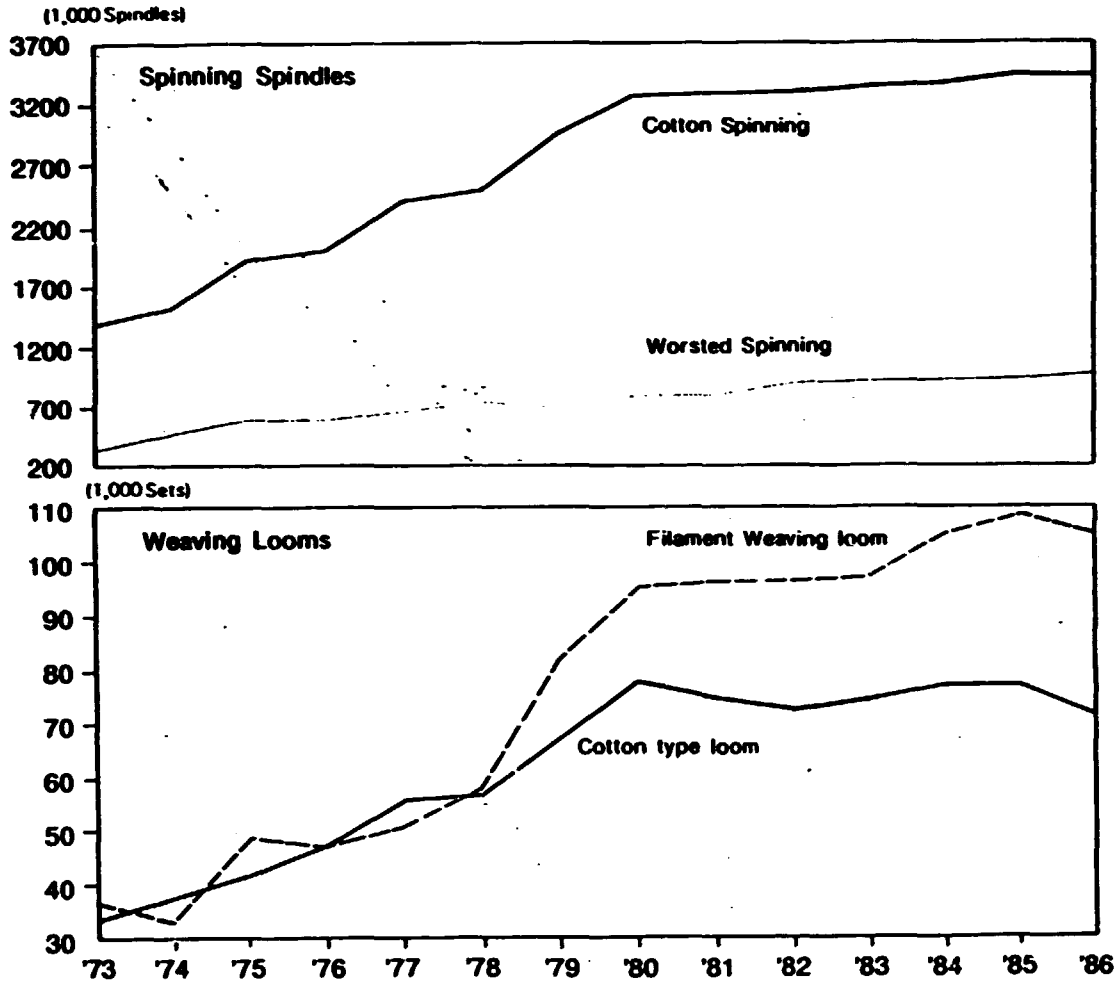


(Million dollars))

	1976	1980	1981	1982	1983	1984	1985	1986	1987 (Plan)
Total export	8,115	17,505	21,254	21,853	24,445	29,245	30,283	34,715	39,000
Manufactured products	7,283	16,151	19,508	20,253	22,864	27,787	28,880	32,826	37,000
Textile products	2,740	5,014	6,186	5,925	6,051	7,079	7,004	8,734	9,000
Fiber & yarns	282	692	622	545	595	701	694	698	730
Fabrics	737	1,285	1,705	1,635	1,788	1,939	1,889	2,549	2,570
Clothing & goods	1,721	2,937	3,859	3,743	3,668	4,438	4,421	5,487	5,700

Source: Ministry of Trade and Industry.

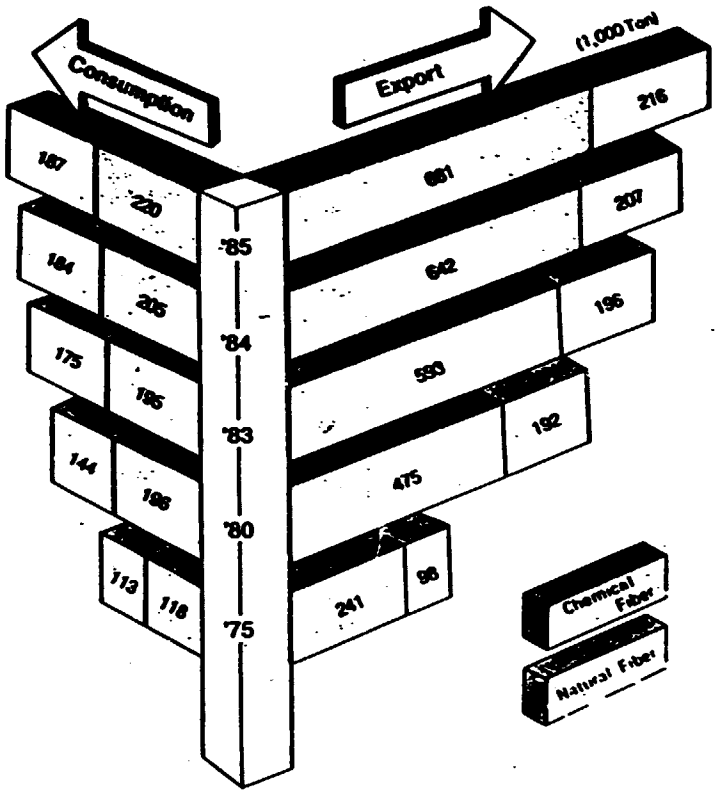
Facilities of textile industry



	Type	Unit	1980	1981	1982	1983	1984	1985	1986
Spinning	Cotton	1,000 sp	3,239	3,260	3,200	3,350	3,383	3,412	3,435
	Worsted	1,000 sp	904	919	917	865	873	868	952
	Woollen	1,000 sp	103	106	115	123	132	151	161
Weaving	Cotton	Loom	78,399	74,700	71,100	75,697	76,934	77,273	70,892
	Wool	Loom	5,328	5450	5,450	6,264	6,336	6,472	4,609
	Filament	loom	96,796	97,200	97,100	98,249	104,395	107,462	105,998
Knitting	Circular	Set	28,073	n.a.	n.a.	23,934	24,664	24,408	24,408
	Flat	Set	30,809	n.a.	n.a.	27,052	26,333	27,918	27,918
	Warp	Set	1,769	n.a.	n.a.	1,591	1,617	1,374	1,374

Source: Korea Federation of Textile Industry.
n.a. = Not available.

Consumption of textile fibres



(1,000 ton)

	1981		1983		1984		1985	
	Cons.	Export	Cons.	Export	Cons.	Export	Cons.	Export
Cotton	1,278.8	168.5	160.3	163.4	164.7	171.9	169.1	170.1
Wool	8.5	19.1	6.6	27.4	9.6	26.2	8.4	28.2
Other	7.2	4.4	8.7	5.4	9.8	8.5	9.5	17.2
Natural fibre total	143.6	192.0	175.6	196.2	184.0	206.6	186.9	215.5
Nylon fil.	40.2	87.6	28.1	96.0	26.1	95.7	26.2	99.7
Polyester fil.	28.4	113.3	31.9	171.4	29.7	180.1	31.4	207.3
Polyester S	28.2	114.1	32.1	148.3	34.7	177.9	38.0	196.1
Acrylic S	52.2	90.0	39.4	119.0	56.9	110.2	59.4	104.4
Rayon S	8.9	8.8	14.2	4.7	12.4	5.5	16.1	5.6
Other	38.6	60.7	49.6	52.8	44.4	72.3	49.2	67.8
Chemical fibre total	196.5	474.5	195.2	592.2	204.2	641.7	220.4	680.9
Grand total	340.1	666.5	370.8	798.5	388.3	848.3	407.3	896.4

Source: Korea Federation of Textile Industry.

Yearly development of chemical fibre industry in the Republic of Korea

NAME OF COMPANY	STARTING CAPACITY(Ton/day)	YEAR	EVENTS
MIJIN CHEM. IND. (TONG YANG VINYLON)	P.V.A. ⊕2	1959	
		1962	Foundation of Korea Synthetic Stretch Ind. Association
KOREA NYLON (KOLON IND. INC.)	Nylon ⊕2.5	1963	Reorganized KSSIA to KOREA SYNTHETIC FIBER IND. ASSN(KSFIA).
HANIL NYLON (TONG YANG NYLON)	Nylon ⊕1.3	1964	KOREA export exceeded 100 million dollars.
HUNGHAN CHEM. FIBER (WONJIN RAYON)	Rayon ⊕15	1966	KSFIA changed name for KOREA CHEMICAL FIBER IND. ASSN. (KCFIA)
HANIL SYNTH. FIBER	Acryl ⊕7.5	1967	Beginning of the 2nd 5-year economic development plans.
JEIL SYNTH. FIBERS	P.P ⊕1.3		Exports of Korean textile goods exceeded 100 million dollars
TONG YANG SYNTH. FIBER (TAE KWANG IND.)	Acryl ⊕6		
DAE HAN SYNTH. FIBER	Polyester ⊕6	1968	Start publishing organ [THE CHEMICAL FIBER]
TONG YANG NYLON	Nylon ⊕7.5		Earth breaking of THE SEOUL PUSAN HIGHWAY.
SAMDUCK TRADING	Polyester ⊕1		
SUNKYONG FIBRES LTD.	Acetate ⊕5.5		Producing capacity of Korean Chemical fiber industry reached 100 ton per day.
KOHAP LTD.	P.P ⊕2.5		
PACIFIC CHEM. FIBER (SAM KWANG MOOLSAN)	Polyester ⊕0.5		
SUNKYONG FIBRES LTD.	Polyester ⊕7	1969	Foundation of KOREA POLYESTER FIBER IND. ASSN. (KPFIA)
SAM YANG CO.	Polyester ⊕1 ⊕12		
JEIL SYNTH. FIBERS	P.P ⊕2.5		
DAE HAN SYNTH. FIBER	Polyester ⊕4	1970	KCFIA and KPFIA merged into KOREA CHEMICAL FIBERS ASSN. (KCFA)
SUNKYONG FIBRES LTD.	Acetate ⓘ2		Exports of Korea exceeded 1 billion dollars.
KOREA POLYESTER (KOLON IND. INC.)	Polyester ⊕20	1971	TONG YANG NYLON took over HANIL NYLON. TAE KWANG IND. took over TONG YANG SYNTH. FIBER.
KORYO NYLON	Nylon ⊕1.3		
KOHAP LTD.	Nylon ⊕4	1972	KOREA NYLON and KOREA POLYESTER annexed both business. Beginning of the 3-rd-5-year economic development plans.
KOREA NYLON (KOLON IND. INC.)	Nylon Tire Cord ⊕5.4	1973	HUNGHAN CHEM. FIBER changed name for SEJIN RAYON.
CHEIL SYNTH. TEXTILES	Polyester ⊕50	1974	Start publishing weekly [THE TEXTILE BULLETIN]
SUNKYONG FIBRES LTD.	Polyester ⊕100		
KOHAP LTD.	Nylon ⊕20		
SEJIN RAYON(WONJIN RAYON)	Rayon ⊕27	1975	
TONG YANG POLYESTER	Polyester ⊕30		
		1976	SEJIN RAYON changed name for WONJIN RAYON.
JEIL SYNTH. FIBERS	Polyester ⊕2	1977	Exports of Korea exceeded 10 billion dollars. KOREA NYLON and KOREA POLYESTER changed name for KOLON(NYLON) and KOLON(POLYESTER).
TAE KWANG IND.	Spandex ⊕1	1978	TONG YANG VINYLON discarded P.V.A. facilities.
TONG YANG NYLON	Polyester Tire Cord ⊕9		Producing capacity of Korean Chemical fiber industry exceeded 1,000 ton per day.
KORYO NYLON	Nylon ⊕20	1979	
KOLON(NYLON) INC. (KOLON IND. INC.)	Polyester Tire Cord ⊕6	1980	The fixed exchange rate system is substituted for the fluctuating rate system.
KOHAP	Polyester ⊕12	1981	KOLON(NYLON) and KOLON(POLYESTER) amalgamated to form KOLON INDUSTRIAL INC. Exports of Korea exceeded 20 billion dollars.
CHEIL SYNTH. TEXTILES	Polyester ⊕24	1982	KCFA actualized member company's chemical fiber producing capacity. Beginning of the 5th 5-year economic development plans.
KOHAP	Polyester ⊕10	1983	KOLON took over KORYO NYLON.
		1984	Exports of Korean textile goods exceeded 7 billion dollars.
TONG KOOK SYNTH. FIBERS CO., LTD.	Polyester ⊕30	1985	Exports of Korea exceeded 30 billion dollars.
		1986	KCFA actualized member company's chemical fiber producing capacity Exports of Korean textile goods exceeded 8 billion dollars

(f) Note on emerging trends and introduction of new technologies in the textile and clothing industries - with particular attention to the impact on the women labour force and skill requirements[1/]

INTRODUCTION

This note constitutes a summary of an interim report of a study intended to provide the basis for a series of country-level analyses of the changing role of women in the textile and clothing industry of selected Asian countries. It seeks to identify and assess those relevant technology-induced innovations and structural changes in the textile and clothing industry (including in particular changing production and investment patterns at the international level) that will in turn determine the future skill and gender distribution of the industry's predominantly female labour force. Due to opposing trends, the precise impact on the skill requirements in the industry is not yet clear. However, it appears safe to assume that whereas new supervisory, data control and programming activities tend to increase the skill requirements, the generally higher degree of automation would tend to decrease the required skill level in other activities. For the female labour force in developing countries, it will therefore be particularly important to meet these challenges in order not to be replaced by both new equipment and differently qualified male labour.

The issues are

- to identify the functions which are affected by technological innovations;
- to assess the future application of new technologies;
- to elaborate the impact on production costs;
- to assess the impact on labour absorption;
- to outline tendencies in the global locational pattern of production (relocation tendencies).

1. TEXTILE INDUSTRIES

1.1 Technological developments

The traditional classification of the textile production system consists of three major parts:[2/]

1/ Based on a paper prepared by UNIDO consultants U. Adler and M. Breitenacher. (A summary note was presented at the seminar at Seoul.)

2/ See General Agreement on Tariffs and Trade, Textiles and Clothing in the World Economy, Appendices I-IV, Geneva, July 1984.

1. the manufacturing of yarn from either staple or filament;

2. the fabric formation (weaving, knitting, production of non-wovens) and finishing; and

3. the assembly of finished products for end-uses (hosiery and knitwear, carpets, apparel and other made-up articles).

Most of the technological changes in the textile industry have involved improvements in conventional production methods, specially in higher speed and advances in automation. This has resulted among others in higher output, improvement in product quality and interconnection of the different operations in order to achieve man-less transfer of the material from one processing stage to the other.[1/] The last mentioned type of automation appears to have been more realized in spinning than in weaving. Besides these advances in textile technology there were also revolutionary innovations, for example rotor spinning and shuttleless looms.

The technological progress in the textile industry has been mostly stimulated by material innovations, in particular by improved synthetic-fibre technology. In this connection it is worth mentioning the increase in the speed in spinning and weaving, and the progress in yarn texturing systems, in production methods of non-woven fabrics and in process technologies such as dyeing, printing and finishing.

Since the late 1970s there has been an increasing use of electronics-related technologies. The application of computers does not only allow to plan and to control the production process (CIM = Computer Integrated Manufacturing) but also to integrate the different stages of production. The modern trend is referred to as integration in contrast to automation. This leads to higher flexibility and an optimal flow of material (implying reduced stocks).

The technological development in textile manufacturing will continue in the next years, probably without any leaps or breaks. In particular, the speed of machines will further improve and the automation in production will advance. It appears very likely that in the year 2000 (at least in some stages of the production process) the use of the machines without man-control will become reality.

The question is to what degree the manufacturers will apply the available new technologies, since there are many obstacles to the further diffusion such as the supply of capital, human skills, and know-how. Obviously the industrialized countries are comparatively better supplied with these factors than the developing countries. Despite of these difficulties the developing countries in the past realized a higher rate of modernization[2/] in the textile industry than the developed countries. However, the latest technology still is less used in the developing countries compared with the developed

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1/ See Organization for Economic Co-operation and Development, Application of New Technologies in Mature Industries - Case Study on the Textile Industry, Paris, June 1987.

2/ Share of less than ten years old equipment in total equipment.

countries.[1/] If they do use the latest technology the developing country producers tend to buy a machine almost as modern as those used in industrialized countries though for many purposes a conventional machine (sometimes with automatic attachments) often would turn out to be more suitable.

The question whether the developing countries will apply new technologies on a wide basis in the near future is not easy to answer. One of the decisive factors will be the development of the international cost competitiveness.

1.2 Implications of new technological development for the production costs and impacts on the comparative advantage of the textile industry in developing countries.

As mentioned above the textile industry has become a capital-intensive industry. Accordingly, capital costs weigh very heavily in total costs especially in the developing countries. In contrast, labour costs only play a minor role in the developing countries (see Table 3.9). Assuming that the fast progress in textile technologies will continue in the future the

Table 3.9. Total yarn and fabric cost elements, 1985
(per cent of total costs)

Cost element	Brazil	Fed. Rep. of Germany	India	Japan	Rep. of Korea	United States
			Yarn			
Raw material	58	63	63	62	70	59
Labour	5	13	4	9	4	15
Capital	29	14	19	16	12	16
Others[a/]	8	10	14	13	14	10
Total	100	100	100	100	100	100
			Fabric			
Raw material	35	38	37	38	46	33
Labour	8	25	6	17	7	26
Capital	45	24	33	27	24	27
Others[a/]	12	13	24	18	23	14
Total	100	100	100	100	100	100

Source: International Textile Manufacturers Federation, International Production Cost Comparison 1985.

a/ Waste, power, auxiliary material.

1/ E.g. measured by the relation of stock of shuttleless looms to total stock of looms.

advantage of the developing countries in terms of labour costs will decrease. But as the international competitiveness is not only influenced by costs, the quality factors also have to be considered. In this respect modern technology enables developing countries to produce textile products of almost the same quality as the developed countries. Nevertheless the rate of product innovation in developing countries will be lower than in industrial countries.

1.3 Impact on labour absorption and on changing skill requirements

Further progress in textile technology will cause a further increase of labour productivity respectively a decrease in the number of persons employed. As a consequence the share of textile industry in total manufacturing employment will continue to fall both in developed and developing countries.

Past trends in skill requirements will continue: increase in demand for highly qualified personnel, such as supervisors in the production process. At the same time machine operations will not require special skills and therefore semi-skilled personnel will be sufficient. The operator's position in weaving and spinning will be most strongly affected by these tendencies.

1.4 Global locational patterns of production

The question arises whether the new textile technologies will influence the future pattern of textile production in the world. As mentioned above the progress in textile technologies has to some extent improved the competitive situation of the industrialized countries. On the other hand the clothing industry, the most important customer of the textile industry, is still declining in the industrialized countries - despite of the progress in clothing technology. At present no general relocation tendency from developing countries back to the industrialized countries can be assumed for the clothing industry. Therefore the textile industry will continue to loose its most important customer in the domestic market. Considering the stagnating domestic market in the industrialized countries, no futher growth in textile production during the next years can be projected.

On the contrary the capacities of the textile industry in developing countries are expected to expand, due to the following reasons:

- the textile industry is often the "take-off" industry for many developing countries;
- the domestic textile market in the developing countries will expand considerably in the next years;
- fibres needed in textile production (above all natural fibres, but more and more also man-made fibres) are very often produced in developing countries themselves.

2. CLOTHING INDUSTRIES

2.1 Identification of stages/functions of the industry's production processes affected by technological change

In the labour-intensive clothing production there is generally a global advantage for those who have lower wages. The state of technology and its development depends on the product and labour markets. There are distinct markets to which the production technology has to be adjusted.

The first market is the world market of first class clothing. The standards here are those of high quality, of productivity and just-in-time production which require top-level technology throughout. These are the markets of the industrialized countries and other upper level markets (also in developing countries). This means, a high technological standard is to be found both in developed and developing countries to serve high-level markets at one's own risk or as a subcontractor. Wage levels are not a crucial determinant of competitiveness in these markets.

The second markets are those with medium and lower product standards allowing the utilization of a lower level of production technology. Producers for these markets adjust their technology essentially to variations in their labour cost. This means saving capital at relatively low wages. These two types of markets have their own rules.

Manufacturers in the industrialized countries have to a large degree lost their competitiveness vis-à-vis low-price imports. Obviously they have two adjustment strategies: either to relocate production or to introduce product innovation and other services (fashion, quality, just-in-time production) in order to achieve a market position that no low cost producers of clothing can match.

The manufacturers in semi-industrialized countries and in the developing countries focus their main attention on participating directly or as subcontractors in the world market of medium and lower standard clothing production. They seek to extend their industry and to improve their own supply.

One should notice that the innovation power of these countries as competitors of the industrialized countries in the international division of labour will increase. The actors in the world clothing industry have specific aims and needs to apply and to improve technology. Table 3.10 summarizes the conclusions of the above.

2.2 Assessment of the likely pace and degree of future application of new technologies

The main innovations in today production technology are:

- The introduction of microelectronics both in the hardware (sewing-machines, systems of computer aided design, automatic grading, plotting, automatic cutting, automatic transport, computer aided

storing) and in the software for managing, supervising, planning, steering and controlling of manufacturing processes.

- The automation of single assembly operations and the automation of total assembly processes.

Table 3.10. State of the art of technology in the clothing industries in relation to different types of product markets

Labour market / Product market	Industrialized countries	Semi-industrialized countries	Developing countries
Production for the high-level market	Similar, upper-level technology, that corresponds to factor-cost of countries, which are below the standard of industrialized countries. Technology depends on a world-standard of clothing products.		
Production for lower level	Level of technology corresponds to the factor-cost and the relation of these.		
Strategy on the markets	Rest-market with issues of fashion quality and just in time production	Increasing capability for innovation both in product and production technology.	Development of industries, subcontracting, joint ventures.
Particularities	Innovation - handicaps conserve low technique. No automation that fits to the factor cost.	Low level productivity but low wages. Partly own R and D & computer industry.	Growing participation in the world-market of clothing
	Chances of informations technology		

The introduction of microelectronics in clothing technology will be the most efficient innovation for the rest of this century. It is hardly possible to review all options for both developed and developing countries. The case of the Federal Republic of Germany may serve as an example for the state of technology in developed countries and its change (Tables 3.11 and 3.12). First it can be noted, that clothing technology already today has a set of systems that fits for most production purposes. For instance, countries with low wages and a reasonable demand for common products (China, India, perhaps South America) and/or good chances for exports, get benefits from the traditional semi-automation or the traditional automation of single operations and sequences of an assembly. The demand of local markets in developing countries for instance can be mostly supplied with the available technique of single purpose and universal machines.

