NEAR EAST UNIVERSITY

TEXTILE INDUSTRY STRUCTURE IN BURSA

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CONTENTS

1. INTRODUCTION

1.1.DEFINITION:

Textile is the originally a woven fabric ;the term is applied to any manufacture form fibers ,filaments or yarns,natural or man+made,obtained by interlacing.

NOTE:Forexample; threads, cords, ropes, braids, lace, embroidery and nets

*Of or pertaining to fibrous or filamentous manufacturers and to the rawmaterials, processes, machinary, buildings, and personal used in,the organizations connected with and the technologically of their manufacture.

NOTE:Examples of the adjectival use of term are textile fibers,textile.....

1.2.AIM OF STUDY

The structural changes which areexperienced by the cotton textile industry in Turkiye and the imbliance created in the sub-sectors due to these chances have necessitated the periodic investigation and the fact vrification of investment policies of this sector.This study is a review of a similar and more comprehensive study prepared by MURAT CAVDAR in 1994 to cover the presently discussed subject .Present status and growth possibilities of the BURSA TEXTILE INDUSTRY with the purpose of determining the sectoral investment policies and type of loom and also acqusition of the necessory information to be utilized in the promotion .

1.3.HISTORY AND STRUCTURE OF TEXTILE

In the forested mountains of western TURKIYE, around the city of BURSA,villagers continue a tradition more than 1,400 years old-rearing silkworms.

Despite intense competition from the far east ,the turkiye silk industry struggles on,though more for social than economic reasons.Its production has dwindled to less than one percent of world output ,and the industry badly needs more government investment.

Toward the end of april every year,around 14,460 villagers from the Bursa area buy boxes of silkworm eggs government cooperatives.

In their homes they feed the newly-hatch hed worms on mulberry leaves until the worms spin themselves hard,white cocoons.In mid-June,the villagers sell the cocoons,with the raw silk contained in their shells,to merchant in Bursa's famous 15th century KOZAHAN(Cocoon market).

The BURSA silk industry dates back to 550 AD ,when the Byzantine emperor Justinian managed by subterfuge to break the Chiniese monopoly on silk manufacture,jealously guarded for 2000 years.He persuaded two Persian monks living in China to visit his capital of Constantinopal(now istanbu) with silkworms concealed in their hollow bamboo canes .

From those few smuggled worm came the varities of silkworm that kept European sericulture going until the 19th century,when new Asian strains were imported.The nomadic Turks who ousted by Byzantines from the Anatolian plateau in the 14th century continued the tradition.In 1451 they erected in Bursa the Kozahan silk market,a two story arcade built around an open court yard.

The government restored the building in 1973 and it has again become the commercial centre of Turkiye silk industry.Today the Bursa region acounts for %34 of the country's total silk production. Locally-made silk scarves and handkerchiefs on sale at the Kozahan are one of the city's major tourist attractions.

With its mild climate ,which favours cultivation of mulberry trees,Bursa was renowned in early Ottoman times for its sericulture. But European and Japanese technical

advances ,particularly in egg production and storage,wiped out much of the Middle Eastern silk industry by 19th century.

Mehmet Bayram ,26,from a village near Bursa ,said silkworm raising was a family tradition "The grandfather of my grandfather did it" , He said. "I learnd from his father."

Bayram purchases one box containing 20.000 silkworm eggs from the co-operativeeach year. He raises the worms of a room in his house, feeding them with leaves taken from his orchard of 30 mulberry trees.

The worms require careful attention.They have been reared under human care for several thousend years, and have lost the ability to feed for themselves.Unless food is placed right in front of then, they will starve to death. Worms' debilitated senseof smell can not detect mulberry leaves a metre away ,and no metter how hungry, they are too weak to crawl thet for to eat.

After feeding for 35 days the worms climbe onto mulberry branches and begin spinning their cocoons. In mid-June,Bayram will collect abaut 77 pounds(35kilos)of cocoons and sell them to a merchant in the Kozahan for a $50 profit .

To extract the silk fiber, the pupae are killd by heat and the thread,up to half a mile (900metres) long is unwound. 50.000cocoons are needed the produce kilogramme (2,2lb)of silk.

Bayram said the money "doesen't help my family much" but raising silkworms has become a" kind of habit"15r him.To maintain quality control,the Sericulture Institute keeps a close watch on villagers like Bayram ,who are allowed to rise silkworms only with Istitue permission.

Gowernment agriculturaltechnicians oversee the handling of the eggs by the co-operatives and control the number allotted to be villagers esch year.