Table 3.11. The state of technology and tendencies in the clothing-industries of the Federal Republic of Germany
(Figures in % of answers - enquiry 1983)

Part of manufacturing process	1983					1986 (forecast)				
	Handwork	Universal machines	Single purpose machines	Semi-auto-mation	Automation	Handwork	Universal machines	Single purpose machines	Semi-auto-mation	Automation
Design	71	27	21	5	3	61	25	21	7	13
Cut patterns	61	11	22	8	13	33	9	27	13	34
Planning of work	65	18	14	7	10	45	14	20	13	20
Cutting	26	25	58	22	6	21	21	45	32	19
Assembly	13	39	67	28	7	10	32	61	39	16
Pressing	17	33	51	31	7	13	29	45	41	14
Storing/transport	63	22	21	14	4	47	18	22	23	14
Management/ administration	39	25	27	29	25	29	22	26	25	39
Selling	59	22	16	12	14	51	21	15	14	18
Together	24	35	59	28	10	19	28	52	34	17

Source: Ifo-Institute for Economic Research 1984.

Table 3.12. New manufacturing technologies in the clothing industries of the Federal Republic of Germany (1983/1986)
(figures in % of answers - enquiry 1983)

Degree of implementation / Technology	New manufacturing technologies Has been implemented	Will be implemented until 1986	No chance of implementation
I. New manufacturing systems	24	30	46
of which:			
automatic cutting	6	21	73
flexible production systems	10	36	54
multipurpose sewingmachines	29	37	34
automatic transport	11	20	68
automation of sequeces of stations of an assembly	8	26	66
ergonomic design of the workplace	45	27	27
molding	4	10	85
3-dimension sewing	3	7	89
welding, glueing	20	9	71
roboters	4	8	88
II. Computers in manufacturing process	61	24	15
of which:			
manufacturing-process information	37	34	27
payroll-work	79	15	7
efficiency-controll	45	34	12
steering of process	38	38	24
computer aided design	18	35	47

Source: Ifo-Institute for Economic Research 1984.

The present trends towards flexibility of production in the clothing industry are matters of immediate concern for the high-level markets in industrialized countries and will become a concern for those manufacturers who work for the world market at a high-level - either at their own risk or as a subcontractor. Those manufacturers need the information-technology to reduce the costs of product development, supervising, planning of production, steering of processes, controlling, managing, accounting and marketing. These are costs which explode with the tendency to serve high-level markets and to respond to their flexibility requirements. A top-level manufacturer allocates about 50 per cent of the labour cost to these functions. Flexibility raises the costs for set-up, non productive work and quality control. The microelectronics affects step by step the production systems, starting from sewing-machines, towards automation systems and CNC-systems to a kind of flexible automation. Today there are only special solutions. There is no concept of an integrated system of flexible automation as is the case of production technology in some other branches.

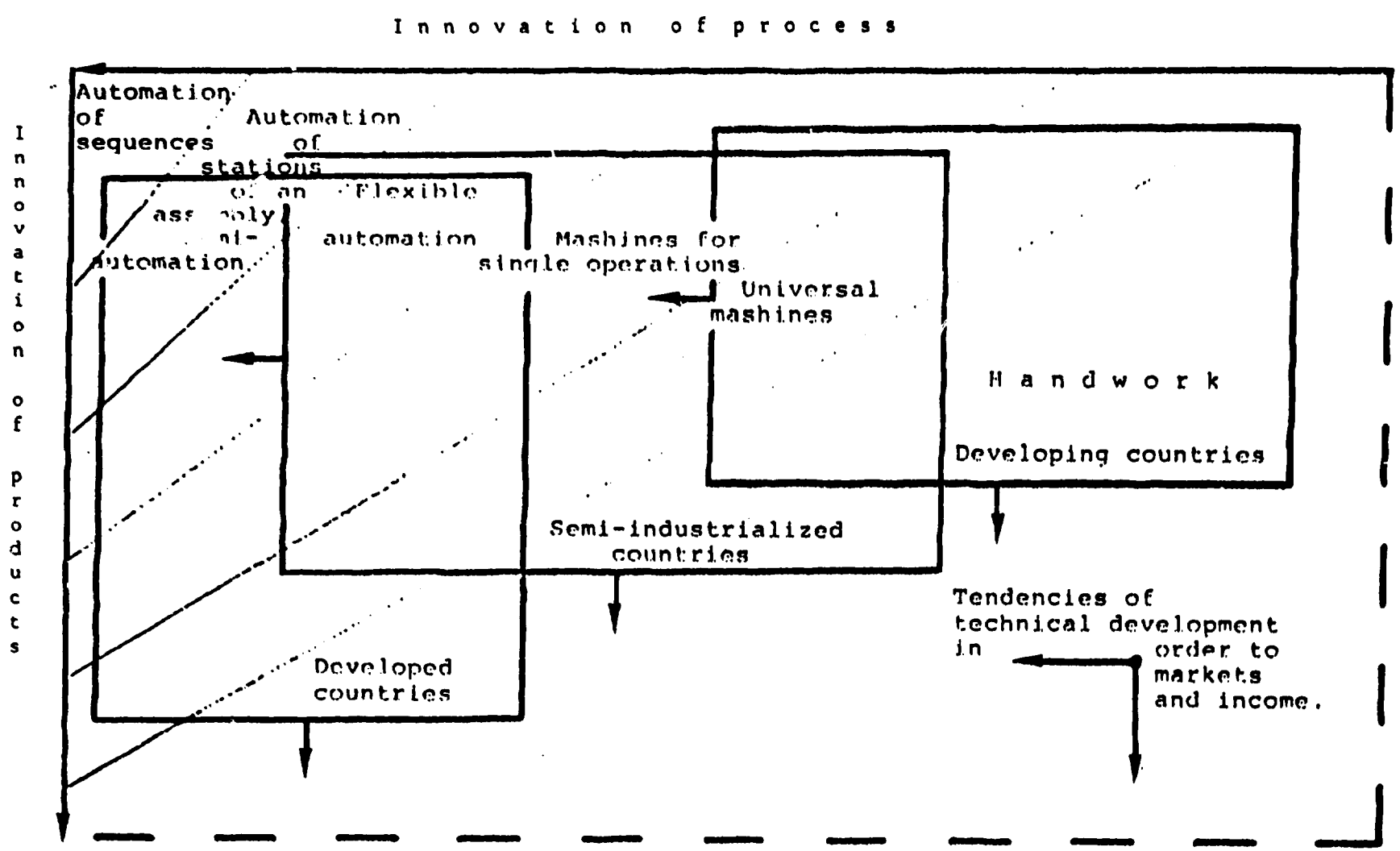
The introduction of new information technology is not an exclusive option for industrialized countries and for the export production zones of the Third World. At every level of product markets and labour markets there is a competition between manufacturers at different levels of production technology. There is even a competition between export production zones and manufacturers in the developing countries for subcontracting and for joint ventures. And there will always be newcomers who work with lower labour cost. At the end of this century the manufacturers of the developing countries may play the role which the newly industrializing economies of South East Asia, the eastern European countries or the semi-industrialized countries are playing now. This is a dynamic process in which information-technology will play an important role, which, however, nobody is yet able to define exactly.

The future is not certain. One opinion is that the implementation of microelectronics will produce the greatest benefits only for the industrialized countries or for those who work for upper level markets. The other opinion is that microelectronics gives even the developing countries generally the chance to participate actively in the world industrialization process. The main problem is still that automation in industrialized countries may give rise to relocation tendencies. The development until the end of this century can not be precisely predicted. First, it depends on the containment of protectionism in the world economy. A decreasing protectionism tendency means better access of developing countries to the world clothing market, new structures in the international division of labour and increasing demand for microelectronics. Second, the status of information-technology for the clothing production is not yet on a level to support flexible automation in the industrialized countries. Presently information-technology is a sub-industrial one. Nevertheless it is likely, that the information-technology will be developed to the needs of both developed and developing countries in a medium-term perspective. Third, some semi-industrialized and some developing countries have already developed their own computer industries or a good R and D basis, which will enable them in the long-run to elaborate their own systems (Taiwan Province of China, Brazil, Mexico, Republic of Korea, China, India). As a result these countries will not get only a better chance of penetrating into the market of clothing technology, but also into the world market of manufacturing information systems.

2.3 The impact of new technological developments on the level and structure of production costs; implications for skill requirements and wages

Within traditional technology and organizational concepts, wages are the main cost factor. Various systems and concepts of rationalization have the aim to reduce labour costs in the production process. Even the most recent automation of single operations and of sequences of assembly operations need less skilled workers. The highest skill requirements and organizational responsibility in a clothing firm is to be found at the level of specialists in management, in development, supervising, planning and steering of production or in accounting. Skilled labour in management enables unskilled work in the assembling. Eighty per cent of the work in a plant which produces usual garment can be trained within three months.

Figure 1: Innovation and different use of technology as a function of markets



Source: Ifo-Institute for Economic Research

Changes of skill requirements depend on the market and on the direction in which the concept of organization develops. There are two scenarios: The first is the traditional one. It is the old innovation strategy to work with high skilled managers or experts and unskilled workers. This type of organization is geared to low-level markets, markets of usual or standard garment. In the case of high fashion, high level clothing, however, there are lots of very small orders involving different types of products. Unless new organizational concepts are introduced that increase production flexibility this will raise production costs and lower productivity.[1/] For those markets there is a demand for semi-skilled and high-skilled workers as well as high-skilled managers and experts.

Here the classic organizational concepts have no place. The future factory in developed countries needs organizational concepts of a new type. Therefore the second scenario may be classified as a "think-tank": workers need a good basic knowledge and training and they have to know a wide pattern of operations under piece-work conditions. They must be able to change between operations without a loss of productivity to support flexibility. They are responsible for machines, for quantity, and quality for the work and the rotation of work. They need more information, communication and supervision aid. These skill requirements are high and imply higher wages which in turn, require the production of higher-level products for a special market. In the two scenarios information technology has different functions. In the first scenario information is a "system for experts" to cope with exploding costs. In the second scenario information is an "expert system" that enables even the workers to improve their professional performances.

There will always be a demand for qualified or high-qualified labour in management and supervisory level as well as a demand for unskilled or semi-skilled labour in the production (especially assembly). Recent concepts of "blending" the sewing machine with electronics will require more technical knowledge about the machines. It depends on the organizational design how this will be implemented in the medium- or long-term perspective.[2/]

[1/] With computer-aided design, collections could be larger and model changes more frequent. The integration of design, pattern grading, marking and cutting, the principal preparatory stages in the clothing industry, has reduced costs and increased flexibility still further. By turning cash registers into terminals that also collect data, sales production is also linked more closely to distribution. The elapsed time from product conception to the point of sale has thus been significantly reduced. By increasing the speed of response to changes in demand, these organizational innovations give a competitive edge to firms that are in close contact with their market. In most instances, this favours firms located in the advanced industrial countries. (Trade and Development Report 1987, UNCTAD.)

[2/] In the making-up stage of the clothing industry, which accounts for nearly 90 per cent of the labour costs, major innovations are now closer to commercialization than one would have imagined five years ago. In the United States, TC2, for example, is currently testing programmable robotic sewing machines with prehensile arms that are capable of such complex sewing operations as sleeve and pocket-making. In Japan, the development of 3-dimensional sewing techniques has also advanced. (Trade and Development Report 1987, UNCTAD.)

2.4 Locational pattern of production, relocation tendencies.

Considering the developments in the developing countries in respect of technology one can assume that the bulk of future growth in clothing industry will not take place in the developed countries.[1/] The survival of the massproducing textile/clothing branches in industrialized countries is possible only through a high degree of automation, product innovation or a certain amount of bypass production. Relocated production in developing countries or in countries with low wages will be carried on ex-ante, at least in a medium-term perspective. It is not likely that production will be relocated to developed countries on a large scale. The production for special markets or of special products with a better chance of automation may be partly relocated. However, even simple products that can be automatically produced are manufactured (like shirts) for almost 80 per cent in developing countries.

It is also evident that relocation of production will not solve the employment problems in developed countries. The parts of the production which are now located in countries with low wages are those to be firstly related to automation. The global production patterns will change with the demand for clothing (as a function of growing income) both in developed and developing countries.

[2/] But demand may increase, if the top-quality products of the developed countries are produced cheaper elsewhere.

CHAPTER IV

Structural adjustment of the US textile and clothing industries within a global perspective[1]

INTRODUCTION

The purpose of this paper is to present an updated summary of the structural and strategic adjustments being made by the US clothing and textile indsutries within the broader, global parameters of these industries. As used in this paper, strategic adjustment refers to those factors of production and other competitive advantages utilized by the US industries and their respective companies to maximize favourable opportunities and minimize unfavourable threats, both domestically and internationally.

The paper is divided into three major sections. Section I presents a brief economic appraisal of the two industries, and their current adjustment strategies. The first part presents a discussion of trends in several macro level economic indicators for two industries. To provide a global perspective, the second part identifies the strategic elements considered critical by the US industries for their future well-being, and compares them to those of other national industries. A micro view is added by discussing the major adjustment strategies being made by several US companies to strengthen their domestic and overseas competitiveness.

Section II presents an appraisal of the political dimensions affecting the two industries. This section is divided into four parts. The first part contains a brief overview of the changes that have occurred in the relative bargaining power of the US vis-à-vis its trading partners, and the long run effects these changes may have on its negotiations with these trading partners. The second part addresses the implications that the changes occurring in bargaining power has had on MFA negotiations. The third part briefly discusses the political and economic implications of the Caribbean initiative for the US textile and clothing industries. The fourth part discusses the industries' attempts to influence the content of the trade bill to be voted on by the US Congress this month.

The third and final section of this report, Section III, presents a brief summary of the effects (and their implications) that current macro and micro trends may have on the international competitiveness of the US clothing and textile industries.

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[1] Based on a paper presented by UNIDO consultant Brian Toyne at the seminar at Seoul.

(a) CURRENT ECONOMIC TRENDS AND ADJUSTMENT STRATEGIES

1. THE PERFORMANCE OF THE US INDUSTRIES[1/]

Profits in the US textile and clothing industries rebounded in 1986 after the depressed activities of late 1984 and early 1985. Net profits in textile increased by some 50 per cent over 1985, and the clothing industry's profits increased by about 11 per cent on average.

Industry experts also believe that the long-run outlook for the two industries should be good for several reasons. First, shipments should be buoyed by favourable demographic patterns, including a greater proportion of the US population in the 25-44 age category. Traditionally, this particular age group has shown a liberal attitude toward using debt to finance consumption. Second, long-run expectations are further brightened by projected growth in household formations and average household incomes. Third, the reduction in the value of the dollar is viewed positively since this should dampen the level of import competition while stimulating exports. Finally, the "Crafted with Pride in the USA" campaign, launched in 1985, has resulted in an increased interest among retailers in using US manufacturers to source their private label merchandise. Since most of the $40 million allocated for the campaign is being used for TV advertising, retailers apparently want to take advantage of the advertising effort by having "Made in USA" labels on their garments.

Growth in shipments

The shipment of US textiles increased approximately 3 per cent in 1985 over 1984, and a further 2 1.2 per cent in 1986 over 1985. US consumption of clothing increased moderately in 1985 and 1986. However, domestic shipments did not fully share in this increase, due to the increase in imports. In fact, according to industry sources, domestic shipments of clothing declined in 1985 and again in 1986.

It is now anticipated that the real annual growth of the US textile industry will average about 1.0 per cent or slightly better over the next ten years. Although relatively small, this growth rate is somewhat higher than the 0.7 per cent compounded annual growth rate of the industry between 1973 and 1985. The slightly higher growth rate is partly the result of the reorientation taking place in the industry toward the growing home furnishings markets. These markets, now consuming about 33 per cent of all processed fibres, tend to be less volatile than the clothing markets, and less susceptible to import competition. In 1978, 31 per cent of all processed fibres was used in this segment of the total US market. From 1978 to 1985 fibre used for clothing fabrics declined from 38 per cent to 35 per cent.

1/ Data for this section draws heavily from "Textiles, apparel and home furnishings: Basic analysis,", Standard and Poor's Industry Survey, July 1987, and information provided by the US Department of Commerce and the American Textile Manufacturers Institute.

The real annual growth of the US clothing industry is expected to be somewhat less, average between 0.5-0.1 per cent. Although clothing consumption is expected to increase 1.5-2.0 per cent annually, it is believed that the difference will be made up by increased imports.

US exports and imports

The US textile industry experts believe that export markets hold great promise for the future, despite the experiences of the past several years. Textile exports only consumed 2.2 per cent of fibres in 1984, down from the 1980 peak of 5.1 per cent. The value of US textile exports in 1980 was $3.63 billion, but had dropped to $2.37 billion by 1985 because of the rapidly rising dollar and sluggish European economies. Other reasons cited for optimism include (1) the growing use of off-shore manufacturing by US clothing producers, primarily in the Caribbean Basin and Mexico, and (2) the growth in world consumption of textile products which is expected to exceed population growth for the foreseeable future. The increasingly cost-effective US textile industry anticipates supplying much of this new demand.

At the same time, the penetration of the US market by imports continues to plague the US clothing industry. The value of imports surged dramatically in 1984, increasing by about 41 per cent over 1983. In 1985, imports grew another 11 per cent over 1984. Partly because of the weaker dollar, imports increased only 9 per cent in 1986. However, clothing imports in 1987 are expected to increase by more than 9 per cent.

Restructuring of the industries

The US textile industry has undergone considerable change in the last three years. Starting in 1985, several companies have implemented restructuring programmes designed primarily to eliminate marginal mills and operations. Much of this restructuring involved closing obsolete plants producing clothing fabrics - product lines most affected by the high rate of import penetration. Many companies also stopped serving markets offering little or no potential and have placed greater emphasis on developing products offering some growth along with a reasonable return on investment.

Significant consolidation has also occurred. Mergers and acquisitions have occurred as a result of companies seeking to strengthen their dominance in particular market segments, or take advantage of marketing and operating synergies.

As a result of consolidation and the restructuring programmes, textile mill capacity has been reduced, and productivity has been increased. Additionally, consolidation is expected to stabilize prices as various firms expand their market shares and become dominant in some product areas.

Consolidation in the US clothing industry is also expected, as companies seek to form combinations with strong management teams and aggressive marketing organizations. It has been suggested that greater concentration in the industry should result in lower cost structures resulting from synergies and the elemination of redundant operaitons. Like the larger textile companies, the larger clothing companies have been positioning themselves in

desired market segments and eliminating less desirable lines. They have also taken steps to reduce overhead and improve efficiency at all levels of their operations in order to improve their return on investments.

Employment

There was considerable recovery in the level of employment in the textile industry, starting in the latter part of 1985. For example, employment in the textile industry had declined by June, 1985, to a record low of 1,142,000 workers. By the start of 1986 recovery has already added 30,000 workers. However, recovery slowed considerably in 1986 which saw a 0.5 per cent increase in employment. In contrast, employment in the clothing industry continued to decline, experiencing a 1.3 per cent decline last year.

Notwithstanding this short-term recovery in employment, employment is expected to decline at an average annual rate of 2-3 per cent for the foreseeable future. The growing availability of affordable technology will allow the well-positioned companies to strengthen their operating positions through efficiency gains and production flexibility. Particularly in home furnishings, such as bed and bath products and carpeting, labour costs are expected to be reduced primarily through the widespread use of automation. In the production of clothing, the greater use of off-shore operations is expected to have a dampening effect on employment.

Capital expenditures

In 1984, capital outlays by the textile industry reached a record of $1.95 billion. Expenditures in 1985 were about $1.84, and declined further to about $1.63 in 1986. The decline is probably due to the poor earnings performance experienced in 1985.

A large portion of these expenditures have been focused on improving worker productivity, particularly processes and techniques to improve yarn spinning and fabric weaving production. Coupled with annual capital expenditures averaging $1.49 billion in previous years, textile productivity, as measured by output per worker per hour, increased at an average of 5.0 per cent between 1974 and 1984. This compares with a 2.1 per cent productivity growth rate for all US manufacturing industries.

Other adjustments

In addition to extensive efforts by most large mills to increase worker productivity, considerable emphasis has been placed on other profit enhancing activities. These include better inventory control, improved product quality and design, and improved customer services. Central to these efforts are the increased use of computers and the installation of modern communication and information systems.

Partly in response to the rapidly increasing import penetration of the US clothing market, one trend has been the increasing use of off-shore operations by US companies. The increased use of technology and a greater emphasis on off-shore sourcing of specialty fabrics is providing some companies with sufficient flexibility to service high-return sectors of the clothing market.

2. STRUCTURAL AND STRATEGIC ADJUSTMENTS OF THE US INDUSTRIES

Before discussing the adjustment strategies currently being followed by US textile and clothing companies, it is necessary to briefly review the events and forces that have moulded the competitive environment in which these industries find themselves today. Their current strategic responses are not only constrained by past events, they are strongly influenced by them.

The competitive environment of the textile and clothing industries in both industrializaed and developing countries has undergone considerable change in the last two decades. The emergence of several strong textile exporting countries, such as Hong Kong, South Korea and Taiwan Province of China, and the entry of a growing number of developing countries into the international textile trading system is rapidly changing the system's structure. And this is having considerable impact on the conditions and rules governing competing industries.

The eventual success or failure of competing national industries may very well depend on their ability to adjust to the rapidly changing circumstances. Those industries which have already successfully adjusted to previous changes are more likely to emerge success in the future.

Unlike the European firms, US firms were not forced to make the kinds of adjustments required by a redefinition of competition arising from the formation of the EC. Nor were they faced with the kinds of threats that the newly emerging textile industries of developing countries posed for the maturing Hong Kong, South Korean, Taiwanese and Japanese industries. The US industry has a very large and diverse market. It was also the leader in the introduction of man-made fibres, fabrics, and clothing, and the development of the home furnishings market. As a result, it has been comparatively insulated from international developments, and its adjustments are still heavily influenced by internal changes in the domestic competitive environment. The implications of these different developments is that the US textile industry is still strongly influenced by the success of past actions, and lacks the experience needed to adjust rapidly to changing global needs and competitive conditions.

Cross-national comparison of adjustment strategies

Table 4.1 presents, in very broad terms, the adjustment strategies of several national textile industries for three decades: The 1960s, 1970s, and the early part of the 1980s. Included in the diagram are the textile industries of the Federal Republic of Germany, France, Italy, Japan, The Netherlands, Taiwan Province of China, the United Kingdom, and the United States.[1/] The adjustment strategies of the various textile industries are classified according to the approach used to satisfy market demand.

1/ See Brian Toyne, J.S. Arpan, A.H. Barnett, D.A. Ricks and T.A. Shimp, The Global Textile Industry (George Allen & Unwin, London, 1984), for a fuller discussion of these adjustments.

Table 4.1. Classification scheme for national textile industry strategies

Type of strategy	Description	National examples 1960s	National examples 1970s
Undifferentiated	Market viewed as homogeneous	Japan	France (larger firms)
	Technology emphasis on large and relatively inflexible mills	Taiwan Province of China	Japan (through FDI)
	Production emphasis on costs and long production runs	United Kingdom (large firms)	Taiwan Province of China (plans to shift to differentiated strategy in 1980's)
	Single product offering	United States	United Kingdom (larger firms)
		West Germany (majority of larger firms)	
Proliferated	Market viewed as homogeneous	United Kingdom	United States (still overshadowed by strategy of 1960's)
	Technology emphasis on large and relatively inflexible mills	France	
	Production emphasis on costs and long production runs		
	Multiple product offerings for competitive reasons		

Table 4.1. (cont'd)

Type of strategy	Description	National examples 1960s	1970s
Differentiated	Marketed viewed as heterogeneous (market can be subdivided on basis of needs) Technology emphasis on versatility and product diversity and development Production emphasis on productivity flexibility and shorter production runs (higher costs offset by premium prices and other factors) Multiple product offerings to meet needs of specific market segments Marketing and marketing research emphasized	Netherlands West Germany (minority of larger firms)	Japan (many segments) Netherlands (few segments) West Germany United Kingdom (recent shift to low value segment strategy)
Concentrated	Market viewed as heterogeneous Technology emphasis on versatility and product development Production emphasis on productive flexibility and shorter production runs Single product offering to meet needs of one specific market segment Marketing and marketing research emphasized	Italy (many firms shifting from proliferated and differentiated strategies to concentrated strategy)	Italy (high value segment)

The undifferentiated and proliferated strategies assumes the market's needs or requirements are homogeneous. The emphasis is on the manufacture of high-quality, high-volume fabrics which are competitively priced. The major difference between the two strategies is the number of fabrics produced by a particular firm. Companies adopting a proliferated strategy are attempting to differentiate their products from those of their competitors (e.g., amount of softness, ventilation).

In contrast, the differentiated and concentrated strategies assume the market is hetergeneous (market segements with different needs to be satisfied). Thus, firms adopting these strategies produce products specifically designed and manufactured to meet the needs or requirements of a few market segments (concentrated), or several market segements (differentiated).

The implications of these adjustments for the major strategy components of firms are also summarized in Table 4.1. Included are the implications that the four strategies have on (1) technology, (2) production, (3) marketing and linkages, and (4) strategic planning.

European adjustments

The European industries' strategy over the period has been to become increasingly specialized in those sectors of the textile industry in which they had comparative advantages internal to the European Community. With the possible exception of France and the United Kingdom, the result has been an EC industry with efficient subparts.

The results of these adjustments have been quite mixed when measured in terms of performance and international competitiveness. The Federal Republic of Germany's industry and the private sector of the Italian industry have emerged as the most successful, and France and the United Kingdom the least successful. The difference in the performance of these industries are many and complex. The more significant reasons include: (1) the international scope of each industry's competitive environment; (2) the speed at which change occurred in this environment; (3) the adjustment strategy or strategies selected to cope with this change; and (4) the emphasis placed on particular elements of the selected adjustment strategies. For example, the two successful industries have increasingly focused on providing a differentiated and widening assortment of high-quality product. They relied relatively less on government support, and aggressively sought low-cost overseas manufacturing in the case of Germany, and foreign markets (European and others) in the case of Italy. In contrast, the French and United Kingdom strategies have focused relatively more effort on the production of high-volume commodity fabrics and clothing, to retain a high level of employment, and to seek government assistance.

Asian adjustments

The dominant Asian industries initially sought to supply the low-end, high-volume markets of the United States, Europe, and other Asian countries using a commodity, or mass market approach. As these industries became proficient in the international manufacture and marketing of textiles and

clothing, this strategy was replaced by a strategy of supplying an increasing assortment of rapidly changing high quality and higher margin products. The strategy also includes the development of a flexible productive system incorporating a network of low-cost foreign manufacturers, and a world-wide marketing network.

United States adjustment

The United States industry has traditionally pursued a commodity, or undifferentiated, approach in the production of textiles and clothing. Although this strategy is rapidly giving way to a proliferated startegy, the emphasis still continues to be serving large market segments using cost efficient long production runs. There are many reasons for this. A few of the more important reasons include the following:

1. The US markets are relatively large, and were responsive to economic rather than high fashion product lines.

2. To remain competitive, these market characteristics encouraged the production of large volumes of relatively standardized products (e.g. the coupling of scale economies and experience economies).

3. Unlike the industries of Europe and Asia which aggressively pursued export markets, US companies have remained strongly oriented toward the US domestic market.

3. THE TEXTILE INDUSTRY

Although the US textile industry has been relatively insulated from the more dynamic international environment, the intensity of the US competitive environment has been sufficient to ensure that its adjustment was in the same direction as that of other textile industries. It has concentrated on technological innovation in production and operations, greater productivity, and the replacement of labour with capital. These trends are very apparent from the data presented earlier. However, it is not clear whether the current direction of the industry's adjustment will increase its international competitiveness. As already mentioned, the major thrust of the adjustment taking place in the US industry is to increase its efficiency in the production of a widening assortment of high volume, quality fabrics. It is basically ignoring the low volume speciality and high fashion segments of the clothing market, and is concentrating an increasing amount of its attention on the high volume home furnishing markets.

This adjustment is, of course, closely aligned with its previous strategy of providing high volume, undifferentiated products for mass markets. Thus, it is capitalizing on its previous experience and competitive advantages. This should enhance its competitiveness in those segments of the home furnishings and clothing markets requiring cost effective, quality fabrics in large volumes.

For example, Burlington announced in 1984 that it was implemented a restructuring programme. This programme includes reducing its dependency on several segments of its finished apparel fabrics where imports have had the greatest impact, placing increased emphasis on its home furnishings and

industrial products areas, and ... ing capital investments of $175 million to $200 million. Increased emphasis is on (1) product performance (e.g.comfort, natural fibre "feel", and ventilation); (2) new product development (primarily in lighter weights to meet current market trends and fashions); and (3) manufacturing flexibility. The company is investing heavily in state-of-the-art manufacturing equipment and new computer-aided systems equipment aimed at speeding the process of new fabric designs.[1/]

Springs Industries announced in the early part of the 1980s that it too was undertaking a major modernization programme. Capital expenditures were $39 million in 1982, $67 million in 1983, $51 million in 1984, and a further $70 million in 1986. Particular attention has been given to improvements in the areas of systems, communications, and control. The company is also responding to consumer trends in the US by changing the content of its light weight fabrics to a 65:35 per cent cotton-polyester content, with an emphasis on "softer" finishes. It has also increased its focus on the consumer, product innovation, and product development.[2/]

In 1983, Millekin purchased $30 million of Nissan looms (1,148). To get the order, Nissan promised to help the company produce zero defect cloth. By 1985, 50 per cent of Millekin's product was defect free, compared to 1 per cent previously for water jet looms. Millekin has also developed a computer-aided sytem to design coloured fabrics.

4. IMPLICATIONS FOR THE CLOTHING INDUSTRY

The continuing emphasis of the US textile industry's on high volume fabrics, its increasing focus on the home furnishings market, and its gradual curtailment of production for the clothing markets are having an adverse impact on several of the larger US clothing companies seeking to establish themselves in those segments of the clothing market less susceptible to import competition. For example, the impact is especially acute for clothing manufacturers requiring low volume, specialty fabrics in the manufacture of high margin, high quality women's product lines.

According to Liz Claiborne, it is increasingly difficult, if not impossible, to locally source many of the specialty fabrics needed for its women's clothing considered of designer status. Other manufacturers are encountering similar problems. According to one clothing expert, one of the problems associated with the global quota system incorporated in the trade bill currently before the US Congress is its potential to curtail the importation of fabrics unavailable in the United Sates.

To reduce its vulnerability to import competition, Liz Claiborne has targeted that segment of the market concerned with the high quality at moderate prices. Partly in response to its inability to purchase the relatively small sources. In addition, to reduce costs, more than 80 per cent of its merchandise is manufactured overseas using independent manufacturing

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1/ Burlington Industries, various annual reports.

2/ Springs Industries, various annual reports.

facilities. The company does not operate any manufacturing facilities in the United States.[1/]

Harmarx and Oxford Industries are two additional examples of successful US clothing companies. In the case of Hartmarx, considerable emphasis has been placed on installing an advanced management information system to centralize all merchandising and buying activities. It continues to emphasis high value outerwear product lines, operational efficiency, and marketing. It also carefully selects market segments less susceptible to import competition. For example, it has successfully developed a market for women's outerwear to complement its well established men's outerwear activities.[2/] In the case of Oxford Industries, off-shore manufacturing is the fastest growing sourcing method, particularly for slacks and shirts. Two major sources are the Caribbean countries and Mexico. The major production and operations focus in its US plants is on the introduction of new techniques to reduce through out time, inventory control, and quality improvements. Like Hartmarx, Oxford's operations are increasingly utilizing electronc information exchange technology.[3/]

One interesting development in response to the high vulnerability of clothing companies to cost-competitive imports, has been the adoption of a "spoke-and-wheel" concept to simultaneously gain economies of scale in production, distribution, and inventory.[4/] For example, Hartmarx's current development of a centralized merchandising and buying centre is built on this concept. Several optimal sized plants are linked by means of a relatively large, geographically centralized distribution warehouse and administrative offices. The same concept is also being used by Japanese and South Korean firms, with the major difference being that the plants are located in relatively low wage countries.

(b) THE POLITICAL DIMENSIONS OF CURRENT ADJUSTMENT STRATEGIES

Political and social considerations, both domestic and international, are playing increasingly significant roles in establishing the domain, conditions, criteria, and distribution rules under which international textile trade occurs. An obvious macro example of these influences is the Multi Fibre Agreement (MFA), and the proliferation of increasingly unco-ordinated bilateral agreements.

1/ See reference no.1, pp. T89-90.

2/ Hartmarx, Inc. Annual Report for 1986.

3/ Oxford Industries Annual Report for 1987.

4/ See Jose de la Torre, M.J. Jedel, J.S. Arpan, E. Ogram and B. Toyne, Corporate Response to Import Competition in the US Apparel Industry, Research Monograph No.74 (Atlanta, GA.: Georgia State University, 1978) for a discussion of this concept.

The increasing importance of social and political considerations does not mean that economic efficiency is not of paramount importance for the international social and political structure to be economically efficient, at least among market economies, enterprise efficiency is still encouraged. However, the ability of companies from one country to compete for market share in another country is only partly on the basis of economic efficiency.

Exporters and other firms involved in international exchanges are subject to a set of exchange conditions, criteria, and distribution rules that are becoming increasingly volatile. This volatility is brought about by changes in the terms of exchange required to meet the changing external relations (e.g. political/bargaining power) of the trading partners, and/or their internal social and political conditions. Thus, the governments of these firms must be increasingly aware of the exchange implications of the changing political and social conditions of their trading partners in order to provide them with the assistance they might need. These trends suggest, for example, that the reluctance of the United States Government and its industries to follow the examples of European and Asian countries by adopting industry-specific policies may hamper, if not hinder, the ability of its industries to remain internationally competitive.

The ability of national textile and clothing industries to exploit their competitive advantages, or to reduce the effects of their competitors in the international marketplace, is increasingly dependent on the influence they can extert over their governments and the trading power of their governments.

GLOBAL TRENDS AND THE US INDUSTRIES

Are the changes occurring in the US textile and clothing industries sufficient for them to remain internationally competitive? In the near term, it would appear that the structural and strategic adjustments occurring in the textile industry are sufficient, provided the current international textile trading system does not undergo radical change. The ability to concentrate more heavily on home furnishings and industrial goods markets provide textile firms with attractive alternatives. Also, the industry's persistence in concentrating on high-volume product lines, when coupled with a weakened dollar, should continue to provide it with competitive advantages (such as costs and quality). However, the US clothing industry, on which the textile industry remains dependent for about 35 per cent of its shipments, is not so fortunate. It faces a very troubled future. For example, sufficiently attractive alternatives for its products do not exist, labour costs are high, and technological breakthroughs are slow in materializing. Furthermore, those clothing companies seeking to serve higher margin, fashion-sensitive segments of the market are being somewhat hampered by the strategies being implemented by the US textile industry. The situation is further complicated because of the historical separation of the US textile and clothing industries. The close coupling of these industries, as in the cases of the Italian, Japanese, and South Korean industries, does not appear to be occurring.

Thus, partly because of the continued dependence of the US textile industry on the US clothing industry, and partly because of the clothing industry's increasing vulnerability to foreign competition, political action continues to be viewed as critical. However, political action is dependent on

the ability of the US government to favourably influence the international textile trading system. The question then becomes: Does the US Government have the bargaining power vis-à-vis its trading partners to influence the conditions, criteria and distribution rules of the trading system? In an attempt to answer this question, two points will be addressed: (1) the changing distribution of world trade in textile exports and imports; and (2) the shifts that have occurred in the trading power of the major market economies. The latter is important to an understanding of the evolving textile regime, and the future direction of negotiations between trading countries.

Share of world exports and imports

Table 4.2 presents an overview of the changing commodity composition of world trade in textiles and clothing between 1965 and 1985. The most striking feature of these data is the steady delcine in the export of yarns and fabrics, starting in the 1970s, and the more recent and rapid increase in the export of finished clothing. However, these macro-level trends are not too surprising, given the global spread of man-made fibre production capacity, the development of fabric production capabilities in many developing countries, and the widespread desire for less expensive clothing.

The long-term concern of the developed market economies (DMEs) and the more recent concern of the advanced textile exporting countries (ATEs) with regard to international trade in textiles and clothing is captured in the data presented in Table 4.3. As a group, the DMEs have experienced a persistent and accelerating erosion in their export of textiles and clothing since before 1965. In 1965, the aggregate exports of these economies represented 82 per cent of world trade. By 1985, this percentage had declined to 55.8 per cent. Furthermore, they are importing an increasing amount of world trade in textiles and clothing. In 1965, imports of textile and clothing to DMEs represented 70.3 per cent of world trade. By 1985, this percentage had increased to 80.1 per cent. Moreover, intra-DME textile and clothing trade remained more or less constant through out the 1970s and the first half of the 1980s, when expressed as percentages of world exports. These data indicate that the increases in imports are the result of exports from the other developing economies. The data also suggest that DME trading power is increasingly expressed in their ability to absorb imports.

The ATEs (Hong Kong, the Republic of Korea, Brazil, Mexico and Yugoslavia), although increasing their share of world exports of textiles and clothing over the 21 years period, have become increasingly dependent on the markets of the DMEs. Although their share of world exports has risen from 9.6 per cent in 1965 to 21.2 per cent by 1985, imports by the other developing economies (ODEs) declined from 21.5 per cent in 1965 to 9.1 per cent by 1985. In fact, the ODEs increased their exports of textiles and clothing, primarily to the DMEs, from 6.8 per cent of world exports in 1965 to 20.9 per cent by 1985.

Relative trading power of the major market economies

Although a study of historical trade patterns and the distribution of capabilities (e.g. production, productivity, technology) is valuable for predicting future trends, a complete understanding of the dynamics involved,

Table 4.2. World exports of selected textile and clothing goods

	Value (millions of US $)					Growth rates (%)			
	1965	1970	1975	1980	1985	1965/70	1970/75	1975/80	1980/85
Grey cotton yarn	210	307	684	2,447	2,390	7.9	17.4	29.0	-0.5
Processed cotton yarn	168	225	471	183	182	6.0	15.9	-17.2	-0.1
Synthetic yarn	710	1,767	3,541	6,302	5,753	20.0	14.9	12.2	-1.8
Fabric, cotton (woven)	1,407	1,452	3,172	7,095	4,992	0.6	16.9	17.5	-0.3
Fabric, synthetic (woven)	506	1,497	3,848	7,894	7,646	24.2	20.8	15.5	-0.6
Clothing (knitted)	1,061	2,265	6,968	18,115	21,810	16.4	25.2	21.1	3.8
Accessories	232	398	813	1,615	1,670	11.4	15.4	14.7	0.7
Knitwear	963	2,166	5,244	12,011	14,536	17.6	19.3	18.0	3.9
Trading shares of goods (%)									
Yarns	20.7	22.7	19.0	16.0	13.6				
Fabrics	36.4	29.4	28.4	26.9	24.0				
Clothing/knitwear/accessories	42.9	47.9	52.6	57.1	62.4				

Source: Summary of data presented in Table 1, Textile Policy Issues for Developing Countries, PPD/R.5 (SPEC.), Vienna, Austria, UNIDO, 20 August 1987, p.2.

Table 4.3. Share of selected country groups in world textile and clothing trade

(Percentages)

Country group	1965	1970	1975	1970	1985
EXPORTS					
Developed market economies	82.0	80.3	72.0	66.0	55.8
Advanced textile exporters	9.6	12.0	17.3	18.0	21.2
Other developing economies	6.8	5.7	7.8	13.4	20.9
Centrally planned economies	1.6	2.0	2.9	2.6	2.1
IMPORTS					
Developed market economies	70.3	75.6	78.0	77.5	80.1
Advanced textile exporters	5.0	7.5	5.3	6.0	8.2
Other developing economies	21.5	12.5	11.9	13.1	9.1
Centrally planned economies	3.2	4.3	4.7	3.4	2.6

Source: Reproduced from Table 2 from Textile Policy Issues for Developing Countries, PPD/R.5 (SPEC.), Vienna, Austria, UNIDO, 20 August 1987, p.4.

especially in the trade of textiles and clothing, cannot be obtained without an appreciation of the relative trading power of the affected countries. The ability of one country, or group of countries, to influence the trading behaviour of other countries is central to an understanding of the complexities underpinning trade. At this time, it is sufficient to demonstrate how trading power in textiles and clothing has undergone considerable change over the last three decades.

The figures presented in Tables 4.4 and 4.5 represent an attempt to measure the relative trading power of the various trading groups of countries, and that of the United States relative to its major trading partners. The rationale underpinning the data is the idea that the relative trading power of a country (or group of countries) is based on the joint effect of its ability to export and absorb imports. Although the ability to produce and export is critical to an understanding of trading power, it is not a sufficient criterion by itself. Consumer demand, or market power, also exerts an influence, especially if demand is inelastic. This, of course, is not the case in clothing and to some extent in textiles. However, the threat of local substitution is real, since the production of these commodities is relatively easy (with some exceptions, such as man-made fibre-based products).[1/] Thus, the figures presented in Tables 4.4 and 4.5 are computed using exports plus

1/ See Vinod K. Agrawal, Liberal Protectionism: The International Politics of Organized Textile Trade, Berkeley, CA: University of California Press, 1985, for a full discussion on trading power and its relationship to MFA negotiations.

Table 4.4. Shifts in the relative trading power of selected country groups

Country group	1965	1970	1975	1970	1985
Developed market economies	76.3	78.0	75.0	71.8	68.0
Advanced textile exporters	7.3	9.8	11.3	12.0	14.7
Other developing economies	14.0	9.1	9.9	13.2	15.0
Centrally planned economies	2.4	3.1	3.8	3.0	2.3

Source: Data presented in Table 4.3.

Note: The data for the DMEs include intra-DME trade. A more accurate measure should exclude this trade as was done in the case of the following table. Notwithstanding this problem, the data do provide an overall appreciation of the shifts in trading power that have occurred among the various country groups.

Table 4.5. Textile and clothing trade power of selected countries as a percentage of world trade and US share of the top three developed economies

Year	Country or economic group					
	United States	Japan	European Countries	Federal Rep. of Germany	France	United States/ Top three
1950	15.7	1.5		3.9	5.0	64
1955	15.8	2.3		6.5	5.3	56
1960	15.1	3.4	15.9			44
1965	14.2	4.6	16.0			41
1970	15.5	6.4	16.2			41
1975	13.7	7.3	20.0			33
1980	13.8	7.7	19.9			33
1985						

Source: Constructed from GATT, International Trade, various issues,UN 1982 for 1950; US Department of Commerce export and import data, 1955 and 1960. The data for 1950-80 were taken from a table presented in Vinod K. Aggarwal, Liberal Protectionism: The International Politics of Organized Textile Trade, Berkeley, CA: University of California Press, 1985, p.31.

Note: EC imports and exports exclude intra-EC trade. All data based on FOB exports and imports, except data for Federal Republic of Germany and France which are based on CIF imports.

imports as a percentage of world trade. Also presented in Table 4.5 is the United State's share of world trade of the top three DMEs (Japan, Federal Republic of Germany and France).

Not too surprising, the data presented in Table 4.4 indicates that the textile trading system is dominated by the DMEs as a group. Although the trading power of the DMEs in relation to that of the ATEs and ODEs declined between 1965 and 1985, it can still exert considerable influence over the textile trading system, its conditions and rules. This is partially the result of the ATEs and ODEs increasing dependency on the DMEs markets. However, the ability of the DMEs to exert influence, depends on the unrealistic assumption that the DMEs maintain a unified policy toward the other groups.

Events over the last two deacdes suggest that the ability of the DMEs for maintaining a unified policy vis-à-vis the other groups is rapidly dwindling. The data presented in Table 4.3 clearly demonstrates that the trading power of the DMEs has increasingly been the result of their ability and willingness to absorb imports. However, the ability of these countries individually or collectively to off-set these imports with corresponding exports is contracting rapidly. Thus, DMEs are experiencing increasing trade deficits in textiles and clothing, coupled with a corresponding decline in employment in these sectors.

The possibility of a unified position would still exist if the import-related burdens were carried equally by all DMEs. However, this has never been the case. Thus, the sharing of the import burden has been a persistent socio-political issue among the DMEs.

The reasons that the textile trading system was stable in the 1950s, and to a lessening degree in the 1960s, can be traced to the changes that occurred in the trading power of the United States. The data presented in Table 4.5 indicates that in the 1950s the international textile trading system was dominated by the United States. By 1960, after the formation of the EEC, the US share declined dramatically. Although the measure used does not reflect the composition of trade, it does give some idea of the changes occurring in potential trading power. The system could be viewed as unipolar in the 1950s, with a shift to bipolarity in the 1960s and 1970s. More recently, the system might be viewed as multipolar as Japan's share of world trade in textiles has continued to increase over time.

Additional clarity is given to the situation by the figures presented in Table 4.6. As these data suggest, textile and clothing trading power has increasingly shifted in favour of the EC. As in overall trade, the United States was clearly dominant in the global textile system in the 1950s and 1960s. By 1973, the US share had diminished sharply. However, the approximately 60:40 ratio of the US to the EC imports before 1970 is misleading. Prior to 1973, and especially before 1970, the EC did not have a unified policy on textile and clothing products. Consequently, the US had greater market power than the ratio suggests. The next largest importer, the Federal Republic of Germany, had far less than a 40 per cent import share. The first significant co-ordinated policy on textile and clothing trade by the EC was in 1977 when member nations worked out a single position in advance of the first MFA renewal. Shifts in trading shares, coupled with the adoption of a unified policy (although with country-level variations) by the EC, constitute a major change in the structure and distribution of textile trade power.