In the late 1970s. theTurkish governmentprovided guaranteedsupport price for the cocoons.This was abolished in 1980,butmarket prices are still high enaugh to interest villagers.

Althougt Turkiye's silk producers are enthusiastic ,the industry badly needs more investment.The government can not provide enough eggs,and mulberry trees are also in short supply.

Most silk- producing countries raise worms three times a year.Turkiye has two rearing seasons.April to mid-June and again in August and September ,but the autumn season produces only 66tonnes of cocoons,compered with 2.000 tonnes in spring.

To expend the autumnseason would require more egg storage facilities and additionalirrigation to produce more mulberry trees.

Today Turkiye's46.300 part- time sericultirists produce just 435 tons of row silk a year.The Chinese produce abaut 23.000 tones.Turkiye no longer exports row silk.In fact, to supply its textile and silk carpet industries, abaut 40 tones of Chinese silk are important yearly-cheaper than producing it at home.

Officals at Turkiye's Sericulture Institute,located in Bursa since 1888,admit the industry has more social than economic value. "The government is primarily interested in increasingvillage incomes." said an agricultural expert . He estimated Turkish farmers earn abaut $75 million a year from part- time sericulture.

Cotton textiles are manufactured in large factories which represent major production facilities.About a quarter of total capacity is a rough approximation,due to the fact that many such operations cease when market demand decreases.At present, capacity utilitization is estimated to be at around 90%.The number of looms employed for woolen textiles is 5000,producing 150 million square are meters per year.

2.TEXTILE PRODUCTION AND CONSUMPTION IN BURSA

If we talk about textile industry in Turkiye absolutely we should begin with Bursa.Because of historical and geographical reasons Bursa's industrial structure developed a lot and it became very strong.It depends on past experience.Bursa textile growth and walked with high tecnology .Capasity and production of Bursa are enough for inside of Turkiye and outside of Turkiye.

Today -- Bursa textile industry:

--COTTON TEXTILE
--ARTIFICIAL AND SYNTHETIC TEXTILE
--YARN PRODUCTION
--WOOLEN TEXTILE
--NATURAL SILK YARN TEXTILE
--DYEING,FINISHING,PRINTING
--READY-MADE CLOTHING
--KNITTING
--CARPET AND OTHER TEXTILE INDUSTRIES

In that sector artificial and synthetic production company rate is bigger than others.

Today 6000 small company and 80000 employers working in this sector.It means that;Artificial and synthetic companies provide more economical effect to GNP.

Encouragement in textile and competition in textile are increased textile production in Bursa and in Turkiye.

In textile industry the place of small companies are also very important.We can say that ;small companies and big companies create textile industry in Bursa.

In Bursa approximatelly 55.000 textile looms are working in 1994.Turkiye has 7 biggest artificial yarn company and 5 of them are in Bursa.That 5 companies are using high technology and high productivity.Consequently Bursa's textile industry represents Turkiye textile industry.

Textile export is $200.000.000 .

***General information about VARIOUS TYPE OF TEXTILE PRODUCTION

(18.3.1994)

COUNT OF FIRM: 588

COUNT OF LABORFORCE: 10.665

COUNT OF VARIOUS LOOM: a)Textile loom(black loom):4.824

b)Knitting

loom:5.414

Production capacity of various type of textile:

Artificial or synthetic cloth : 30.041.380 m
Artificial and synthetic cloth: 137.409.370 m2
Woolen cloth(m2) : 2.389.825 m2
Cotton cloth (m2) : 15.541.035m2
Natural silk yarn cloth (m2) : 1.588.801 m2
Knitting cloth production :74.609.780 m2

Consumption capacity of various type of textile(kg):

Artificial and synthetic yarn :28.257.057 kg
Cotton yarn : 4.776.419 kg
Natural silk yarn : 350.822 kg
Woolen yarn : 1.804 kg
Various yarn : 581.271 kg

3.TYPE OF LOOM

Bu rsa textile industry is always walking with world textile industry. For that reason loom types are thecnologic and productively(July 1991)

Type of loom	Count	Distribution(%)
D.Armur	3.346	32,7
D.Jakar	408	3,9
D.Duz	66	0,7
G.Armur	513	5,0
G.Jakar	326	3,2
G.Duz	25	0,2
Aoutomatic	4.885	47,7
D.Kinitting(loom)	261	2,5
Y.Kinitting	268	2,6
Velvet(total)	140	1,5
TOTAL	10.230	100

Theoric Capacity Of TextileLoom

Type of loom	Yarn Consumption	Cloth Production
D.Armur	2.609.880 kg	18.068.400 m.
D.Jakar	326.400 kg	1.615.680 m.
D.Duz	36.960 kg	409.200 m.
G.Armur	513.000 kg	2.154.600 m
G.Jakar	645.480 kg	1.173.600 m
G.Duz	24.000 kg	120.000 m
Otomatic	27.906.000 kg	127.201.000 m2

4..YARN INDUSTRY :

4.1.BASIC YARN INDUSTRY

In this sector cotton yarn ,nylon yarn ,polyester yarn ,woolen yarn ,knitting and embroidery yarn are the basic yarn type of textile.

COUNT OF FIRM : 15
COUNT OF LABORFORCE :10.131
MACHINE POWER :98.950 hp

Production type :	production:
Nylon 6 Yarn	9.450 ton
Nylon 6 Polyester fibers	3.500 ton
Strayhgorn yarn	1.504 ton
Kamgarn yarn	2.272 ton
Polyester continoue yarn	59.985 ton
Cotton or Artificial synthetic fibres yarn	8.780 ton
Polyester cut fibres	10.500 ton
Cotton knitting and ebrioridery yarn	399.456 kg
Penye cotton yarn	558.472 kg
Cotton or Cotton type artificial and synthetic cut fibres open-end yarn	1.240.600 kg
Wiscon yarn	1.432.200 kg

In above we talk about capacity of production .Now we will see the type of materials and amount of materials.

Type of consumption materials:	Amount of consumption:
Cotton	4.553 ton
Indantren dye	3.528 kg
Sulphur dye	3.888 kg
Direct dye	2.592 kg
Reactive dye	3.834 kg
Acit dye	2.768 kg
Suclcostic	453.945 kg
Dispers dye	101.912kg
Natural gas	1.609.632 cm3
Woolen or woolen type artificial and synthetic fibres	1.099 ton
Cotton or cotton type artificial and synthetic fibres	5.083 ton
Cotton or cotton type artificial	

and synthetic cut fibres	5.780 ton
Ure	3.884 kg
Lignite	12.788 kg
Polyester cips	27.730 ton
Kops	2.350.000 ad.
Wiscon fibres	1.504.440 kg
Artificial and synthetic fibres	74.847 kg
Synthetic contiue fibres	147.322 kg
Salt	1.711 ton
Australian type merinos fleece	562.515 kg
Domestic clear fleece	592.604 kg
Dirty merinos fleece	1.417.000 kg

4.2.NATURAL SILK YARN PRODUCTION

COUNT OF FIRM : 9
COUNT OF LABORFOCE : 589

Type of production :	Capacity of production(kg) :
--Natural silk yarn	107.064
--Strate silk yarn	28.800
--Curly silk yarn	69.943
--Remaining silk	38.000
--Crisalit	36.000

Consumption input :	Amount of input :
--Wet silk cocoon	467.250 kg
--Dry silk cocoon	422.064 kg
--Salt	85.050 kg
--Coal	9.744 ton

4.3.VARIOUS YARN PRODUCTION

COUNT OF FIRM :23C
COUNT OF LABORFORCE : 1.414
MACHINE POWER : 9.382 hp

Type of production :	Amount of production :
Fantasy yarn (Various)	886.251 kg
Embroidery yarn	233.085 kg
Cordenet yarn	82.948 kg
Operation yarn (Various)	524.160 m
Carpet yarn	533.849 kg
Texture yarn	1.224.432 kg
Cloth silk	15.795 kg
Unfire yarn	11.612 kg
Cotton fantasy yarn	2.328 kg
Industrial yarn	904.153 kg

Type of consumption :	Amount of consumption:
Artificial silk yarn	202.205 kg
Artificial or synthetic yarn	614.871 kg
Sim-monofil	12.143 kg
Cotton yarn	205.099 kg
Domestic fleece	273.696 kg
Artificial or synthetic fibres	223.933 kg
Synthetic continoue fibres yarn	544.246 kg
Polyester continoue yarn	800.928 kg
Natural silk yarn	810.259 kg
Cut fibres yarn	171.735 kg
Polyester+Cotton yarn	215.257 kg

4.4.TOWEL PRODUCTION

COUNT OF FIRM : 42
COUNT OF LABORFORCE : 1.158
MACHINE POWER : 4.328 hp

Type of production :	Capacity of production :
Towel cloth	425.088 m
Various towel	9.237.610 m2
Bathrobe	125.600 ad.
Beach cloth	64.800 ad.
Various towel cloths	442.242 kg