Table 4.6. The relative trading power of the US and the European countries in textile trade: Imports of textiles and clothing, share of combined US and European countries imports

Year	From Japan and the developing countries US share (%)
1960	59.7
1965	58.5
1970	59.6
1973	42.8
1975	37.2
1977	39.0
1980	35.8
1985	

Source: For 1960-1970, GATT document, L/3797, 1972. For 1973-1977, GATT document, Com/Tex/W/63, 9 October 1979. For 1980, Com/Tex/W/83. For 1985, percentages calculated from import data.

Note: EC data for 1960-1970 includes United Kingdom and Denmark's imports (data for Ireland not available but insignificant) to provide comparability after 1973.

The implications of these changes for the international textile trading system will be discussed in the next section. This will be followed by a discussion of the Caribbean Basin Initiative and the current trade bill before Congress to illustrate the impact that social and political issues in the United States have had on textile trade.

The MFA and the United States[1/]

The evolvement of the textile trading system is a prime example of the restructuring of international exchange along socio-political rather than economic lines. Furthermore, starting as far back as the bilateral agreements with Japan in the 1950s, the subsequent short-term and long-term arrangements in the 1960s, and the initial MFA signed in 1973, the United States clearly demonstrated its trading power ability.

As most people will admit, these developments substantially altered the conditions, criteria and rules governing the trade of textiles and clothing. Because of its trading power, the United States was able to secure the kinds of agreements its desired. For example, the LTA and initial MFA were strong enough to force the EC to open up their markets while allowing the United

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1/ This section draws heavily from Chapter 5 and 6 of Liberal Protectionism: The International Politics of Organized Textile Trade.

States to take pressure off its own. Its trading power was also used effectively against the developing countries to get them to join the system. These countries were not only fearful of losing the US market, but also saw an opportunity to secure access to the European markets.

With the renewals of the MFA in 1977 and 1981, the international system began to unravel. The decline in the trading power of the US vis-à-vis its European partners resulted in protracted negotiations in both instances that permitted "....domestic groups to muster their forces and participate transnationally in the renewal of the accords."[1/] The end result was the introduction of domestic politics into negotiations, and the increased intervention of individual countries in the regulation of textile and clothing trade.

The bilateral accords reached by the United States and Hong Kong, Taiwan Province of China and the Republic of Korea in 1986 are prime examples of the individual approach now taken by the DMEs. On 30 June 1986, Hong Kong and the United States signed a pact which placed a ceiling on Hong Kong's total shipment of textile to the US. At the insistance of the US textile industry, the agreement also included restrictions on the non-MFA categories of considerable concern to the US industries (linen, jute, ramie and silk blends).

The Taiwan Province of China accord, signed in July 1986, is similar in scope to the Hong Kong agreement. Since it was also retroactive to 1 January 1986, it was expected that the accord would result in a 7 per cent reduction in textile shipments compared to the 12-month period that ended in May 1986. Between 1981 and 1985, Taiwan Province of China shipments had grown at an average annual rate of 15 per cent.

The Republic of Korea accord was announced in August 1986, and limits import growth to 0.8 per cent annually, compared to an annual growth of 8.6 per cent from 1981 to 1984.

The three affected countries believed the pacts would reduce some of the pressure in the US Congress to override President Reagan's veto of the Textile Enforcement Act. The Act, if passed, would have slashed textile imports from the major textile exporters by up to 30 per cent. On 6 August 1986, the US House of Representatives failed to override the President's veto by eight votes.

Although the United States's bargaining power has been considerably weakened in recent years, its negotiations at the last MFA resulted in the inclusion of new fibres, a provision of increase control over import surges, and a provision that permits the imposition of import quotas as an antifraud measure. The new MFA accord also contains special provisions for small supplier countries, new entrants into the market, and the least developed countries. It is likely that the United States and the Europeans agreed to these provisions because they wanted greater flexibility when negotiating with major importers on a country-by-country basis.

The new provisions of the MFA and the bilateral agreements reached between the United States and major textile exporting countries accentuate and

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1/ Ibid. p. 143.

demonstrate the growing ability of individual countries to intervene in the regulation of textile trade for domestic socio-political reasons. In other words, the MFA is being used increasingly to justify protectionism at the national level rather than constrain it. This development can be traced to the decline in the ability of the United States to unilaterally dominate negotiations. The conflicting interests of its partners must be taken into account.

What can the developing countries do to defend themselves against a weakened textile trading system? Two possibilities are, of course, better bargaining in bilateral agreements, and efforts to collaborate in international negotiations. However, these efforts will only work in the future under certain conditions. Bilateral negotiations will only work when the domestic textile and clothing industries of the DMEs can be persuaded to favour a particular country's products, or when the government can be persuaded that the potential for harm to other, more important industries may occur. The potential for developing countries to collaborate is also not very good in the face of attempts by the DMEs to play off certain developing countries against others in the negotiations. Finally, in those cases where the textile and clothing industries of the DMEs are clearly separated and differ in the strategies they are pursuing, governments must learn to play on the potential split between these industries.

Implications of the Caribbean initiative

In the last five or six years, the US Government has passed several pieces of legislation that either directly or indirectly impact the US textile and clothing industries. The reasons for these pieces of legislation, and those currently under debate, can be traced to (1) the government's growing concerns in the area of foreign policy; (2) changing internal economic conditions; and (3) mounting pressure from US industries hard hit by imports.

The Caribbean Basin Initiative (CBI) is an example of one piece of legislation that directly impact both industries. The CBI, which went into effect in January 1984, can probably be traced in part to the US Government's growing awareness that this part of the world is politically and economically vulnerable (e.g. Grenada and Nicaragua). The CBI is designed to provide for economic assistance to the region.

The CBI is a 12-year, one-way free trade arrangement that grants duty-free access to the United States for imports from the Caribbean Basin countries. The programme is not only designed to promote economic growth in the region, but also benefits US producers and consumers.

Since the CBI went into effect, at least 285 new export-oriented businesses have been started. These activities have resulted in $208 million in new investments and the creation of 35,891 new jobs in the region. Of the projects started, 74 (or 26 per cent) were in either textiles or clothing, even though these products are excluded from duty relief. The reason for this interest by foreign textile and clothing producers, particularly Asian producers, is that the CBI removed US quota restrictions on clothing from the region.

A 1985 article in The Wall Street Journal reported that many Asian firms have established clothing production in the region.[1/] The major reasons cited for this interest were the absence of quotas, cheap labour, geographical proximity and the ability to control production and other business factors.

The US trade bill

In 1985, the US Congress passed the Textile Apparel Enforcement Act. However, it was vetoed by President Reagan, and Congress was unable to override the veto by a small margin. The bill, clearly expressing the desires of the US textile industry, had called for a global quota based on 1984 imports, roll-backs amounting to 32 per cent (roll-backs for some countries, including Brazil, Taiwan Province of China, Republic of Korea and Thailand were considerably higher) and excluded Canada and the EC countries.

Since this bill was defeated two events have taken place which have increased the possibility that a new textile trade bill currently being debated in Congress will receive final approval. First, the US trade deficit has continued to worsen inspite of assurances by the Reagan Administration that things will improve once the considerable drop in the value of the dollar takes effect. Consequently, many more US industries are suffering from import competition, thus bringing increased pressure on the US Government to act. Second, and perhaps more importantly, the composition of the US Senate has changed. It is now dominated by members of the Democratic Party. Thus, many experts now believe that the modified trade bill will survive a Reagan veto, if a veto is forthcoming.

Although seeking to retain the essential features of the previous bill, the new bill is not so potentially damaging to the trading relations of the United States and its Asian partners. It calls for a global quota on all textile and clothing imports made from MFA fibres and certain non-MFA vegetable fibres (e.g. linen, jute, ramie and silk blends). The bill contains no roll-back provisions, and no country exclusions. The quota will permit an annual growth in imports of 1 per cent. The bench-mark year is 1986. However, the President will have the flexibility to modify country quotas under this ceiling. This flexibility is to allow the President flexibility in foreign policy areas, including the Caribbean Basin Initiative.

The bill is supported by the US textile industry. However, it is receiving mixed reviews by the US clothing industry. As can be expected, clothing companies pursuing mass market strategies and dependent on the US textile industry for their fabrics favour the bill. Those companies seeking to establish themselves or maintain their positions in the high-margin, fashion segments of the US clothing market express considerable concern over their ability to source foreign specialty fabrics unavailable in the United States. The bill has no provision for excluding fabrics and other inputs not available in the United States.

1/ Steven P. Galante and Adi Ignatius, "Asia apparel firms use Caribbean to avoid US quotas on imports", The Wall Street Journal, 2 October 1985, p.34.

(c) IMPLICATIONS OF CURRENT TRENDS ON THE RESTRUCTURING OF THE US TEXTILE AND CLOTHING INDUSTRIES

A brief summary of the changes that are occurring within the US textile and clothing industries, and the implications of redistribution of the bargaining power of the trading countries for the US industries is presented in Table 4.7. A discussion of these changes completes this report.

1. ADJUSTMENT STRATEGIES OF THE US INDUSTRIES[1/]

In summary, the US textile industry appears to be adjusting to global trends through consolidation, the rapid introduction of technological advancements, and the aggressive development of the home furnishings markets. It also appears to be concentrating primarily on high-volume fabrics that benefit from scale effects. Specifically, company restructuring is primarily aimed at: (1) increasing worker productivity; (2) improve product quality; (3) improve product design; (4) improve market research; and (5) improve on communications with suppliers and buyers.

The larger companies have been consolidating their competitive positions through mergers and acquistions, and the enlargement of their market shares in market segements not susceptible to import penetration. Consolidation is also aimed at increasing efficiency. There has been a definite move away from the manufacture of clothing fabrics with an increasing emphasis on home furnishings fabrics.

These strategic adjustments, however, are still very much influenced by the industries' historical bias for commodity production. That is, the adjustments are being undertaken to compete more efficiently with foreign producers for the high-volume, more homogenous segments of the US and global markets. This is particularly true of the larger textile producers. Considerable attention is being given to those markets which require highly fashionable or specialty fabrics in small amounts are generally being abandoned. The aggressive development of the home furnishings market is one example of this trend. In this case, the textile companies also benefit from being market leaders in the development of this market. In effect, they are reducing their dependency on a vulnerable US clothing industry.

The larger textile companies are also rapidly introducing methods, techniques, and equipment designed to increase their operational efficiency in non-production areas. This includes the introduction of computers and the installation of information systems designed to improve on delivery time, inventory control, market research (closer to end markets), and customer servicing.

The larger and more successful clothing companies are also taking advantage of new technology, especially in the cutting stage of the production process. Attempts are also being made to reduce the labour content of the sewing operation, but this is somewhat slower in materializing. Consequently, an increasing number of the larger companies can also be expected to reduce production costs by taking advantage of foreign production.

Table 4.7. Summary of the structural and political changes affecting the global competitiveness of the US textile and clothing industries

Structural adjustments in the US textile industry

1. Consolidation of the industry through mergers and acquisitions.

2. Gradual withdrawal from the production of marginal fabrics, particularly clothing fabrics by (a) closing mills; and (b) eliminating unattractive product lines.

3. Increased emphasis on the development of the home furnishings and industrial goods markets.

4. Continued emphasis on the efficient production of high-volume fabrics, but in greater assortments.

5. Introduction of technological advancements in order to improve on:

   - worker productivity and operational efficiency
   - product quality and product design
   - inventory control
   - customer service.

6. Greater emphasis on both market and marketing research.

Structural adjustments in the US clothing industry

1. Some consolidation of the industry through mergers and acquisitions.

2. Elimination of redundant operations.

3. Greater use off-shore sourcing for (a) specialty fabrics; and (b) production.

4. Greater emphasis on quality, higher-margin segments of the clothing market by some companies.

5. Introduction of technological advancements for generally the same reasons given for the textile industry.

Political changes affecting the US industries

Shifts in trading power of the textile trading countries

1. Decline in the trading power of the United States as a result of its decline in exporting power and relative market power.

2. Increase in the trading power of Europe and Japan based primarily on market power.

3. Increase in the trading power of the advanced exporters and other developing countries based primarily on export power.

Effects of shifts in trading power on the textile trading system

1. MFA increasingly used to justify national protectionism.

2. Increase in the use of unco-ordinated bilateral agreements (unco-ordinated in the sense of mutually agreed upon actions by the industrial countries).

However, the bulk of the clothing industry is comprised of small producers with limited resources and management skills. Adverse to taking risks, they remain "captive" to the strategic adjustments of their supplier, the US textile industry. Unlike Liz Claiborne, who has aggressively gone after fabrics not available from US textile producers, many US clothing companies remain tied to the products being produced by US mills. That is, they are also pursuing strategies geared to the production of commodity, or high-volume clothing.

2. INTERNATIONAL COMPETITIVENESS OF THE US INDUSTRIES

The US textile industry expects to recover its export markets, at least in the short-term, as a result of the decline in the value of the US dollar. It is anticipated by some experts that the industry may actually increase export sales. However, the textile industry's optimistic outlook is probably misplaced. The industry's emphasis on cost-sensitive products, such as high-volume standardized fabrics is counter to global trends in the trade of fabrics. Exports of fabrics are declining for structural reasons. An increasing number of the developing countries interested in entering the clothing markets of the world are acquiring textile capacity, thus replacing imports with domestic products. These trends suggest that the future trade in fabrics will increasingly be for low-volume specialty and high-fashion fabrics not easily produced by the developing countries.

The strategy is also counter to the long-run health of that segment of the US clothing industry interested in remaining competitive with foreign producers. When the gradual withdrawal of the US textile industry from the production of marginal and low-volume fabrics is coupled with the anticipated curtailment on imports of low-volume fashion and specialty fabrics, the future ability of US clothing companies to develop the high-margin segments of the US clothing markets is certainly jeopardized. Their potential for developing foreign markets also becomes questionable.

THE CHANGING TRADING POWER OF THE US

As described above, the trading power of the United States vis-à-vis the EC and Japan is weakening. This trend can be expected to continue, at least in the near future. The result, already apparent in the MFA negotiations of 1977, 1981 and 1986, will be an increased desire by the United States industries to gain more flexibility to negotiate bilateral agreements with other producer nations under an agreed upon global quota system.

Because of the continued refusal by the bulk of the US textile and clothing producers (large and small) to become domestically and internationally competitive in the production of short run specialty fabrics and high fashion clothing, the two industries can be expected to continue to push for more protection of the US markets. The US Government can be expected to respond because of the long-run implications that the industries' current strategies probably will have on employment and country's trade deficit.

Trends also suggest that the orderly regime established by the United States through 1973 will continue to unravel. It can be expected that the MFA will increasingly be used by the DMEs to justify unilateral protectionistic actions.

TEXTILE COMPLEX STRUCTURAL ADJUSTMENT POLICY MODELS

Type of policy model	Description	Examples	Focus
Protectionist	Provide specific industry protection from foreign competition while other industry-specific policies and programmes take effect (e.g. tariffs, quotas, other non-tariff barriers)	All countries (United States)*	All textile complex industries
Internal focused structural adjustment	Provides incentives and assistance programmes designed to encourage the restructuring of specific industries to meet domestic competition (not foreign competition)	France, United Kingdom	Competitive with textile and apparel industries within 'protected' EEC
Internationally focused structural adjustment	Provides incentives and assistance programmes designed to encourage the restructuring of specific industries to meet both domestic and foreign competition	West Germany, Netherlands	Competitive with textile and apparel industries internationally
Internationalization	Policies, incentives, and programmes designed to encourage and assist specific industries to re-locate labour-intensive production off-shore	Japan, South Korea	Total textile complex efficient and effective internationally (systems approach)

* Except for the United States, which limits its support to the passive policy model, most other countries use the passive policy model in combination with one of the other three models.

CHAPTER V

(a) The evolution of the state of the textiles and clothing industries in the United States and the European Economic Community 1973-1986[1/]

During the 1973-1986 period, consumption of clothing grew both in the US and the EEC. Whereas, however, consumer expenditure actually grew strongly in real terms in the US, growth in the EEC has mainly been due to price increases. In the former country, the real annual increase has been around 7 per cent since 1983; in the EEC the average was around 1.5 per cent over the same period. The difference can largely be explained by faster disposable income growth and lower savings ratios in the US. Also, the propensity to spend more on clothing is stronger in the US than in the EEC: in the former country, expenditure on clothing grew faster than overall consumer expenditure while in the EEC the rate was lower.

Expanding demand has benefited producers in both the US and the EEC. In the US, sales and value added (current prices) have risen by some 90 per cent over the period for both textiles and clothing; production at constant prices, however, shows little growth, although there has been a certain recovery since 1982. The discrepancy of course is partly a consequence of inflation, but the explanation must in part be sought in higher quality/higher value added products. Value added at constant prices underrates the growth of profits and investments in the industry. Although profits have fluctuated strongly, and although up to 1982 textile industry profits were significantly below industrial averages, the recent years have seen a sharp rise in gains, with profits above manufacturing average in 1983 and 1986. Expanded earnings have resulted in expanding new investment, especially in labour-saving machinery and equipment permitting fast responses to changing market conditions.

In the EEC, turnover in both the textile and clothing industries at current prices doubled between 1975 (the earliest year from which EEC-wide comparable data are avialable) and 1986; value added (at current prices) increased by 75 per cent. Production (value added at constant prices) slightly decreased over the period. As in the case of the US, inflation and the shift towards higher value products explain the difference; the actual performance of the industries in terms of profits and investment was much better than would be assumed on the basis of constant value indices alone. Apart from a slowdown in the trend around 1980-81, profits (as approximated by value added minus labour cost) have shown a considerable growth. This again has been reflected in investment, which has increased (when adjusted for inflation) since 1981. The investment growth has concentrated on rationalization, robotization and other forms of labour-saving.

Employment has decreased strongly, but the downward trend has been stronger in the EEC than in the US; in recent years a stabilization can be perceived, especially in the US. The decreases are clearly related to the

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1/ Summary of a paper presented by the International Textiles and Clothing Bureau, Geneva, at the Seminar at Seoul.

introduction of labour-saving machinery and scale economies. Labour productivity in textiles has gone up by some 60 per cent during the period under review in the US, and by over 70 per cent in the EEC; for clothing the figures were approximately 40 per cent and 25 per cent, respectively.

With regard to trade in textiles and clothing, a strong upward trend in imports can be discerned from 1982 onwards in both the US and the EEC after slow and fluctuating growth in previous years. In the case of the EEC, growth figures were especially strong for intra-EEC imports. A levelling-off of imports may be noted in both cases at the very end of the period under review. Imports from developing Multi Fibre Agreement (MFA) suppliers have fluctuated quite strongly in the US; the MFA share in total textiles and clothing imports rose from 41 per cent in 1973 to 64 per cent in 1981, and was at 59 per cent in 1986. The major losses in the recent period were in cotton and wool products imports. The data available for the EEC show a more even upward trend. In 1986, MFA suppliers provided 56 per cent of extra-EEC imports. In 1985, the share of MFA imports in total US imports was some 6 per cent of apparent clothing consumption. The figures for the EEC were 7 per cent and 18 per cent, respectively.

US exports of textiles and clothing had almost trebled between 1973 and 1980, when they peaked at 585,000 tons. As a result of the growth in domestic consumption and of the appreciation of the US dollar, exports fell back by almost one half between 1980 and 1985. They recovered by 18 per cent during the course of 1986 and at an even faster pace in the first quarter of 1987.

Extra-EEC exports of textiles and clothing expanded by approximately 50 per cent in tonnage between 1980 and 1985, contributing significantly to the rise in turnover and production during this period of stagnating domestic consumption in most EEC countries. Nearly two-thirds of the increase in extra-EEC exports of textiles and clothing in value terms during this period was accounted for by the strong rise in exports to the United States and EFTA countries, reflecting mainly, (i) the depreciation of the EEC currencies against the US dollar; (ii) the intensification of discriminatory restrictions against the developing MFA suppliers in the US market, where the EEC was able to increase its share; and (iii) the double preference (no tariffs and no quantitative restrictions) in the EFTA countries. In 1986 exports to third countries declined slightly. For the EEC exports of textiles and clothing to third countries amounted to 1.5 million tons in 1986.

Both the US and the EEC show a trade deficit with regard to textiles and clothing. However, the growth of imports at the aggregate level of textiles and clothing has generally not been detrimental to the performance of textiles and clothing industries of the United States and the EEC, which displayed an increased ability to compete. This resulted from the combination of the following factors: First the proximity of a huge domestic market in the United States and of a European market without any trade barriers for the EEC permitted their textiles and clothing industries to intensify their specialization required by the continuous product diversification and the shift to higher valued products; Secondly, the "quick response" strategies in order to adapt as rapidly as possible to the frequent changes in demand; Thirdly, the increased investments in labour-saving devices such as computerization and robotization, which make a growing number of product lines less labour-intensive.

(b) Textile trade and trade barriers in Japan[1/]

1. GENERAL ECONOMIC AND TRADE BACKGROUND

The Japanese economy has expanded rapidly during the last thirty years. In spite of the global recession, average annual growth for the 1960-1982 period was 6 per cent; in the 1982-1985 period growth slowed down somewhat to 4.3 per cent. Likewise, exports grew by 12 per cent annually during 1960-1982 and by 9 per cent during 1982-1985. By 1985, the country's trade surplus was US $48 billion, to grow to US $83 billion in 1986. In contrast to earlier years, when the surplus was largely due to the faster real growth of exports over imports, the 1986 improvement was exclusively the result of favourable terms of trade (strong yen, declining prices for imports of primary goods). The growth was reflected in record exports to the US, the EEC and the developing MFA countries, the major trading partners in the present context.

2. DEVELOPMENTS IN THE TEXTILE AND CLOTHING INDUSTRIES AND TRADE

Japanese Consumer expenditure on clothing has only risen slowly in recent years: the real average for the 1982-1986 period was 2 per cent. This is much below the clothing consumption growth elsewhere in the developed countries. The explanation can be found in the slow growth of disposable incomes (which also keeps down the growth of another major consumer goods category: household textiles), high savings rates and relatively strong increases in clothing prices. The latter are partly the consequence of the small share of imports in consumption, which is the lowest among all developed countries. The decreasing process of imports resulting from the appreciation of the yen, therefore, had no significant downward impact on consumer prices.

As Table 5.1 shows, Japanese production of textiles and clothing stagnated during the 1983-1986 period, with a marked decline in 1986. Although producers' prices increased slightly during 1982-1985, they fell by 7 per cent during 1986.

The trade in textiles showed persistent surplus, rising from US $1,340 million in 1973 to US $3,000 million in 1985. Trade in clothing, however, showed a deficit which grew from US $200 million in 1973 to US $1,270 million in 1985. The depreciation of the dollar vis-à-vis the yen was the main cause of an increase of the latter figure to US $2,120 million in 1986, while the textiles surplus figure only grew slowly, to US $3,270 million. In yen, the evolution was quite different: the textile surplus shows a steady decline since 1982, being at 552 billion in 1986, while the clothing deficit increased only modestly, to 350 billion. While the 1982-1985 trend was towards lower value/unit exports, the unit value of exports rose in 1986; the unit values of imports have shown a falling trend which improved somewhat (in dollar terms) in 1986 (Table 5.2).

1/ Summary of a paper presented by the International Textile and Clothing Bureau, Geneva, at the Seminar at Seoul.