Type of consumption :	Capacity of consumption:
Cotton yarn	5.211.524 kg

4.5.WARPING-TWISTING-WEAVING PREPARATION PROCESS

COUNT OF FIRM :26
COUNT OF LABORFORCE :305

MACHINE POWER : 1.203 hp

Type of production	Amount of production
Unfasten	5.400.000 m.
Artificial silk yarn warping	6.480.000 m.
Polyester yarn warping	1.360.000 kg
Artificial or synthetic yarn warping	2.645.000 kg
Various twisting yarn	225.134 kg
Artificial silk yarn warping	2.960.000 kg
Weaving preparation	179.795 kg
Luvert preparetion	4.500 kg
Nylon yarn warping	2.700.000 kg
Natural silk yarn warping	835.930 kg
Cotton yarn warping	874.800 kg
Hasil	8.910.000 kg

Type of consumption	Amount of consumotion
Row material of warping	122.292 kg
Schlichte T-8	187.577 kg
Softing material	8.640 kg
Polivinil alcohol	472.320 kg
Fonction of poteto starch	105.300 kg

4.6. DYEING-FINISHING-PRINTING PRODUCTION

COUNT OF FIRM :134
COUNT OF LABORFORCE :12.042
MACHINE POWER :6.096.725 hp

Type of production	Amountof production
Textile dyeing	931.648.965 kg
Textile dyeing	29.278.475 m.
Printing	261.429.983 m.
Towel dyeing	3.977.0kg
transfer finishing	6.292.800 m.
	8.832.720 m2
Fibres dyeing	444.600kg
Model finishing	25.600 tk
Total yarn dyeing	18.682.900 kg
Fleece dyeing	120.0kg
Acrilic plate	1.209.600 m.
Batic dyeing	5.858.572 m.
Pice finishing	840.000 ad.
Natural silk yarn dyeing	255 ton

Type of consumption	Amount of consumption
Disper dyeing	2.099.901 kg
Reactine dyeing	2.423.840 kg
Indantren dyeing	392.174 kg
Base dyeing	35,297 kg
Finishing dyeing	32.651 kg
Direct dyeing	1.446.877 Kg
Traplen dyeıng	5.109 kg
Acid dyeing	192.175 kg
Asethic acid	940.507 kg
Sudcostic	.773.673 kg
Salt	21.289.405 kg
Gasolin	559.853 kg

Lignite	411.928 ton
Fuel oil	99.564 ton
Naturel gas	121.428.160cm3
Transfer finishing paper	2.585.520 m2
Ure	718.126 kg

4.7. READY-MADE CLOTHING-KNITTING INDUSTRY

COUNT OF FIRM :126
COUNT OF LABORFORCE:7031
MACHINE POWER :4.098.072hp

Type of production	Amount of production
Women ready-made clothing :	
Dresses	1.197.626 ad.
Trousers	446.030 ad.
Jackets	394.800 ad.
Coats	24.000 ad.
Shirt	*117.000 ad.*
Underwear	*752.000 ad.*
Night-dresses	3.000 ad.
Night-wear	217.140 ad.
Rodingot	13.200 ad.
Skirt	1.249.217 ad.
Mont	60.000 ad.
Raglan	26.400 ad.
Turban	1.498.200 ad.
Men ready-made clothing :	
Tuxede	137.400 ad.
Jacket	95.400 ad.
Trousers	576.060 ad.
Shirt	1.584.199 ad.
Underwear	1.000.000 ad

Sport- Wear :	

Blue-jean	60.653 ad.
Truck suit	1.248.468 ad.
T-shirt	8.450.791 ad.
Sweat shirt	2.490.320ad.
Baby-wear :	

Jump suit	12.000 ad.
Child throusers	15.000 ad
Blue jean	20.100 ad.

5.TEXTILE SECTOR EXPORT

5.1. PROBLEMS AND PROSPECTS

The textile sector went through a difficult year 1989 due to a depressed domestic market.Because of increased exports however,production neverheless still increased, particularly in the case of ready-tower clothing. A large part of the textile sector's existing capacity is devoted to exports in any case ,and this situation market to what degree it is depend upon markets abroad.