Table 5.1. Production of total manufacturing textiles and clothing[a/]
(1982=100)

	Total manufacturing				Textiles[b/]				Clothing			
	1983	1984	1985	1986	1983	1984	1985	1986	1983	1984	1985	1986
Japan	103	111	120	119	99	102	101	97	n.a.	n.a.	n.a.	n.a.
US	106	118	121	123	113	117	116	127	109	118	116	119
EEC	101	104	107	109	98	101	103	104	97	100	100	103

Source: Statistics Bureau, Monthly Statistics of Japan.
[a/] Value added, adjusted for inflation.
[b/] Including clothing products for Japan.

Table 5.2. Japan's trade in textiles and clothing
(in dollar and yen)

		Textiles			Clothing		
		Imports	Exports	Balance	Imports	Exports	Balance
In million $	1982	1,602	5,075	+3,473	1,832	547	-1,285
	1985	1,891	4,900	+3,009	1,996	728	-1,268
	1986	2,174	5,445	+3,271	2,853	734	-2,119
% change	1986/1985	+15	+11	+9	+43	+1	+67
In billion yen	1982	396	1,260	+864	459	136	-323
	1985	455	1,171	+716	478	174	-304
	1986	368	920	+552	474	124	-350
% change	1986/1985	-19	-21	-27	-1	-29	+15

Source: Japan Tariff Association, The summary report trade of Japan.

Aggregate values of imports of textiles and clothing from the MFA suppliers exceeded those from developed countries throughout, the textiles share increasing from 53 per cent in 1982 to 66 per cent in 1985, and the clothing share from 63 per cent to 69 per cent. These countries absorbed 40 per cent of Japan's textile exports in 1985. In trade with these countries, Japan had an export surplus in textiles and a deficit in clothing. Japan's fibres deficit in trade with these countries is growing, whereas its surplus for dyeing materials and textile machinery has shown an upward trend. The most important trade partners for the subsector are China, the Republic of Korea and the Taiwan Province of China.

3. TRADE BARRIERS

General barriers

On the whole, Japanese tariffs have been low since the mid-1960s. In 1983, the import-share weighted average level of tariffs was lower than in the US and in the EEC; since then, tariffs have been reduced even further. The dispersion of tariffs across sectors and subsectors moreover suggests that effective rates (as distinct from nominal rates) are even lower. Import quotas are mainly directed against agricultural products; only four quotas exist for manufactures. Finally, no important industry at present receives large direct subsidies. By most conventional protection criteria, therefore, the Japanese market for industrial products is as open as the market in other industrialized countries. By 1975, foreign direct investment in Japan had finally been liberalized as well.

In pite of the liberalization process, the ratio of manufactured imports/GDP has remained at a level close to 1 per cent over the last twenty years. Structural features making it difficult to penetrate the Japanese market include:

- the quasi-vertical integration of industries: imports of parts, etc., are not needed because of a very highly developed subcontracting system supplying tailor-made goods;

- the complexity of the Japanese marketing channels and the absence of large, independent distributors;

- the absence of a significant takeover market.

Trade barriers in textiles and clothing

Although tariffs are low in general, their level (as in other industrialized countries) is much higher in the case of most products of the textiles and wearing apparel industry. The 1987 Tokyo Round tariffs on fibres e.g. were low (some 3 per cent), but for woven fabrics the rate was 9.5 per cent, for clothing 14 per cent and for certain imports which could be supplied by developing countries the rates are higher still: the rate on woven fabrics of ramie and jute, e.g. is 20 per cent. Further, many textile products have been excluded from the Japanese system of generalized preferences. Finally, altough the extent of non-tariff barriers was less than in the US and the EEC, Japan's textile imports from developing countries have increased much less than in other industrialized countries. Informal barriers such as voluntary export restrictions agreed to by the Republic of Korea (Japan has not entered in any bilateral restraint agreement under MFA) would seem to explain the low level of such imports.

The rationale for the Government's import restrictions is to enable domestic textile industries to carry out adjustment and modernization programmes. Unlike other industrial countries, Japan has no intention to shift out of textiles and thus to increase the scope for developing country manufacturing. East Asian developing countries, which have been very

successful in penetrating other industrialized country markets, have found the Japanese market very difficult to penetrate. The trend in Japanese textile production is towards high value added areas. This is accomplished by the application of highly knowledge-intensive technologies such as automated sewing systems. Policies to support this changeover include tax and financial incentives, stimulating co-operation between firms in the introduction of structural improvements.

CHAPTER VI

Country papers - industrial policies and structural adjustments pertaining to the textile and garment industry sectors [1/]

(a) BURMA

Industrial policy and structural adjustment in the Socialist Republic of Burma: The textile and garment industries

Although Burma, like other developing countries, derives the larger part of its GDP from agriculture, the industrial sector has come to play an increasingly important role in the national economy. Gross output value rose from KS 5,408.5 million in 1969/70 to KS 9,782.1 million in 1985/86. Although initially production mainly was of an import-substituting nature, concentrating on the domestic market, exports also gained in significance from the late 1970s onwards, growing from KS 747.2 million in 1979/80 to KS 1,010.5 million in 1985/86. Some 60 per cent of the output is produced by private firms; public sector compares account for over 35 per cent, with the rest supplied by co-operative units.

The textile and garment industry is one of manufacturing's important subsectors. Total textile production was KS 760,0 million in 1985/86. Table 6.1 gives an overview of the production of the most important products. In quantitative terms, cotton yarn, shirting and men's longyi (wraprounds) have remained the most important products throughout the 1973/74 - 1985/86 period.

Table 6.1. Overall production of selected textile items

Items	Units (million)	1973/74	1975/76	1977/78	1979/80	1981/82	1983/84	1985/86
Cotton yarn	lbs	14.5	25.8	33.1	28.9	35.8	33.6	32.5
Shirting	yds	5.1	8.4	12.8	26.0	26.7	24.6	20.8
Poplin	yds	4.5	4.5	5.4	5.4	5.1	8.6	6.4
Mosquito netting	yds	0.6	2.2	9.0	5.5	2.9	3.0	4.1
Men's longyi	nos	10.5	11.8	17.2	11.8	10.8	11.4	12.3
Vests	nos	2.7	6.2	2.4	2.4	3.9	3.9	4.1
Towels	nos	1.2	1.6	1.7	1.7	1.9	1.8	1.6
Blankets	nos	0.9	1.5	1.7	1.1	1.7	1.9	1.7

Source: Report to the Pyithu Hluttaw 1979/80 and 1986/87.

1/ Presented by country participants at the seminar at Seoul.

As elsewhere in Burmese manufacturing, ownership is divided among private entrepreneurs, co-operatives and the Government. Private enterprise is usually small scale. Co-operative factories are larger, and operate with a yearly production plan. Large-scale factories are only found in the bublic sector. Production is based on targets for the textile sector incorporated in the National Plan.

From 10 units in the early 1960s, the total number of public sector factories has grown to 34 in the mid-1980s; 9 of these were completed during the last ten years. The capacity of those factories is:

Spindles	263,000
Looms	5,800
Sewing machines	1,600
Dying & finishing equipment	160

The Textile Industries Corporation (TIC), part of the Ministry of Industry, is charged with operating the public sector factories. The shares in total textile production value of the units under TIC rose from 29.6 per cent in 1973/74 to 76.6 per cent in 1981/82. After that, production of public sector factories decreased to 52.6 per cent in 1985/86.

Table 6.2 shows that public sector factories mainly produce intermediates (yarn and shirting). The decline of the public sector share is in part related to the expansion of higher value downstream private garment manufacturing.

Table 6.2. Production of selected textile items
(Governemnt sector)

Items	Units (million)	1973/74	1975/76	1977/78	1979/80	1981/82	1983/84	1985/86
Cotton yarn	lbs	7.9	13.7	28.4	24.1	28.8	27.6	26.0
Shirting	yds	4.8	9.6	20.9	22.7	24.9	20.9	16.5
Poplin	yds	2.4	5.1	5.4	5.5	5.4	7.4	6.1
Mosquito netting	yds	0.02	0.1	1.9	2.3	0.7	0.5	0.6
Men's longyi	nos	0.1	0.2	0.2	0.5	0.8	0.7	0.5
Vest	nos	1.0	2.4	1.6	1.7	2.3	1.9	2.1
Towel	nos	0.7	1.6	1.7	1.7	1.9	1.8	1.7
Blanket	nos	0.5	1.1	1.3	0.9	1.3	1.1	1.1
Shirts	nos	0.1	0.5	0.7	0.6	0.8	0.8	1.5

Source: Textile Industries Corporation.

Apart from supervising large-scale production, TIC also actively promotes linkages between large and small-scale industries. Further, it suggests investment projects to the Ministry and engages in export promotion. Cotton and polyester fibre constitute the major raw materials. Whereas cotton is grown locally, synthetic fibres and yarn, along with some cotton, have to be

imported. The growing number of spinning mills has led to an expansion of employment in downstream textile industries whose input supplies were now secured, and considerable technical know-how has soon been accumulated in the spinning, weaving and finishing industries. The expansion of the garment industry is of a fairly recent date, and technologies are still at a low level.

Although technologies are of modest standards as yet, the public sector disposes of a well developed quality control system. TIC sets quality standards, and the mills dispose of testing and quality control departments. Moreover, there is a seperate labaratory operating directly under TIC supervision. It carries out tests and applied textile research. Technology improvements for the domestic textile industry could exploit both the technical expertises accumulated in the factories and the expertise available in the labaratories.

With regard to training, the textile sector disposes of training facilities supplied by TIC and of facilities in the factories themselves. The garment factory does not dispose of these facilities yet. A training school is to be established for the industry, to provide skills for the further development of the sector; these will be especially important for the further growth of the garment exporters. Future growth will necessitate training porogrammes for higher-level personnel as well.

TIC corporations play a role in textile exports, but it has been a modest role so far. Apart from raw cotton and cotton seed expeller cake, only shirts are exported at present. Growth has been rapid enough - from 180 thousand in 1980/81 to 770 thousand in 1985/86 - but TIC has recognized the need for further growth and product diversification. TIC, although continuing to establish its own plants, foresees an important role for foreign investment in this respect. Under a capital buy-back scheme, TIC provides a site with the necessary infrastructure and buildings to the investors, who supplies the machinery, raw materials, etc. Burma pays back the foreign investment through the plant's production.

(b) INDIA

1. India's textile industry in the context of industrial policies and structural adjustment

1.1 The development of the industrial sector

Over the past four decades, industrial production in India has increased sevenfold. The manufacturing sector's GDP share rose from 10.1 per cent in 1950/51 to 15.8 per cent in 1985-86. India has achieved self-sufficiency in the majority of manufactured products, and exports of these products represent a growing share of total exports. There has been a corresponding growth in technological and managerial skills, both in production and in planning, design and factory construction. India now has the third largest scientific and technical labour force in the world. Public enterprises have been of key importance in the development of the sector. Their number was 228 in 1986, and these enterprises produced 13.6 per cent of MVA.

Industrialization has gone hand in hand with intense structural changes. Whereas the textile and food industries dominated the sector at the time of Independence, a wide range of other industries has emerged since them. Engineering e.g. has become a major industry, increasing its share in total exports from 2.1 per cent in 1965/66 to 6.9 per cent in 1985/86. During the same period, capital goods imports decreased by almost 50 per cent.

1.2. The industrial policy framework

Indian policy has always emphasized a mixed economy with overall Government responsibility for planned industrial development and regulation of industry in the national interest. Its role is both to help increase overall economic growth and to contribute to a equitable, widespread participation in and an distribution of development benefits.

The Government has classified industries in three categories. In the first are strategic industries and key industries requiring investments which the private sector cannot provide. The development of these is the exclusive responsibility of the Government. The second category consists of industries which can either be established by the Government or by the private sector, but which will eventually be absorbed in the public sector. The third category consists of private industry or, as the case may be, co-operative enterprises. A certain degree of overlapping is allowed to reflect the requirements of industrial production and development.

Licensing is a major instrument to guide investment into desired industrial development channels, and to ensure a balanced location of enterprises. Licensing policies have been adapted on several occasions to better answer the needs of industrial development. The prevention of monopolies is also an aspect of the licensing legislation, and large companies are not allowed to operate in a number of industries serving the domestic market, where small and medium-scale firms are given priority. Where production is predominatly for export, there are no such restrictions on their operations, and foreign investment is also welcome.

The 1980 Industrial Policy Statement is a response to the changing manufacturing environment of the recent years. It emphasizes optimal capacity utilization, higher productivity and employment generation, correction of regional imbalances, stronger linkages with the agricultural basis, and co-operation among industries of individual states. Together with a significant liberalization of industrial legislation, these policy guidelines should increase industrial growth. Specific liberalization/flexibilization measures include:

- "broad banding" of industrial licensing, i.e. allowing industries to apply for a license to produce a range of products rather than individual products. This licensing system now also covers the textile industry;

- delicensing of a number of industries and products (bulk drugs, specifically) with the provision that the industry/product does not come under the small-scale sector reservation schemes or locational restrictions. This scheme also contains a number of restriction to prevent monopolization;

- support for individual enterprises in a number of industries to install equipment needed for economically viable operaitons;

- waiving licensing for the expansion of export production capaicty;

- rehabilitation of viable industries with performance problems; closing down of non-viable industries to save resources.

2. Industrial restructuring and the Indian textile industry

2.1 General overview

The Indian textile industry has a complex structure: The full range from traditional cottage industries to large-scale factories using sophisticated technologies is representated, with the first type of enterprise predominant. The industry accounts for some 20 per cent of total manufacturing output, and employs millions of people. Textile and garment exports currently account for some 10 per cent of total Indian exports; 90 per cent of the industry's output is consumed domestically. Organizationally, the industry can be classified as follows:

(i) the organized cotton/wool mill sector:
- yarn spinning mills
- composite mills (spinning, weaving and cloth processing)

(ii) man-made fibres and yarn producers

(iii) the small-scale weaving and processing sector:
- handlooms
- powerlooms
- hand/power processors of yarn and cloth.

As in the other industries, public, co-operative and private enterprises are found. Although the units are dispersed over the whole country, they tend to concentrate in and around State capitals and other major urban centres.

Table 6.3 gives an overview of the production of the sector in recent years. It is clear that, while cotton textile is by far the most important product, growth in 100 per cent non-cotton production has been faster. The role of the mill sector is declining. While in 1980/81 it was still a slightly more important producer than the powerloom sector, the latter now dominates the industry, and is expected to become even more important during the next years. The powerloom sector is the only major producer of 100 per cent non-cotton textiles. The handloom sector shows modest growth; its share in total production is, however, expected to increase considerably over the next few years. The handloom sector benefits from reservation schemes for some products, such as sarees and dhoties; otherwise production is only determined by capacity and markets.

The wide range of production technologies used results in widely differing product quality. Quality control is only feasible in the large-scale plants. The obsolescence of much of the machinery, and higher labour costs, have increased production costs of Indian textiles to higher levels than those found in comparable countries. In the case of man-made

Table 6.3. Textile production, by type of fibre and sector

Fibre	1980-81	1981-82	1984-85	1985-86	1986-87	1989-90 (Plan target)
			Mill sector			
Cotton	3,434	2,923	2,619	2,587	2,427	2,200
Blended	730	877	808	783	868	1,250
100 % non-cotton	4	8	5	6	8	50
Total	4,168	3,808	3,432	3,376	3,303	3,500
			Handloom sector			
Cotton	2,600	2,540	3,073	3,156	3,262	3,700
Blended	60	60	38	45	39	200
100 % non-cotton	20	26	26	35	24	700
Total	2,680	2,626	3,137	3,236	3,325	4,600
			Powerloom sector			
Cotton	2,334	2,520	3,348	3,435	3,616	3,650
Blended	480	598	432	509	455	550
100 % non-cotton	1,326	1,429	1,665	1,942	2,078	2,200
Total	4,140	4,547	5,445	5,886	6,149	6,400
			All sectors			
Cotton	8,368	7,983	9,040	9,178	9,305	9,550
Blended	1,270	1,535	1,278	1,337	1,362	2,000
100 % non-cotton	1,350	1,463	1,696	1,983	2,110	2,950
Total	10,988	10,981	12,014	12,498	12,777	14,500

fibres, the uneconomic size of many units is the reason for high production costs. Productivity is also reduced by excess labour, labour conflicts and power stoppages. Modernization of equipment is the key to higher productivity, although the capital costs are bound to be high. The adoption of new technologies will have to take India's specific conditions into account - job losses e.g. must be kept low. Of the new spinning systems, open-ended rotor spinning has proved viable in the Indian textile industry. Machinery using a simpler version of this technology is now being produced in India. On the weaving side, shuttleless looms are finding widespread acceptance. Processing technology is on the whole close to international standards. One industry would need modernization as a whole: The wool industry, which is dominated by dispersed, traditional small and medium-scale enterprises. In most cases, equipment modernization can be undertaken by the domestic

machinery industry. It produces virtually the whole range of equipment and parts needed, and in collaboration with reputed engineering companies in industrialized countries has reached high production and technology standards.

The textile industry's raw material position is good with regard to its major input, cotton. From an importer of long-fibre cotton the country has become a net exporter in recent years. For short and medium-lenght fibre, the country still occasionally relies on imports and production bottlenecks still occur now and then where these types of cotton are essential. The country is heavily dependent on good quality wool imports. With regard to man-made fibres, there is sufficient domestic capacity, and new capacity is planned to meet future requirements. Imports of man-made fibres are, however, allowed to exert a downward pressure on the domestic product's price.

2.2 Individual industries - short profiles

The handloom sector

The handloom sector is the traditional producer of textiles in India. It engages some 10 million people using 3.8 million handlooms, and is mainly located in rural areas. As a major provider of employment and income for the poorest strata of the population, it receives special Government attention. Product reservation schemes protect a number of traditional textile products from competition by the larger and more modern textile enterprises.

Powerlooms

The spread of powerloom is a relatively recent phenomenon. It is largely a result of Government policies restricting large-scale enterprise capacity to protect the small enterprises. Approximately 640,000 licensed powerlooms are now in operation; there may be an additional 200,000 unlicensed powerlooms.

Organized mills

Although dating back to the 19th century, its expansion largely took place in the post-1960 period. The number of mills was 1,014 in 1986. The installed capacity of 25.9 million spindles is the largest in the world. The number of looms was 210,000 in 1986, which is hardly more than in the early 1950s. This is the result of the restrictive policy referred to in the previous paragraph. The organized cotton textile mills are the largest modern industry in the country, employing 1.2 million workers. Including ancillary industries, the total comes to 6 million.

Man-made textiles

This sector consists of fibre and filament producers and cloth producers and is concentrated in a few centres (Bombay, Surat, Ludhiana, Amritsar). Although of comparatively recent origin, it has grown rapdily thanks to good raw material supplies and a large domestic market. Its major problem is the use of outdated or otherwise uneconomic machinery. Modernization would help the industry to produce more efficiently, thus reducing needs for imported inputs; it could then also cater for the more sophisticated export markets.

Wool

The woollen textile sector is of comparatively recent origin. It consists of organized spinning and spinning/weaving units on the one hand, and small-scale production of cloth (using hand- and powerlooms), carpets and hosiery. Most units are found in the north of the country. Hand-knitted carpet production now has to compete with power-woven carpets. The Government has facilitated imports of high-quality raw materials and modern machinery to remove the industry's major production bottlenecks.

3. Textile exports

As Table 6.4 shows, readymade garments and cotton products were India's most important textile exports in recent years. The export of readymade garments rose by almost 50 per cent during 1986/87. A rather strong increase in exports may also be noticed in the case of two relatively minor export categories, silk and man-made textiles. The growth in the cotton product category would mainly seem due to strong improvement in the exports of cotton yarn.

Table 6.4. Export of textiles
(Rs. million)

	Exports 1985-86	Exports 1986-87
Cotton fabrics, made-ups & cotton yarn of which:	6,309.3	7,262.3
(a) Handloom fabrics & made-ups	1,613.4	1,656.7
(b) Cotton yarn	453.7	1,009.8
Readymade garments	10,961.4	15,036.8
Wool & woollen	867.5	760.0
Silk	1,508	2,014.8
Man-made textiles	539.2	727.8

International textile trade is governed by the Multi Fibre Agreement (MFA), an offshoot of GATT. During the negotiations over MFA-IV, India pleaded for liberalization of the trade and a gradual phasing out of MFA. MFA-IV, however, become operational in 1986 for a five-year period, and its coverage had been expanded to include jute, coir, silk blends, etc. A positive feature is the envisaged better market access for developing countries. Following the effectuation of MFA-IV, India has entered into bilateral agreements with all the major importers - the US, EEC, Canada, Sweden, Finland, Norway and Austria. These agreements are generally better than the previous ones in the sense that the new agreements provide for higher base levels, growth rates and flexibility than the previous ones. The textile exports from India can only grow within the parameters of these bilateral agreements and, therefore, there is a limit at which the exports can grow.

The Indian Government has supported the increase of textile exports in several ways:

- The Government has emphasized the importance of modernization of the textile industry in order to make it competitive in the international market. Manufacture of modern machinery is encouraged within the country and foreign collaboration is allowed for such manufacture. The Government also permits import of sophisticated textile machineries such as air jet looms, water jet looms, etc. at a concessional import duty to help the industry modernize rapidly. A Textile Modernization Fund has been set up to provide credit to the industry at a concessional interest rate.

- Garment and hosiery making machinery can be imported at a concessional import duty; this should help modernizing the domestic garment sector.

- The Government has set up a National Institute of Fashion Technology at New Delhi for education, research and training in the area of fashion design for garment manufacture.

- Fiscal measures such as interest reduction on working capital and exemption from tax on export earnings have been announced.

- The Government has set up a number of export processing zones where exporters have access to capital goods and raw material at international prices. Incentives such as exemption from tax are also available for units in such zones.

- A long-term cotton yarn export policy has been announced to stabilize the yarn export trade from India. Taking into account the domestic needs for yarn, liberal ceilings have been allowed for cotton yarn exports.

4. Recent policies and support measures

In view of the key position of the textile industry in the national economy, the Government has established a policy framework to help the industry maximize its contribution to development. Policies are regularly reviewed in response to new challenges to the industry. The structural weaknesses that have come to light in recent years have resulted in the 1985 Textile Policy.

The main objective of the new textile policy is to increase production of cloth of acceptable quality at reasonable prices to meet the clothing requirement of a growing population. The employment and export potential of the industry will also be given major attention. The other objectives of the policy, which flow from the above main objectives, are:

- renumerative prices for raw cotton producers and price stabilization of raw cotton;

- stimulating production of man-made fibres, among others, through tax measures;

- more intensive exploration of the potential uses of various fibres;

- easing various control measures, e.g. capacity control (the expansion of powerlooms, however, is to be restricted);

- protection of the handloom sector through strict adherence to product reservation schemes;

- special support to the handloom sector;

- modernization, rehabilitation and (where necessary) closure of low-performance enterprises;

- special support to the wool and silk industries;

- improved distribution channels for textile goods.

In the past two years, considerable progress has been made in various fields. A much more flexible use of cotton and man-made fibres is made in the industry. Man-made fibre production has been expanded both as a consequence of tax reductions and new capacity. Capacity in the formal weaving sector has also been increased. "Broad banding" has been allowed in the synthetic fibre industry covering polyester, nylon, polyproplene and also for the synthetic filament industry to cover industrial yarns and tyre cords. Many outdated textile control orders and regulations have been rescinded and a single and comprehensive textile control order has been issued. In order to check unauthorized growth of powerloom sector, powerlooms are being registered. To maintain the unique role of handlooms, production of few textile items has been exclusively reserved for handloom sector, and other policy measures have been taken to strengthen the sector. Enterprises with performance problems are monitored, with a Nodal Agency working out rehabilitation packages. A Rs.7.5 billion Textile Modernization Fund has been created, and a Rehabilitation Fund for textile workers losing employment in plants that have to close down. Measures have also been taken to strengthen the wool and silk industries. The impact of these measures has become clearly visible in the growth of textile production.

(c) INDONESIA

1. Introduction: The present industrial development context

The development strategy for the manufacturing sector during the Indonesian Fourth Five-Year Plan period (FYP-IV, 1984-1989) tries to find answers to the following main problems which have affected the sector:

- the long drawn international economic slow down;
- protectionism of industrialized countries;
- increasing competition from other developing countries;
- decreased availability of foreign exchange as a consequence of falling oil earnings;
- technological backwardness and aged equipment.

Industries have been given different overall tasks, depending on their basic characteristics. While capital-intensive basic industries are expected to lay the foundations for (industrial) growth and a strengthening of the country's industrial structure, down stream and small-scale industries are to be the major creators of employment and to help distribute growth.

Long-term strategy is laid down in the National Industrial Development Outline (NIDO). It foresees an industrial take-off from the mid-1990s onwards, based on capital goods and electronics industries; a strong SSI sector and export-orientation will also be characteristics of Indonesia's manufacturing industry. Concomitant with the development of industry, the industrial R&D and other infrastructure is to be expanded, and skills and entrepreneurship are to be stimulated. At the administrative level, the performance of the Ministry of Industry is to be improved, and investment, liciencing and trade regulations are to be liberalized.

2. Major characteristics of the textile and garments industry

The textile industry has a long tradition in Indonesia. Much of it still has a small-scale, handicraft character, such as batik production. In fact, when looking at the number of enterprises alone, small-scale operations still predominate. Fibre making is the single exception.

Although modern large-scale industries have been operating for several decades now, it was not until the 1970s that planning of further development took on substantial dimensions. Table 6.5 shows the size of the textile and garments industry in the mid-1980s.

Table 6.5. Indonesia - Textile and garments industry, 1985

Industry	Number of mills	Number of machines	Capacity per year
Fibre making	12	12 units	227,000 ton
Spinning	88	2,525,326 spindles	313,000 ton
Weaving	959	107,313 looms	2,986 M meters
Knitting	392	14,682 m/c	77,000 ton
Garment making	377	80,333 m/c	33 M dozens

Part of the industry's input is produced domestically. Rayon pulp, raw cotton, acrylic and wool fibre, however, are imported; in the case of raw cotton, there is also some domestic production. Machinery is, on the whole imported, with East Asia and Europe as the main suppliers. Obsolence is a major problem.

The industry employs some 1.5 million people. Of these approximately 700,000 work in small-scale enterprises. Labour training is done on-the-job, through in-firm training courses and in vocational schools. Foreign experts are regularly employed to transfer skills and knowledge to the workforce. Although production is mainly for the domestic market, Indonesia became a

textile exporter in the late 1970s. The main items are fabrics and garments. The main buyer is the USA. Other major importers of Indonesia textiles include Canada, the EEC, the Arab region and Australia. Exports to South and East Asian countries are small. Table 6.6 shows exports in recent years.

Table 6.6. Indonesia - Exports of fabrics and garments, 1984-87

Item	Fabrics and others		Garments	
Year	Volum (tons)	Value (US $)	Volume (tons)	Value (US $)
1984	53,973.18	222,673.00	27,782.66	256,610.03
1985	63,567.26	248,942.38	33,839.62	294,491.30
1986	74,643.14	317,472.33	51,840.54	476,749.74
1987	89,000.00	478,000.00	61,000.00	733,000.00

3. Changes in the textile and garment industry's environment

Developing country textile exports are more and more faced with quota's set by industrialized importers. In this respect, Indonesia's exports are no exception. The country hopes to counter such measures by improving the quality and variety of its export products, and to improve the accompanying services. On the other hand, a growing internal market is available. The Indonesia population now numbers some 170 million, and per capita textile consumption is rising. Estimated doemstic demand growth during the coming years is 7.5 per cent annually. Moreover, there is a growing demand for better quality textiles.

In improving its portion in export markets and expanding its supply to the domestic market, Indonesia intends to rely partly on foreign investors. The availability of cheap labour and the liberalized investment regulations are expected to be major assets in the country's attempts to attract more foreign investment.

4. Policies and support measures

The Fourth Five-Year Plan recognizes the development potential of the textile industry and its contribution to the solution of the key problem of unemployment. To maximize the industry's contribution to development goals, a textile development programme has been formulated. Its objective, the strengthening of the industry's competitive power, is to be reached through:

- improved technical equipment and technologies;
- improved managements;
- improved labour skills;
- improvements in the domestic environment in which the industry operates.

Also, the linkages between industries in the subsector are to be improved. Subcontracting, among others, is to be stimulated.

Government support is given through various agencies. The key institution is the Ministry of Industry, which is engaged in investment promotion (together with the Investment Co-ordination Board), training, export promotion and information. The Ministry of Trade also plays an important role in the latter two. Furthermore, the Ministry of Foreign Affairs supports export promotion activities, and the Central Bureau of Statistics is involved in improving information flows to the industry. The National Board for Technological Research and Development plays a role in the upgrading of skills; universities offer courses in textile technology.

Co-operation among industries also helps to improve the subsector's performance. Industrialists co-operate through four associations: the fibre-making, spinning, fabric-making and garment associations. Each of these covers those aspects of the textile development programme that have a bearing on the particular industry's activities. The associations join forces with Government agencies in the preparation and execution of promotion programmes.

5. Proposals for future policies and measures to stimulate the textile industry

The following items might be considered in the implementation of the textile programme:

Fibre supply:	- encouragement of domestic cotton production to reduce imports;
	- modernization and expansion of man-made fibre capacity, taking account of growing demand for diversified, high-quality products.
Spinning/weaving knitting/finishing	- replacing old machinery; - increasing capacity for fashion-oriented production; - supporting the expansion of viable small-scale units to arrive at more economically optional size.
Spinning	- more attention tc waste utilization.

(d) MALAYSIA

Structural adjustment in the Malaysian economy - the textile and garments sector

1. Introduction

Up to the 1970s the Malaysian economy was characterised by its heavy dependence on a few primary agricultural commodities. In 1970, the share of value added of the agricultural sector in GDP was 30.8 per cent while that of the manufacturing sector stood at only 13.4 per cent. Mining and construction accounted for 6.3 per cent and 3.9 per cent respectively. The services sector (wholesale and retail trade, finance and government services) was responsible for about 41.9 per cent of GDP. During the period 1970-85, the country's production pattern underwent substantial structural transformation. The relative shares of the major sectors changed substantially with the manufacturing sector emerging as the fastest growing sector of the economy .

During the period 1970-80, the economy grew at an average rate of 7.8 per cent per annum. Agriculture grew at around 4.3 per cent, but the manufacturing, construction and services sectors registered average growth rates of 12.5 per cent, 9.6 per cent and 8.6 per cent per annum respectively. Thus by 1980, the relative shares of the major sectors in the GDP as compared to the situation in 1970 stood as follows:

	1970 (per cent)	1980 (per cent)
Agriculture	30.8	22.2
Manufacturing	13.4	20.5
Construction	3.9	4.5
Services	41.9	45.1
Mining & Quarrying	6.3	4.6
Others	3.8	3.1

During its early expansion, manufacturing largely consisted of import substitution and simple assembly operations. Other manufacturing activities included rubber and palmoil processing, sawmilling and petroleum refinery. The sector received a strong boost when EPZ production was introduced. Industries locating in EPZs mainly consisted of electronics and electrical products and textiles and garments producers. Malaysia became a major semiconductor exporter. From 1980 onwards, the Malaysian economy expanded at a much slower rate. Among the major factors behind this development were the prolonged world economic recession and the emergence of domestic structural constraints. GDP growth slowed down to 5.8 per cent per annum in real terms during the period 1980-85. Despite some improvements in the economy in 1984 when growth registered 7.6 per cent, the following year saw only a 2.8 per cent growth due to the decline in manufacturing and mining output. By the end of 1985, the relative share of the manufacturing sector in the GDP had declined from 20.5 per cent in 1980 to around 19.1 per cent though, the manufacturing sector had superseded agriculture in terms of its contribution to GDP.

2. The Malaysian textile industry - current status

The textile industry dates back to the 1950s. It is now a major industry branch providing employment for 49,000persons. In 1985, 283 large textile companies were active, with a total paid-up capital of M$ 0.7 billion. Altogether, the sector comprises well over 3000 establishments. In spite of the absence of domestic raw materials, the industry now encompasses a broad range of activities ranging from polymerization, spinning, texturising of man-made fibre yarn, fabrics to making various types of garments. The industry also produces a wide range of textile articles and made-up textile goods. At present, 16 mills are involved in spinning. Of these, 10 also undertake weaving, knitting and finishing. Major types of yarn produced are cotton and man made fibre blends. The domestic market is substantially dependent on imports of textile fibres, woven fabrics, made-up garments and various types of fabrics and yarn. The import of man-made fibres in 1986 was M$64.9 million while imports of textile yarn, fabrics, made-up articles and related products totalled M$923.1 million. These comprised mainly of woven fabrics of man-made fibres (M$289.4 million), woven cotton fabrics (M$211.8 million), knitted or crocheted fabrics (M$167.6 million) and textile yarn

(M$96.3 million). Imports of clothing in 1986 amounted to M$81.6 million. In spite of protectionism and restrictive quotas, textile and clothing have remained important exports. Total exports of textile fibres, yarn, fabrics, made-up products and apparel amounted to M$1,659.11 million in 1986. Articles of apparel and clothing accessoires amounted to M$1,057.64 million or 63.7 per cent of textile exports in 1986. Exports of woven fabrics of man-made fibres amounted to M$170.4 million, woven cotton fabrics M$153.1 million and textile yarn M$147 million in 1986.

3. Problems and prospects

Although no clear export growth strategy was formulated for the textile and clothing industry, its importance as an exporter has grown. Bearing in mind the competitiveness of the trade and the international trade scenario, the Government has decided to take a rather cautious approach in encouraging the future development of the industry. The sector has been identified by the Industrial Master Plan as having development potential. The policy implications are:

(i) to exploit and further improve the productivity (both labour and machinery) of the sector without committing excessive additional capital investment i.e. consolidation and rationalisations;

(ii) bringing in more up-to-date technology to improve productivity and ability to adapt or quickly switch production lines;

(iii) moving into higher value-added activities and niche markets through the use of famous brandnames;

(iv) more importantly, to increase linkages/complementation between the Free Trade Zone manufacturers and related support services and suppliers in the non-Free Trade Zone areas; and

(v) the upgrading of skills and training and increasing R & D and enhancing design capabilities for up-market products.

Finally, the Government will have to tackle the difficult issues of international trade in textiles, and of helping to bring about a more liberal regime in world trade for these products. Such efforts will have to be undertaken both on a bilateral basis as well as through collective action of the exporting countries.

(e) PHILIPPINES

Industrial policy and structural adjustments in the Philippine textile and garments industry

1. General introduction

In an overall sluggish economy, the Philippine manufacturing sector has been among the weakest performers. High protection rates and inappropriate, highly capital intensive investments have been negative characteristics of the

sector in the recent past. Manufacturing exports grew rapidly during the late 1970s, but these mainly consisted of textiles and semiconductors from EPZs, with few production links to the domestic economy.

The Government has initiated institutional and policy reforms to achieve a restructuring of the Philippine industry. Efforts are made to promote industries in rural areas and to improve the manufacturing exports base. The latter includes marketing/promotional and training activities, technology and export quality upgrading, tax reductions and financial support schemes. The implementation of the improvements will benefit from the country's relatively high educational levels and good contacts with other parts of the world, making it possible both to quickly acquire and integrate new know-how and to respond to market changes.

The most important policies for industrial restructuring are those implemented and administred by the Board of Investments. A major policy document, the 1987 Omnibus Investment Code outlines the investment regulations and the incentives offered. The main features of the Code are:

- alignment of incentive schemes with other ASEAN countries;
- incentives for labour-intensive industries;
- income tax holidays for enterprises engaged in preferred investment areas;
- representation of the private sector on the Board of Investments.

2. Restructuring of the textile and garments industry

2.1 Growth and structure of the industry

Modern textile and garments manufacturing received a strong boost with the introduction of the 1961 Embroidery Act, which allowed raw material imports free of tax and duties and contracts with foreign principals to process these materials on a consignment basis. In combination with the low wage rates, this attracted a large number of US firms producing for export markets.

Further incentives were provided by the 1972 Export Processing Zone Act and the 1973 Export Incentives Act. These again mainly attracted US firms. The average annual growth rate of the industry rose to 25 per cent during the 1970s.

At present, an estimated 30,000 establishments are found in the garment industry alone, including cottage-type units. The number of recorded employees is 150,000; the actual number may be close to 500,000. Only some 1,000 firms are registered as exporters. Although subcontracting for exporters is common, the majority of enterprises is therefore oriented towards the domestic market. Within the group of 1,000, 20 firms account for 40 per cent of the country's garment exports. Most of these employ more than 1,000 persons.

Until recently, alomst all the inputs for the garment industry (yarn, woven textiles) were imported. Incentives provided under the 1981 Omnibus Investments Code and the initiation of the 1982 Textile Modernization Programme have had a certain positive impact on domestic milling, but the industry can substitute at most 20 per cent of the textile import volume of the garments industry. As it is, the textile millers have been hesitant to apply for credit made available under the Programme because of the foreign exchange rate, the loan - made available by the World Bank being dollar-denominated.

Modern equipment is relatively rare in the garment factories. Almost 70 per cent consists of sewing machines. The imported textiles have already been partly prepared, patterns being provided by the foreign principals; only cutting, stitching, trimming and packaging take place in the Philippines. The need for very sophisticated machinery is thus as yet small. Improved work methods and material flows have been the most important ways of improving production. Only among knitwear producers is modern equipment now common.

To monitor the rapidly growing textile and garment export industries, the Garment and Textile Export Board (GTEB) was created in 1979. It oversees the administration and allocation of quotas, initiates control measures, issues import and export licences and negotiates with importing countries. Recently, it has also provided stimuli to producers to enter new product and market areas and has conducted seminars and training courses for the industry.

2.2 Export performance

Export growth in the industry was fast during the 1975-1980 period. Since 1980, several years of low growth have occurred, and overall the growth rate is sinking. The US is the largest export market, (see Table 6.7), with the EEC coming second; within the EEC, the Federal Republic of Germany accounted for almost 40 per cent of Philippine clothing exports in 1985. Almost 84 per cent of the exports went to quota-imposing countries.

During 1986 and subsequent years, a number of attempts have been made in the US to restrict garments and textiles imports. Although legislation in this matter has so far not been implemented, US buyers have been influenced by the possibility of import restrictions. The Philippine Government has therefore started exploring other foreign markets, especially those of non-quota countries (e.g. Japan, Australia, Middle East countries).

The Philippine garment industry has mainly exported non-seasonal, low fashion products. With the increasing emphasis on seasonal change in fashions in US and EEC markets, production for these markets is threatened. This may lead to a reduction in US investment which, however, may be replaced by East Asian investment using the country's cheap labour force; the possibilities are e.g. explored by Hong Kong manufacturers.

On the whole, the industry - dominated as it is by subsidiaries of overseas firms - has not aggressively explored its own market niches. Principals generally provide designs, and some firms rely entirely on detailed buyer's specifications. There is, however, an increasing awareness among domestic entrepreneurs to produce more fashionable goods. A first stop in

Table 6.7. Philippine garment exports (1970-1986)
(in million US dollars)

Year	Philippine garment exports	% increase	Percentage to USA	EEC
1975	107.0	-		
1976	184.6	72.5		
1977	249.6	35.6		
1978	326.3	30.7		
1979	464.2	42.3		
1980	500.0	7.8	49	
1981	685.2	37.0	50	23
1982	549.0	19.9	51	
1983	566.1	3.1	61	
1984	646.8	14.3	67	16
1985	660.1	2.1	69	14
1986	802.9	21.6	62	17
1987 (tent.) as of Aug. 21	731.3			

Source: Foreign Statistics of the Philippines and GTEB.

this direction has been the formation of small design teams studying current overseas fashions, adapting these designs by adding specifically Philippines elements, and thus creating a unique product.

3. Recent policies and support measures

The 1982 Textile Modernization Programme having proved unsuccessful on the whole, the Advance Tax Credit Scheme was introduced in 1985. This provided more efficient incentives to domestic textile producers supplying bonded warehouses, as the incentive is available on delivery of the goods to the use. Other incentives, applying to the manufacturing sector in general, include tax exemption on imports and tax drawbacks on domestic purchases.

Institutions providing assistance to production improvements include the Philippine Textile Research Institute, the National Manpower Youth Council which provides training and a recent trade, export inspection and exhibition training programme to be carried out in co-operation with the Japanese Government.

Marketing information and assistance for both potential and existing exporters and foreign buyers is being provided by the Bureau of Foreign Trade. Promotion of Philippine exports takes place by the Centre for International Trade Expositions and Missions (CITEM). These agencies co-ordinate closely with the GTEB on matters and activities relating to garments and textiles. Furthermore, small manufacturers who are not capable of exporting on their own are offered marketing services by the Philippine International Trading Corporation (PITC).

Under the new Government, subsector committees have been organized. In the garments and textile sectors, these co-operate with GTEB to achieve:

- optimum efficiency;
- maximum quota utilization;
- penetration of new (non-quota) markets.

4. Suggestions for future policies

The major bottlenecks to further development of the textile and garment industry are:

- non-availability/scarcity of inputs;
- import restrictions on essential goods;
- textile smuggling;
- high financing costs;
- labour problems;
- market access;
- domestic political instability.

Before these can be tackled, a better co-ordination of the efforts of various Government agencies will be needed. Although GTEB has consistently tried to ensure the growth of the industry, its resources are badly stretched, and it has sometimes been faced with the problem of having to formulate conflicting solution to problems.

A crucial problem is the rehabilitation of the textile industry. If the garment industry's domestic input problems are to be solved, the performance of this industry must be strongly increased, partly by forcing it to become more competitive through reducing protection.

Another important issue is the consolidation of small enterprises in larger, more competitive units. In spite of their large numbers, domestic exporters do not dominate exports, because most of the firms are very small. With Government support, it should be possible to create a stronger framework for successful co-operation among producers.

Low-cost finance will also be essential for further growth of the industry, especially for the further development of the many small- and medium-scale units. For exporters, easier access to working capital finance would be necessary.

Finally, overseas buyers and investors have been reluctant to increase their involvement because of political instability. The goodwill that the country has recently acquired should be capitalized upon, and every effort should be made to further stabilize the political situation.

To summarize, the development of a policy framework for the garments and textile industry should take into consideration the following factors:

(a) A good balance of the regulatory functions and the promotional activities of GTEB and other government agencies;

(b) Stronger linkages between government inter-agencies and industry to address problem areas;

(c) Integration or consolidation of smaller units in the industry to achieve economies of scale;

(d) Rehabilitation of the textile industry/improved availability of inputs;

(e) Availability of financing at low cost;

(f) Appropriate government support in marketing and promotion, technical development, and technological advancement.

(f) SRI LANKA

1. Introduction

When the industrialization of Sri Lanka started in the 1960s, it mostly had an import-substituting character. The Government took the initiative to establish large-scale industries, including textiles, as the private sector was reluctant to invest in manufacturing. The continuously unfavourable balance of payments resulted in a system of strict economic controls, especially in the field of exchange transactions. However, with a new government being elected in 1977, the economy was liberalized, with a virtually free inflow and outflow of goods and payments. As a result, there was a surge in industrial development, especially in the field of textiles and garments, which now occupy the foremost place in the industrial structure of Sri Lanka.

This essay explores the development, problems and prospects of the textile and garments industries, and reviews the relevant Government policies and measures.

2. The textiles sector

2.1 Growth and structure of the sector

The National Textile Corporation (NTC) was established by the Sri Lankan Government in the 1960s to develop a modern domestic textile industry. It commissioned three integrated mills and two spinning mills, and in addition established 70 dispersed powerloom workshops were attached to a sizing plant. Moreover, 12 powerloom workshops were established by co-operatives in villages, and the private sector built four weaving and finishing and two spinning mills. The handloom industry, representing traditional textile manufacturing, was also expanded, partly or a co-operative basis, and with Government support. In the absence of sufficient foreign exchange, NTC had to acquire machinery by whatever means available, which resulted in heterogeneously equipped factories with consequent serious opeational problems. These machines are in part obsolescent now: out of the 295,000 spindles in these plants, 70,000 are more than 15 years old; some 5,500 out of 8,300 looms are of the same vintage. Only one NTC mill disposes of machinery to finished blended fabrics, a serious drawback given the present demand in

the textile market. Total production capacity in the sector is 14,320 tonnes in the modern spinning mills and 191.3 million metres in the modern weaving mills.

The handloom sector consisted of 115,000 looms in 1977, of which however only 23,000 were working at full capacity, owing to a shortage of foreign exchange for yarn purchases. The liberalization of the markets in 1977 dealt a severe blow to the handloom sector, 80 per cent of the operating looms ceasing production. With Government support, the industry is being revived, concentrating on market niches for products such as household linen and silk products.

The textile and garment industries provide employment to about 250,000 workers, especially women of the younger age group, who, on a general calculation, are supporting around one million persons in the country, which emphasises the importance of these two sectors in the economy. One feature of the Sri Lankan worker is that, given adequate training, his or her productivity is higher that of many developing countries. This is principally because Sri Lanka has a literacy rate of 96 per cent, enabling the worker to grasp the finer aspects of training and production faster than his counterpart elsewhere.

Of the raw materials used the major part, for reasons of technical constraints in the manufacture of fabrics, consists of cotton yarn. Only about 5 per cent of the raw cotton used for the spinning of cotton yarn is grown in the country, the balance being imported. The dyes and chemicals as well as spare parts necessary for the industry, are all imported from abroad.

The market for textiles is mainly domestic, the output being largely sold to garment producers serving domestic or export markets. Due to the wide variety of ethnic groupings, there is a strongly differentiated demand for fabrics in the country, and therefore a wide range of textiles is produced. Annual demand on the domestic market (for all types of fabric) is approximately 176 million meters, with cotton fabric dominating.

2.2 The textile industry and the international evironment

As Sri Lanka does not export textiles on a significant sacle, the protectionism of developed countries has not been a problem so far. Silk exports are gaining in importance, but silk is not subject to quota under the Multi Fibre Agreement (MFA), and therefore the industry are not likely to suffer from restrictions.