Porior to the outward-lookingreorientation of the turkish economy in 1985,the textile sector earned $400million through exports.This represented 16,7% of turkiye's total export and 48% of its exports of industrial goods.Exports of textiles doubled by 1986,but then so hadtotal exports.The share oftextiles in total exports remaind at 17%,but in total exports of industrial goods their share dropped to35% ,a fact indicating that industrial goodsother then textiles were quickly increasing their export potential.

In the last two years ,textile exports have stabilized around 36% of exports of industrial goods,an impressive performance when we take into conderetion the fact that the textilesector represents only 16% of turkiye's industrial production.At same time however, they cotinued to increase their share of total exports, reaching 23% in 1988 and 26% in 1989 .Turkiye's performance in the field of exports was favorably influenced by the incentives offerd by government policy,but also by the expansion in the world population and by a general growth in levels of income, it was negativelyaffected however by protectionist measures taken by the countries of the EC and by the USA.

The textile sector is the most appropriate of the manufcturing sectors in wich to view the effects of the balance of trade.The export /import ratio for the turkish economy is 0,66 in average terms ,and 1,00 in marginal terms.The textile sector however has an impressively low dependence upon imports ,a fact which rise export/import ratioof 5this sector to 16 in 1989.Indeed,imports by the textile sectorbarely exceeded $100 million a year in the post 1985 period.

An analysis of the composition of textile exports indicates in ready-to-wear items, the first in 1986, when their share rose to 30% and the second in 1989,when it rose further to 37,7% .The second categoryis cotton yarn,grey cloth and cotton textiles .This category as high as 62% in 1984,with cotton yarn amouting to 58%. Yarn gradually

declined reaching 15% in 1989, while grey cloth and cotton textiles increas to 13,5% thus bringing the total of this group to 28%. Exports of carpets and kilims were reduced by half from 19,4% in 1985-1987 to 9,6%in 1989,andhave stabilized at around $180 million.

5.2 EXISTING CAPACITY OF THE TEXTILE SECTOR

Cotton yarn capacity presents a broader indication of the textile sector's capacity. This material was favorably affected by insentives measures being implemented as early as 1965 .

by 1972, the number of spindles in the cotton yarn sector had increase to one million,and in the following ten years they tripled.

Yearly capacity, which was 135 thousand tons in 1972, rose to 460 thousands tons in 1981.It was during this decate that Turkiye casedto be an importer of cotton yarn and became an exporter who provided one third of the imports of the countries of the E.C.The present capacity is three million spindles, which is fully employed could produced 460 thousand tons under the present composition of the product mix. Amore realistic assessement of the full employment capacity taking in the consideration the age distribution of existing plant capacity would indicate a production level ranging 405 and 410 thousands tons. Aquarter of this capacity provided by 480 thousand spindles, is belivedto be capeble of processing long fiber,wool,and synthetics.

5.3.DOMESTIC TEXTILE DEMAND

In the 1975's demand for cotton textiles rose at rates of between 6 to7%,correspondingpartly to a net increase in population of around 2,5% and in increase in per capita income of around 4% .Population increase during the next five years is estimated to be around 2%.While the increase in per capita income is around 3% ,bringing estimated demand for textiles to 5%per year.A correction has to be made in this estimate however due to a deterioration in the distribution to not more than 1%.Thus the estimated increase in annual demand for textiles will approximate 3%.In square meters,this means 45 million square meters per year.It should be obvious that if healty development of the cotton textile sector is to take place , exports are the only posible way out.

5.4.PROBLE DEVELOPMENT IN WORLD TEXTILE TRADE

World consumption of fibers increase d at the imprassive rate of 12%during 1955-1977 but dropped to 2,3%during the first petroleum crizes.Its estimated at present to be increasing at 3,5% as a world avarage ,being 2,4% in developed countries,5% in developing countries and 4% in countries where production is carried out by the state.

The value of the world trade in textiles amounts to about 100% billion.Turkiye's share of the total is between 1 and 2%,but is much higher in cotton yarn ,beign approximatelly 9%.

The present structure in textile production,consumption and trade indicates a redrogression in the developed countries with a rapid increase in the developing nations. Advances in productivity in developed countries have so far been able to compansate for decraeses in capacity,but the productivity and thecnological superiority of this nations as now reached a stage which is forcing the theoretical limits. The shares of the main commercial blocs in world textile production,cunsumption and trade indicate a number of trade which are not likely to be reversed in the short run.

Western Europe is the largest group of next exporters.It should be obvious that the letter will be making efforts to increase their shares of the markets of Western Europe and North America,and that they are going to be compaiting amount themselves as well as with other groupsin order to do this.