However, demand and technology changes have an impact on both production for the local market and the exporting garment industries, with repercussions for the textile manufacturers. Demand and technological developments in the textile industry over the last four decades is characterized by the following aspects:

- There is a shifting demand in developing countries from cotton fabrics to blended and filament yarn fabrics, the reverse process being seen in developed countries, where demand has shifted from man made fibres to natural fibres. Markets in developed countries more and more insist on fabrics of high quality;

- Higher machine speeds and more efficient raw material utilization lead to higher output and reduced cost;

- Automation of production has the same consequences.

Sri Lanka is now faced with a double problem: in order to remain competitive, the textile industry would have to be drastically modernized, an operation which would demand a considerable amount of scarce foreign exchange; a modernized industry would, however, need far less employees, thus contributing to the already high unemployment levels.

2.3 Government support for the textile industry

On the basis of a report on the textile industry by the UK Shirley institute, the Government has formulated a series of measures to modernize the industry, and to bring it in line with the textile industry in other countries. The handloom industry is to give high priority to the handloom sector, to underline its importance as a rural employer and income generator. Measures include

- support to the reopening of handloom workshops whose present closure is a consequence of circumstances rather than a lack of viability;

- special emphasis to the development of the silk industry, which has a high export potential;

- the operation of Design Centres, and distributing information on design trends in developed country markets.

In the larger-scale industries, private management is to take over from the public managers. The lack of incentives for efficient and profitable operations and the appointment of management staff on political rather than professional criteria[1/] had by 1977 created a situation where most NTC enterprises were operating at a loss, the accumulated loss by that year being Rs.400 million.

As part of the post-1977 liberalization policies, NTC mills were entrusted to British and Indian managers, although the Government retained ownership. The managers were given full freedom in daily operations, supply procurement and sales. Out of the 70 powerloom workshops, 60 were sold to the private sector. These measures were successful. The NTC mills' 1981 loss of Rs.59.1 million was turned into a net profit of Rs.134 million in 1986 (January-September period only). Average earnings per employee almost doubled. The powerloom workshop are now making a profit as well. These experiments are now to be extended to other public sector enterprises.

The role of Government is now being gradually restricted to regulatory and service functions rather than to direct operations. In the field of textiles, it provides the following services to improve human resources and technical performance in the industry:

1/ A 1981 survey showed that 94 per cent of lower and middle management had never received textile industry specific training .

- Conducting training courses and providing advice and information to managers on technical and management issues through the Textile Training and Services Centre;

- Technical services to the handloom industry through the Department of Textile Industries; these include technical advice through a field staff and operating textile schools which provide a two-year training programme.

3. The garment industry

3.1 Growth and structure of the sector

Modern factory production began to emerge during the 1950s, and in the 1960s the industry began to export. The volume of exports was Rs. 5 million in 1971. In spite of the absence of incentives, rigid trade regulations, foreign exchange shortages restricting the purchase of essential inputs and restrictions on foreign travel which made it difficult to explore markets, exports grew to Rs.143 million in 1977.

As the industry was almost exclusively privately owned from the beginning, response to the 1977 liberalization was fast: exports grew to Rs. 3.0 billion in 1981, and in 1987 exports were expected to surpass Rs. 10.0 billion. At present, some 350 export-oriented units are found in the industry. Most of the enterprises are medium-size, using 100-200 sewing machines. Total employment is about 175,000, mostly low-skilled workers. The problem of obsolescence which is so prominent in the textile industry does not play a significant role in garments. The great expansion having begun after 1977, most of the equipment is modern. The much lower per unit cost has also made it possible to buy large numbers of identical equipment (mainly from Japan), and this all combines to reduce operational problems and to enhance productivity.

While in the early stages of the industry, simple items such as shirts, jeans and jackets were made, the range of products has widened to about 40. The provision of designs, patterns and colour schemes by the overseas buyers kept down costs in the early export growth stage. Quality is maintained in various ways. Workers and staff are trained to observe high quality standards during training courses at the Clothing Training Institute (CITI), set up with World Bank/IDA assistance (basic skills for the industry are acquired at private training schools). Export licences are only given by the Ministry of Textile Industries one year after a new applicant for a garment factory licence has been registered; in the meantime, his activities are restricted to subcontracts for established exporters, and the export license is subject to an evaluation of the performance during that year. In addition, buyers maintain agents with a staff of quality controllers who inspect the production of orders. Most of the inputs used in the industry are imported. It is, however, hoped that the textile industry rehabilitation programme (see above) will lead to a better domestic resource base for the garment industry.

3.2 The ga t industry in the international evironment

The most important overseas market for Sri Lankan garments is the US, which absorbs 65-70 per cent of the exports; the EEC, Canada and the Scandinavian countries follow. The rapid growth of Sri Lankan exports outlined above, however, was causing problems for domestic producers in these countries, and by 1980 the US and a member of European countries had imposed quota on Sri Lankan imports. These quota were imposed under MFA (now extented to 1991). The main purpose of MFA is to avoid disruption of developed country markets by substantial imports of textiles at prices significantly below those prevailing for similar domestic goods. In consultations with the exporting country, a quantity is then agreed upon which may be imported.

Although MFA has reduced exports of some established developing country exporters, it enables other producers to exploit the market openings which resulted from the fact that some countries exhausted their quota - provided that these producers were capable of supplying identical or better quality goods at the same (or lower) prices.

The establishment of quota has forced manufacturers to switch to non-quota products. Increasing exports of these, however, lead to new quotas. At present, 29 Sri Lankan products are exported under the quota system. It is obvious that - apart from the loss in export earnings caused by the imposition of quota - the expanding system makes it very difficult for producers to engage in long-term production planning. In the US, maximum growth rates have, moreove been imposed for a number of imports.

The way to circumvent these international market problems is to continuously improve quality and skills and reduce costs in order to remain competitive with the growing number of market entrants. Garment production not being very capital-intensive, market entrance is not difficult, and Sri Lanka will have to be continuously on the alert to formulate proper reactions to international market developments.

3.4 Government support for the garment industry

To save foreign exchange and to raise the share of domestic value added in garment exports, the Government is giving high priority to integrating the industry with the domestic textiles industry. Two of the large NTC textile mills already drastically increased their sales to domestic garment producers in recent years, and the rehabilitation of the industries should further improve the garment industry's domestic resource base.

The Government has made a number of incentives available for both textile and garment industries, as well as for other industries:

- companies engaged in export-oriented textiles and garment projects are eligible for a 5 year tax holiday on export profits;
- at the end of this 5 year tax holiday, a further period of a 10 year half tax holiday is available for companies which manufacture and export high value added products;
- concessionary duty rates of import of machines are available for companies registered by the Ministry of Textile Industries for local manufacture and subcontracting for exports;

- duty free import of machinery and equipment is available for companies which export 50 per cent or more of tneir products;

- rebate of customs duties is given on imported raw materials used for export production;

- a bonded warehouse scheme enables exporters to produce without having to provide bank guarantees for raw material imports, once they have provided guarantees for the bonded warehouse. This greately eases liquidity positions;

- rupee finance at concessionary rates is available from local development finance institutions;

- free remittance of profits and dividents is permitted;

- permission is given to employ expatriate technical and managerial staff.

4. Restructuring of the textile and garment industries

As in the future the textile and garment industries are to co-operate more closely, a restructuring programme for both of them has been formulated by the Sri Lankan Government. It contains the following elements:

- Apart from the present rehabilitation of the textile industry, additional capacity embodying the latest technologies will be installed to provide the garment industry with more and better inputs;

- Bodies such as the Textile Training and Services Institute, and the Clothing Industry Training Institute are to upgrade labour and management skills textile and garment factories to raise productivity as well as to maintain quality;

- Efforts are being made to improve product development. The fashion design profession is stimulated. The mills of the National Textile Corporation have contributed to this trend by organizing fashion shows, fashion designers contests etc. As a result, new creations and dress designs are now being developed. This effort will not only benefit the country if the present market trend undergoes changes; it will also attract buyers to purchase new items.

- Exporters are encouraged to concentrate on quality products. Quota represent a quantitative problem; attracting buyers who are willing to pay a higher price for a special product may neutralize their effect.

- Every effort is to be made to supply cheap working capital if the products of a country are to be competitive. This is all the more necessary in view of the fact that direct export subsidies, or a multiple exchange range, are regarded as unfair in international trade;

- Shipping and customs procedures are to be simplified to lower export costs and speed up deliveries.

(g) THAILAND

1. Introduction: The Thai manufacturing sector

Although the industrial sector is relatively small, comprising 13 per cent of the labour force in Thailand, it has grown more rapidly than other sectors of the Thai economy. At present, approximately one-half of Thai export earnings is provided by the sector, as compared to some 30 per cent in 1977. Most of the industry is concentrated in Bangkok or the area surrounding the capital, but several area development programmes are at present being implemented, among others, in the south of the country, to achieve a better distribution of manufacturing activities throughout the country. In the early development stages, industry mainly had an import-substituting character. Over the past few years however export industries have come to lead the sector's development.

Rapid growth industries are textiles and apparel, jewellery, integrated circuits, tapioca flour and sugar. Other major industries include car assembly, motocycles, TV, construction materials, batteries, furniture, carpets, medical supplies and electrical goods. New industries include zinc electrolysis and petrochemicals. Thailand has established a wide range of educational and vocational training facilities to supply the manufacturing sector with the skilled labour and higher level technicians and managers needed.

2. The textile industries

2.1. General overview

The textile industry employed 620.000 persons in 1985 (up from 213.000 in 1975) or 22 per cent of the manufacturing labour force (see Table 6.8). Its share in total manufacturing exports in 1985 was 24 billion baht, or over 25 per cent of manufacturing exports in that year. Thailand has had a trade surplus in textiles since 1975. The growth of the sector is due to:

- competitive produces and low labour costs;
- low value of the baht;
- political stability;
- expansion of world markets.

The most important imports are raw cotton, man-made fibres and man-made fabrics; there is a certain tendency for the higher value added imports to stagnate during the 1980s. Exports are dominated by garments, whose value rose from almost 7 billion bahts in 1981 to 14.7 billion bants in 1985. Other important exports are cotton fabrics, man-made yarn and man-made fabrics. Garments are not only the major export category; it is also the fastest grower, and as such a main factor in the rapid growth of the trade surplus (from 5.4 billion baht to 13.7 billion bahts) during the 1981-1985 period. The quick growth of exports notwithstanding, some 70 per cent of the industry's production was consumed domestically in 1985.

Table 6.8. General background data on the textile and garments industry (1985) production and trade

Total production value		80 billion baht
Total exports		24 billion baht
Total imports		10 billion baht
Production units and capacity		units
Capacity Fibre (synth.)	6	140,000 (ton/year)
Polyester	3	102,000 (ton/year)
Nylon	2	16,800 (")
Rayon	1	19,200 (")
Spinning mills	60	230,000 (")
Weaving mills	>500	2,000 (million sq.yd./year)
Knitting mills	>400	550 (million sq.yd./year)
Finishing mills	>300	-
Garment fact.	>1000	800 (million pieces/year)
Employment		
Textiles		120,000
Garments		500,000

2.2. Cotton and man-made fibres

Although man-made fibres are predominant, cotton fibre still plays a role in the Thai textile industry. As locally produced raw cotton is of low quality, 80 per cent of total industrial consumption is at present imported. Efforts are being made to improve both the quality and yield of cotton, but increasing domestic production will depend on the opportunity cost of land use. With regard to balance of payments effects, the difference between importing cotton or man-made fibres is not significant. Foreign capital has played a key role in establishing the modern textile industries producing man-made fibres and blends. As Table 1 shows, there are only 6 man-made fibre manufacturers in the country, which cover most of the demand. The factories produce polyester, nylon and rayon.

2.3. Spinning and weaving

Spinning is concentrated in 60 plants with a total number of 2 million spindles. Only 9 plants have a size of below 10 thousand spindles, which is uneconomical by present-day standards. The total capacity of the Thai industry is high by Asian standards, and equipment is modern. In the synthetics sector 27 plants operate with 317 texturing machines and 294 high twisting machines. Most of these plants are integrated with knitting operations. The spinning plants are generally integrated with weaving. Weaving takes place in 62 modern factories with 30,000 automatic looms and some 450 small and medium scale units operating 42,000 automatic looms of older types and power looms. These are thought to employ two thirds of the total number employed in spinning and weaving. While the latter units mainly serve the domestic market, the modern large-scale factories serve both domestic and export markets. The small and medium-scale plants are not integrated with other operations: they purchase dyed yarn and no finishing of this end product takes place. The introduction of pollution control measures

has especially affected these overwhelmingly Bangkok-located units, which are faced with a choice between implementing pollution control measures and relocation outside the urban area.

2.4 Knitting

The knitting industry is also divided in a modern large-scale and a small-scale category. The large-scale category compises 71 plants with 3,000 circular knitting machines and 2,500 flat knitting machines. In the small scale sector, some 36,000 machines are thought to be used, of which 80 per cent are flat knitting machines. The knitting industry also produces a large number of fishing nets. It is believed that the knitting industry employs 40,000 people. This is probably much lower than the real number, as many of the small-scale units are not registered.

2.5 The garment industry

In the garment industry, a group of 57 large plants with 24,000 sewing machines is found side-by-side with some 1,000 small and medium-size plants using 180,000 sewing machines. As pointed out above, the garment industry is a major exporter; it is very efficient and highly competitive in international markets. Computerized machinery is now being introduced. It has been discussed whether garment manufacturing should be integrated with spinning and weaving plants. Although there are undoubted advantages in doing so in the case of knitting mills, the advantages in the case of weaving are less clear. The activities are completely different from the point of view of production technology and management. A second point is the frequent need to adjust to changes in fashion. This demands a great ability for varying styles and designs. Given the much smaller scale of operations, it is unlikely that a garment production unit would be big enough to absorb the whole production of a weaving unit (production of mass consumer goods such as jeans may be an exeption). Moreover, it would still need supplies from other producers.

2.6. Concluding remark

While the domestic market is likely to remain a major customer, the Thai textile and garment sector can further strengthen its portion in foreign market by keeping abreast of global developments within industry. The present orientation towards the manufacturing of low-priced, rather basic textile goods would have to be replaced by a gradual shift to higher value added goods and a wider product range. At the same time, the still rather passive marketing attitude will have to be replaced by more active involvement in overseas markets, with closer attention to (changes in) consumer demand. This would imply the establishment of facilities for design and fashion and trade mark verification. At the same time, improvements in present levels of garment technology and trade promotion support would be needed. Human resource development has been identified as the key element in this change in the structure of the textile and garment industry; it would also make more skills available for the segments of the industry serving the domestic market. Although training facilities are available for a range of textile-related skills, these may have to be expanded; training facilities for textile engineers, such as exist elsewhere in Asia, would also have to be established

in Thailand. In the long term, the establishment of a computer engineer training facility would also benefit the textile and garment industry, as automation is likely to increase in the future. Last not least, the polic :s and measures should be formulated as an integral part of overall policies to stimulate economic development.

CHAPTER VII

Summary of conclusions and recommendations of the seminar on industrial policy and structural adjustment organized by KDI and UNIDO, 9-15 September 1987 at Seoul, Republic of Korea

1. KEY ISSUES IN RESTRUCTURING THE TEXTILE INDUSTRY IN ASIAN DEVELOPING COUNTRIES

In a period of rapid technological change, changing market conditions and shifting comparative advantage, the ability to respond through industrial restructuring is a crucial ingredient in successful economic performance. Industry in the developing countries of Asia has fortunately shown an ability to adjust at the company level, given a suitable government policy framework and the capability to absorb and utilize technological changes and advances. Governments have also been aware of the need to provide a supportive environment for ever-changing and flexible industrial development.

One means by which policies for industrial restructuring in Asia can be further developed is through seminars which bring together policy-makers concerned with a specific industrial sector to discuss the international trends which affect their industry, the common problems which they face and the possibilities of regional co-operation. Apart from drawing on each other's different experiences, such meetings can also help to avoid mutually incompatible policies being pursued by neighbouring countries.

In the case of the textile industry, the country case studies have identified a number of common issues and problems which confront some or all of the countries participating in the seminar.

Although different countries may be affected in different ways all the countries face the same international environment. This is characterized by the slow rate of growth of the market for textiles and clothing in industrialized countries, and the increasingly restrictive nature of the MFA in its successive protocols of extension, which limits the extent to which developing countries will be able to expand their exports to developed country markets in the future. Even exports to developed countries from small suppliers and new entrants are increasingly subject to quotas.

With limited access to developed country markets and intensified competition, it is unlikely that the textile and clothing industries will perform the same dynamic role in promoting growth in Asian developing countries in the future as they did for some countries in the past. It is necessary, therefore, to design policies exploring new ways to increase the developmental impact of the industry.

In this context it has been observed that several Asian countries which have become significant garment exporters rely heavily on imports of fabrics. As a result, the local value added of the exported garments is low. The lack of integration between the domestic textile industry and the garment exporters often a result of the higher cost and/or lower quality of domestically produced fabrics. Local value added could be raised if increasing use is made of domestic inputs; this would require not only appropriate government trade policies but also an upgrading of the domestic textile industry.

Many Asian countries have a substantial potential domestic market. Poor quality, high prices and limited variety of local products, however, tend to limit the penetration of the domestic markets by local production. Part of the market is thus liable to be lost to illegal imports if local production does not respond to these problems.

The textile and clothing industry is an important source of employment in all Asian countries. However, recent technological developments in the textile industry have made production increasingly capital-intensive. This has two effects. First, it makes modernization of the textile industry a very high cost proposition. Second, it may mean that modernization leads to substantial displacement of labour unless measures are taken to protect less efficient producers or to improve their production.

Since these producers are often small-scale operators which tend to have older equipment and lower levels of productivity special measures must be designed for such firms. The issues involved here are whether or not to develop linkages between them and the large firms, e.g. as subcontractors, or to reserve a section of the market for them as is done for handloom weavers in India.

A number of countries have felt that inadequate levels of training and skilled labour have been a constraint to the development of their textile and clothing industries. Successful industrial restructuring in the textile industry requires the development of adequate skills at all levels from higher management to operatives. Asian countries are aware of the importance of training and have been active in setting up relevant institutions.

Currently garment production for export from Asian countries is mainly on the basis of foreign designs provided by the importer. Some Asian countries have been attempting to develop their own design capabilities as a means to increasing the value added of the exported product and developing a more independent garment industry.

In several countries the high cost of working capital is seen as a factor which inhibits the growth of the textile industry by depressing profitability; ways would have to be found to remove this bottleneck.

Complicated customs and shipping procedures are also often cited as a concern. These tend to inhibit the growth of exports even where the intention is to promote exports through the provision of fiscal incentives such as drawbacks and rebates.

The development of a policy framework for the restructuring of the textile and garment industries must take full account of the future trends in world market conditions and technological development. Within this context a

framework should be defined which seeks to address each of the major issues identified above in a coherent and mutually consistent manner.

2. GUIDELINES FOR THE DEVELOPMENT OF A POLICY FRAMEWORK

The challenges facing Asian developing countries are many and varied. Thus, no single dimension can be singled out as the most important one needing attention. Rather, the development of a policy framework needs to be multidimensional. Also, the issues and problems associated with each dimension need to be addressed in a comprehensive fashion to ensure that the resulting policies and programmes are mutually supportive.

Five areas were identified as being of singular importance. This does not mean that other, more specific areas of a national nature are less important. However, it was agreed that these more specific needs can be addressed within the framework to be discussed. The five areas to be discussed are as follows:

(a) modernization
(b) quality control
(c) development of indigenous fibres
(d) labour
(e) regional co-operation

The most critical factor for the upgrading of the textile and clothing industries for both the domestic and international sectors is modernization. Modernization is viewed as involving the general upgrading of the two industries across all sectors and the specific enhancement of specific targetted sectors. It involves the introduction of both "hard" technology (e.g. plant and equipment) and "soft" technology (e.g. modern management techniques) for increasing production flexibility and efficiency, worker productivity, and quality. The specifics of a particular country's modernization programme will depend on its existing level of performance and overall economic objectives.

To ensure the eventual success of a modernization programme, certain provisions are recognized as being needed. First, modernization is not possible without finance. Thus, the interest rate structure needs to be reasonable, and loans should be made available for targetted sectors on easy terms. Second, the policies and regulations governing the import of technology need to be adjusted to ensure they are aligned with the modernization objectives. This includes incentives provided to the industries for the import of hardware, and provisions for technicians and other personnel to enter the country to install plant and equipment and train workers. Third, the policies and regulations governing the closure of existing facilities and the operation of on-going activities need to be harmonized with the modernization objectives and plans. For example, labour displacement and official approval for the closure of plants should not hamper the implementation of the modernization programme. Finally, in many countries, modernization needs to be introduced on a prioritized basis to ensure that the relevant segments of the two industries which are so critical to the country's overall economic objectives, are served and provided the funds needed. This does not mean that the upgrading of the other sectors are neglected. It is

essential that modernization be balanced so that over-capacity is not created and bottlenecks do not occur. Forward and backward linkages also need to be taken into consideration when prioritizing specific sectors for enhancement.

Apart from making quality enhancement an integral part of modernization, the enforcement of quality standards must also be promoted in both the domestic and international sectors of the two industries, especially in the organized segments.

Uniformity in national standards needs to be established. These standards logically have to be those accepted internationally. This approach would ensure higher output quality for the domestic sector, and encourage the transfer of the experience gained by the international sector to the domestic sector.

National bureaus of standards would be the most likely places to encourage, develop and eventually enforce standards. However, introduction and enforcement of national quality standards will depend on the institutional arrangements developed as part of the modernization programme.

Some countries dispose of a considerable potential for increased use of indigenous fibres; a potential for generating foreign exchange through exports of such fibres as linen, silk, and ramie could even be exploited in particular countries. Consequently, each country should investigate the possibility of developing these fibres.

Government regulations for imports of fibres used in conjunction with indigenous fibres to produce blends need to be reformulated in a way that encourages the local development of these fibres. It is also important for government regulations to be responsive to changes in both the domestic and international markets.

A key issue of a modernization programme is the role of labour in the process, and the impact of the programme of the labour force. The areas common to most countries, are:

(a) training of workers and technicians and upgrading of production, design and fashion-related skills in order to develop the pool of technicians and workers required by the programme;

(b) modification of labour laws, regulations and contracts to provide the degree of labour flexibility required to insure the success of the programme. Modification of labour laws, regulations and contracts should not result in the elimination of labour rights, but rather should take account prevailing social fabric and socila objectives of the country.

Collaboration among Asian developing countries is viewed as a critical element in the modernization of these countries. Taking into account resource constraints and increasing competitive pressures, considerable benefits can be derived through co-operation. This co-operation could cover joint approaches, the promotion of trade and the linking of the various segments through intra-region trade flows, partly on an intra-industry basis.

3. DEVELOPMENT OF THE INSTITUTIONAL INFRASTRUCTURE AND SUPPORTING SERVICES

1. Improved information systems

At the national level there is a need for improved monitoring (and dissemination) of economic and technology trends and of international development for the purposes of policy-making and corporate planning by both public and private sector enterprises. Substantive contributions and inputs to such monitoring should come, inter alia, from international organizations and private sector associations, domestic and international. Such information should be continually kept up-to-date. The monitoring should be carried out within an appropriate central institutional framework, with highest visibility and accessibility.

2. Upgrading of production capabilities

Particular attention should be given to following aspects:

(a) Improving capacity utilization in cases of unbalanced capacity through co-ordination and subcontracting systems. As a possible approach a co-operatively-owned plant with major equipment (e.g. for print finishing, steaming, texturing, etc., as observed in the Republic of Korea) might serve a number of smaller plants (as well as co-operation in packaging, shipping and some joint purchasing);

(b) Production of items according to a desired range of standards and systematic control of consistency of production according to the desired standards. This presumes availability of testing facilities in the respective plant or at some common facility (see below);

(c) Special programmes and facilities for modernization of plant and equipment and improved efficiency, e.g., through special financing schemes, such as revolving funds and technical services;

(d) Upgrading of productivity through management and technical training and provision of appropriate incentives for companies undertaking such training activities. These training activities should be designed within the framework of the policies for the textile/garment industries' future development, including training needs called for with the introduction of new technologies as well as skills upgrading and adjustment requirements for the mainly female labour forces.

3. Development of exports

Particular attention should be given to following aspects:

(a) Improved export market intelligence, through the information system referred to above, in co-operation with the country's export promotion agency;

(b) Improved product development and diversification through, for instance, activities of fashion design centres;

(c) Advice and services on plant and equipment, to improve adjustment to special market needs (e.g. widening of looms or specific finishing devices);

(d) Technological advice and R&D aiming at utilization of local fibres for special products, possibly in the context of a market 'niche' approach;

(e) Provision of pre-export services, in particular for small and medium industries (packing, shipping, financing, etc.).

4. Co-operation between government and private sector

Attention should be given to:

(a) the need to promote the establishment of effective channels for co-operation between government and the private sector at national as well as provincial/regional levels. Particular attention should be given to the prospective guiding role of industry associations to enable a genuine two-way flow of information to facilitate (i) problem solving; (ii) market development; (iii) dissemination of R and D results and technological progress; and (iv) general development of the industry as a whole (such as needs for skills upgrading, etc.).

(b) the potential of collective public/private sector financing of joint undertakings, e.g. in fields such as testing and quality certification, information services and trade promotion activities.

5. International co-operation

Special attention to international co-operation with regard to following matters was suggested for:

(a) co-operation in the exchange of information on technology and markets (internal and external to the region);

(b) co-operation in the development of mechanisms and institutions for the intra-region transfer of experience related to fibre development, product development, product design, and the development of institutions for training, R&D, fashion, and promotion;

(c) co-operation in the transfer of technology and know-how between countries;

(d) co-operation in the areas of training and skills upgrading;

(e) co-operation in enhancing intra-region trade in textile and clothing products, and in securing improved market access to and industrial co-operation with developed countries;

(f) co-operation in enhancing intra-region collaborative efforts by government and members of the two industries.

Specifically, with regard to the information systems, counterpart agencies should be in close consultation, and should exchange information. International organizations should assist developing countries in providing information and analytical inputs to the national agencies entrusted with this monitoring function. Further industrial policy and structural adjustment seminars should be organized at suitable intervals among the textile and garment producing countries in the region in view of the major importance of the textile/garment sectors to the national economies in order to shorten the time of restructuring and to bring into play the continuous changes in the international trade regimes and the technological advancements affecting the sectors' development. Wider regional participation in such future seminars would be desirable.

Annex I

KDI/UNIDO Seminar on
Industrial Policy and Structural Adjustment
9-15 September 1987, Seoul, Republic of Korea

Seminar programme

Seoul

WEDNESDAY, 9 SEPTEMBER 1987

Morning

- Opening session

- Session I (Moderator: Dr. Whang In-Joung, KDI)

  - Structural adjustment policies in the Asian developing countries - an overview (Mr. Nils Ramm-Ericson, Senior Industrial Development Officer, UNIDO)

  - ADB experience in industrial restructuring (Mr. Antonio M. Quila, Senior Development Bank Specialist, Asian Development Bank)

Afternoon

- Session II (Moderator: Dr. Pat Gunasinghe, Sri Lanka)

  - Industrial restructuring and trade policy in the Republic of Korea (Dr. Young Soo-gil, Senior Fellow, KDI)

  Session III (Moderator: Mr. C.D. Cheema, India)

  - Readjustment of development policy: Linkages between small and large industries (Dr. Lee Kyu-uck, Senior Fellow, KDI)

Evening

- Welcoming reception hosted by Dr. Koo, Bon Ho, President, Korea Development Institute

THURSDAY, 10 SEPTEMBER 1987

Morning

- Session IV (Moderator: Ms. Thelma Jover, Philippines)

- Restructuring of textile and garment industries: A global perspective (Prof. Brian Toyne, Director, Center for International Business Studies, University of South Carolina; and Mr. Nils Ramm-Ericson, Senior Industrial Development Officer, UNIDO)

- Development of textile industry in the Republic of Korea (Dr. Ahn Young Ok, President, Korea Technology Advancement Corporation)

- Brief introduction of country papers by participants

- Session V (Moderator: Mr. Haron Siraj, Malaysia)

- Promotion of heavy industry in the Republic of Korea (Dr. Kang Young-Kook, Executive Director, Daewoo Corporation).

Field trip

Afternoon

- Panwol City. Visit to Panwol Textile Printing Industry Sub-Co-operatives and to the Small Business Training Institute

(Overnight stay at Taejon)

FRIDAY, 11 SEPTEMBER 1987

Morning

- Chongju. Visit to Dainong Co., Ltd. (textile plant)

Afternoon

- Daegu. Visit to Textile Technology Promotion Institute and to Sung-Lee Machinery Works, Ltd. (Spinning machine manufacturer)

(Overnight stay at Kyongju).

SATURDAY, 12 SEPTEMBER 1987

Morning

- Pohang City Visit to Pohang Iron & Steel Co., Ltd. (POSCO)

(Overnight stay at Kyongju).

SUNDAY, 13 SEPTEMBER 1987

- Visit to Folk Village at Yongin

Seoul

MONDAY, 14 SEPTEMBER 1987

Morning

- Working Group Session I (Moderator: Dr. Rhys Jenkins, UNIDO)
  - Industrial restructuring in Asian developing countries: Current situation and future trends (textile and garment sectors)
  - Presentation of country papers
- Working Group Session II (Moderator: Prof. Brian Toyne, UNIDO)
  - Guidelines for development of policy framework (for the restructuring of textile and garment industries)

Afternoon

- Working Group Session III (Moderator: Mr. Nils Ramm-Ericson, UNIDO)
  - Development of institutional infrastructure and industrial services textile and garment sectors)

  Preparatory session for group presentation

Evening

- Dinner hosted by Mr. Kim Woo Choong, Chairman, Korean Federation of Textile Industry.

TUESDAY, 15 SEPTEMBER 1987

Morning

- Visit at "Korea Machinery Exhibition 1987" at the Korea Exhibition Center (KOEX)

Afternoon

- Plenary Session
  - Presentation by Working Groups
  - Consideration/adoption of summary of conclusions and recommendations
- Concluding Session

Evening

- Farewell dinner hosted by Dr. Koo, Bon Ho, President of KDI.

Annex II

KDI/UNIDO Seminar on
Industrial Policy and Structural Adjustment
9-15 September 1987, Seoul, Republic of Korea

List of participants

COUNTRY PARTICIPANTS

Burma:	(Ms.) Daw Khin Than Nwe, Deputy Director (Marketing), Textile Industries Corporation, Rangoon
India:	Mr. C.D. Cheema, Joint Secretary, Department of Textiles, New Delhi
Indonesia:	Mr. Achyar S. Teks, Head, Sub-directorate Business Development, Directorate of Textile Industries, Jakarta
Malaysia:	Mr. Haron Siraj, Director, Industries Division, Ministry of Trade and Industry, Kuala Lumpur
Philippines:	Ms. Thelma Jover, Deputy Director, Garments and Textile Export Board (GTEB), Department of Trade and Industry, Manila
Rep. of Korea:	Mr. Kim Young-Cho, Director, Chemical and Textile Division, Bureau of Extension Service, Industrial Advancement Administration, Seoul;
	Mr. Chung Soo-Jong, Managing Director, Korea Federation of Textile Industries (KOFOTI), Seoul;
	Mr. Han Jae-Suk, Director, Textile Raw Materials Division, Ministry of Trade and Industry, Seoul (observer)
Sri Lanka:	Dr. Pat Hunasinghe, Director, Department of Textile Industries, Ministry of Textile Industries, Colombo
Thailand:	Mr. Pramode Vidtayasuk, Head, Textile Policy and Planning Sub-division, Textile Industry Division, Department of Industrial Promotion, Ministry of Industry, Bangkok
Viet Nam:	Mr. Nhuyen Trung, Director, Department of Foreign Economic Co-operation, Ministry of Foreign Affairs, Hanoi.

RESOURCE PERSONS:

- Dr. Rhys Jenkins, School of Development Studies, University of East Anglia, Norwich, UK (UNIDO consultant)

- Mr. Nicolas Marian, Economic Adviser, International Textiles and Clothing Bureau, Geneva, Switzerland

- Mr. J. Antonio M. Quila, Senior Development Bank Specialist, Industry and Development Bank Department, Asian Development Bank, Manila, Philippines

- Mr. Nils Ramm-Ericson, Senior Industrial Development Officer, Regional and Country Studies Branch, UNIDO, Vienna, Austria

- Prof. Brian Toyne, Director, Center for International Business Studies, University of South Carolina, Columbia S.C., USA (UNIDO consultant)

- Mr. Cho Chong-Kyun, Industry Programme Officer, Industry Division, Asian Productivity Organization, Tokyo, Japan

SPEAKERS:

- Dr. Ahn Young-ok, President, Korea Technology Advancement Corporation
- Dr. Kang Young-kook, Executive Managing Director, Daewoo Corporation
- Dr. Lee Kyu-uck, Senior Fellow, Korea Development Institute
- Dr. Young Soo-gil, Senior Fellow, Korea Development Institute

UNIDO/UNDP

- Mr. Nils Ramm-Ericson, Senior Industrial Development Officer, Regional and Country Studies Branch, UNIDO, Vienna

- Mr. Jack Goulden, Deputy Resident Representative, UNDP, Seoul

- Mr. A. Nasir, UNIDO Project Manager/Co-ordinator, UNDP, Seoul

- Mr. M. Vandenplas, UNIDO JPO, UNDP, Seoul

- Mr. Lee Yong-Hi, Industrial Promotion Officer, UNIDO Investment Promotion Service, UNIDO, Vienna (observer).

ORGANIZING COMMITTEE OF KOREA DEVELOPMENT INSTITUTE:

- Dr. Whang In-Joung, Vice President for International Co-operation
- Mr. Hwang Won-gyu, Research Associate
- Mrs. Chung Hae-sook, Research Assistant
- Mr. Han Kwang-suk, Research Assistant
- Mr. Chung Woo-yong, Research Assistant
- Mr. Lee Tai-hee, Research Assistant
- Ms. Kim Soon-jung, Secretary.

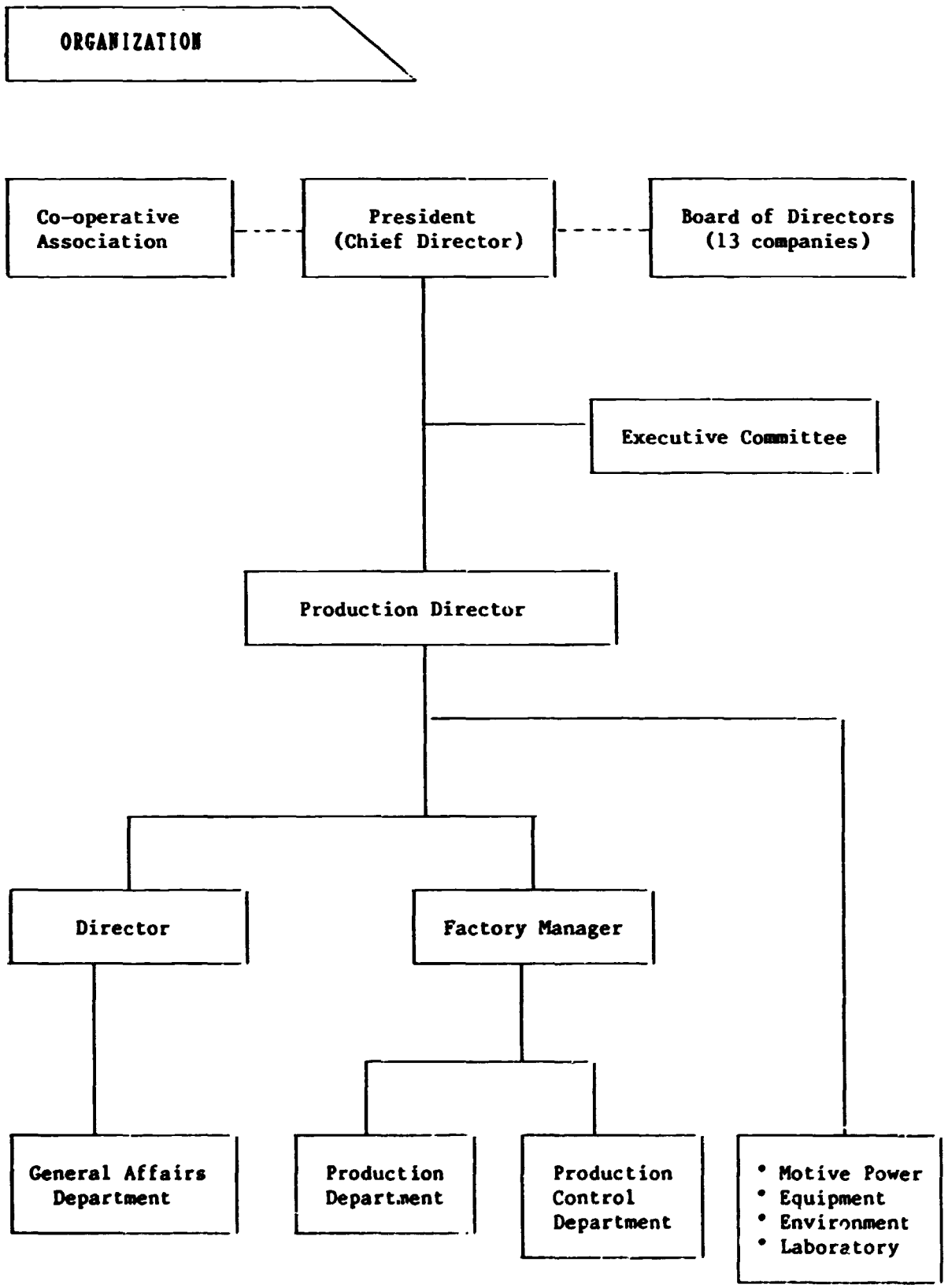
Annex III

Brief on Panwoi Textile Printing Industry Co-operation Factory

THE PRESENT CONDITION

- ESTABLISHED: 23 July 1981
- ORGANIZATION: 13 companies
- CAPACITY: 8,000,000 yards/month
- EMPLOYEES: About 950
- GROSS PROPERTY: Twenty million dollars ($20,000,000)
- GROSS PROCEEDS: Thirty million dollars ($30,000,000)
- THE GOAL YEAR (1987): $35,000,000
- JOINTLY PROCESSES (USE): 60 per cent
- BUILDINGS COVER 40,328 sq.m. of which 23,850 sq.m. is production area
- BOARD OF DIRECTORS:

President ..... (Chief Director)	Y.K. Cho
Executive Committee ..... (Management)	Y.K. Cho S.W. Choi H.B. Shon C.S. Kim
Production Director ..... (Regular business)	M.I. Shim


ORGANIZATION
Co-operative Association
President (Chief Director)
Board of Directors (13 companies)
Executive Committee
Production Director
Director
Factory Manager
General Affairs Department
Production Department
Production Control Department
• Motive Power
• Equipment
• Environment
• Laboratory

SPECIAL CO-OPERATION SYSTEM

Co-operation equipment

- Finishing process
- Utility equipment
- Environment equipment
- Laboratory equipment
- Welfare work

Cost gains (Production control)

- Capacity (Delivery shortening)
- New production facilities (Increase of productive power)
- Production efficiency

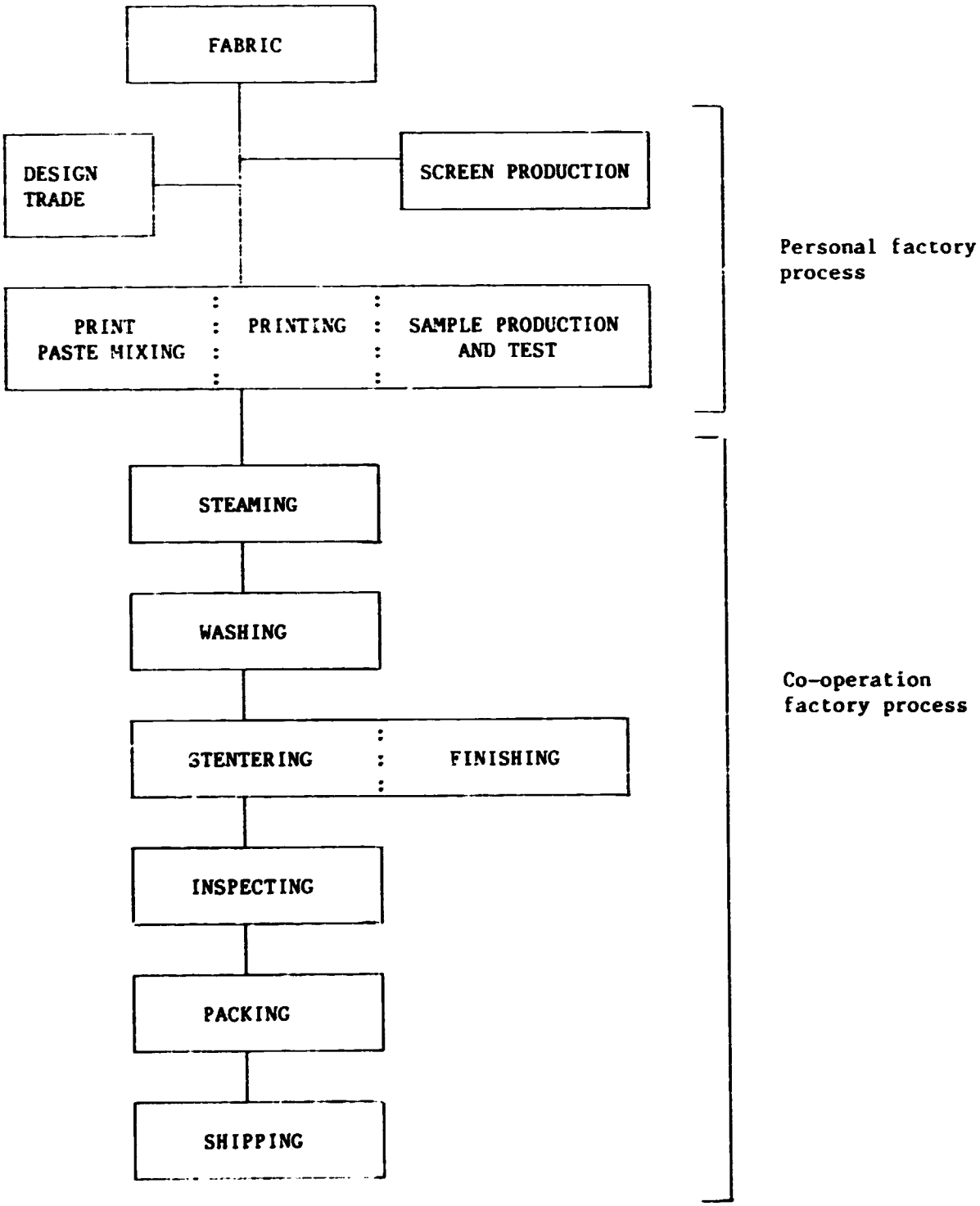
Management system

- Board of Directors
- Executive Committee
- Factory Manager (Production action)

Quality control (Laboratory)

- Report exchange
- Process check
- Technical co-operation

BASIC PRODUCTION PROCESS CHART



PRODUCTION FACILITIES

A. PERSONAL FACTORY

Process	Equipment	Quantity	Capacity
Printing	Hand print plate	16 EA	1,500,000 yards/month
	Auto plate screen m/c	19 EA	7,300,000 yards/month
	Rotary screen print m/c	1 EA	600,000 yards/month
	Roller print m/c	3 EA	900,000 yards/month
	Padding m/c (auxiliary)	9 EA	(5,400,000 yards/month)
Total			10,300,000 yards/month

B. CO-OPERATION FACTORY

Process	Equipment	Quantity	Capacity
Steaming	Steamer HT Type 3	4 EA	8,000,000 yards/month
	LT Type 1		
	Washing m/c (continuous type)	5 EA	8,000,000 yards/month
	Scatcher m/c	2 EA	9,000,000 yards/month
	Cylinder dry m/c	1 EA	9,600,000 yards/month
	Stenter	4 EA	
Packing	Comfit m/c	2 EA	1,000,000 yards/month
	Inspection plate m/c	10 EA	8,000,000 yards/month
	Folding m/c	8 EA	8,500,000 yards/month
	Auto Vinyl packing m/c	1 EA	8,000,000 yards/month
	Banding m/c	2 EA	7,000,000 yards/month)
Total			8,000,000 yards/month

13 COMPANIES AND CO-OPERATION COMPANY PROFILE

Company	President	Building	m/c	Employees	
Sung Min. Co. Ltd.	K.J. Hwang	2,371.3m^2	Hand, plate rotary	100	PET, cotton, printing
Saewoon industry Co. Ltd.	J.H. Park	1,066.73m^2	Plate	35	PET printing
Sun Heung Co. Ltd.	S.W. Choi	2,029.37m^2	Hand, plate roller	100	PET, cotton, printing
Sin Il Co. Ltd.	Y.K. Cho	1,932m^2	Plate	90	PET, A/N printing
Jin Myung Industrial Co. Ltd.	C.S. Kim	1,210m^2	Plate	40	PET printing
Hyun Dai Special Printing Co. Ltd.	K.M Choi	1,524.56m^2	Hand, plate	80	PET, T/R, cotton, printing

Cont'd.

Company	President	Building	m/c	Employees	
Tong Bang Textile Co. Ltd.	I.S. Jeong	504m^2	Hand	50	PET, Nylon, cotton, printing
Sinju Industry Co. Ltd.	H.J. Hyun	504m^2	Hand	38	Silk printing
Dae Ju Industry Co. Ltd.	H.B. Shon	990m^2	Hand, plate	45	PET printing
Se Hyun Industry Co. Ltd.	T.I. Park	990m^2	Hand, plate	30	PET printing
Dong San Industry Co. Ltd.	K.M. Hwang	990m^2	Hand, plate	30	PET printing
Kukge Corporation Co. Ltd.	T.H. Hwang	1,566m^2	Developing sheer tension	32	Screeb production
Banwol Printing (Co-operation factory)	Y.K. Cho	9,162.3m^2	Steamer washing m/c stenter	240	Pringing fininishing