Inthe twenthy years between1965 and1985,the number of spindles in the world increased by 16%. while yarn production capacity in the countries of Western Europe decreased by 47%from 30 million spindlesto 16 million spindles.Thailand increase its ownto 13,2 million.Taiwan to 5,3 million, Turkiye to 3 million, and South Korea to 2,4 million.Total world textile loom capacity increased by 13% during these same years, while the number of the looms in Western Europe dropped from 564 thousand to207 thousand.

While there would seem to be an export potential in the markets of developed countries for the developing countriesand for Turkiye,it is nevertheless a fact that the stiffest copetition comes from the developed countries themselves.They may be net importers ,but at the same time they possess a very high share of exports.

Turkiye managet to increase its share particularly of cotton yarn exports during the 1972-1983 period by the fact that E.C. increased its production of commidity from135.000 to 300.000 tons. The turkiye textile industry thus was able to grab a 46% share of the increased market, representing 76.000 out of 165.000 tons.

5.5. FUTURE OF TEXTILE SECTOR DEVELOPMENT PLAN

During the period of fifth five-year development plan ,domestic dement for the products of the textile sector is expected to increase an avarage of 5% per year, while exports of textiles and ready-to-wear clothing are targeted to increase 14% per year.

Production of the textiles and ready-to-wear clothing sector is target to grow at the rate of 7% per year in order to meet the requirements of both domestic demand exportation,the latter being expected to increase 93.% per year,thus making the share of textile exports in total exports 14,4% in 1989 as opposed to 14,80% in 1989. Production of ready-to-wear clothing on the other hand is expected to increase at 17% per year, raising its share in total exports in 1995to 16,10,up from 12,35 in 1989.Exports of both sectors are expected to grow at 14% raising the share of textiles and ready-to-wear clothing from 26,1% of total exports in 1989 to 30,5 in 1995.

6 .MARKET STRUCTURE OF TURK TEXTILE

6.1.DIFFICULTIES FOR YARN PRODUCERS

New arguments are erupting because of the rapid increase in cotton yarn prices. the yarn producers are complaining that the premium system is not being applied according to its goals and because of the monopoly that Taris holds, the cotton prices are abowe the world prices. The cotton price which were11.600-12.200 liras in 1992,increased to 21.500 liras in one year.The yarn producers also argued that since the motorway contracts which were to be built by Turkish contuctors were cacelled by Pakistan,antidumping sanctions shuld be applied tothe import of yarns from that country.

The new premium system did not meet the expentations at the begining of the new cotton season. The system which is in place of provide cotton to the Turkish textile sector at prices equal to world has lost its effectiveness.As the cotton prices were low in August,September and October, the exporters began to act. During this period,large quantities were exported,but meanwhile ,the prices began to increase.The cotton priceswhich were 13.000 liras in IzmirTrade Exchange in September,increase to21.500 liras by the end of the year , and exceeded the world price.

The cotton prices also increased during March and Aprilo of last year.For this reason ,the people who are involved in the textile business have imported large 1quantities of cotton(especiallyfrom the Turkis Republics) and stocked them.That's why,they did not enter the market when the prices were cheap .By the new exporters profited from the system.

Yarn producers are disappointed because of the increase in cotton prices.The producer who strive to purchase raw metarial at prices equal to the world price are now angry at taris because current price are exceeding world price.Mr.Ertekin Ashaboglu,the president of textile raw materials exporters' association ,emphasized that taris has a monopolist attitude and went on to say:"All we want is to obtain raw material at world prices.Ifwe had this opportunity ,we wouldn't be afraid of importation.A great portion of the cotton produced this year will be sent to associacions due to the defect of the system.They are the only sellers at the moment,and for this reason they are keeping prices as high as they can. These institutions are trying to compansate their

expenditure by keeping the cotton prices high. It is not possible to use any other system before restructuring this instituions."

On the other hand ,Mr.Metin Ciftci,the general director of Birko iplik A.S.which is located in Nigde ,said that the exports of the textile sector amounted to 5-6 billion dollars and to increase this amount, new investments were obligatory.According to him, damped importation should be refuced because investment in this sector has come to a halt.

6.2.RELATIONSHIP WITH OTHER SECTORS

It has been announced that the sector which has the lowest labor cost in the industry was textile.It was stated that the annual avarage gross payment was 3.570.000 TL. and the average annual labor cost was 91.900.000 TL.It was reported that with this figures,labor cost inthe turkish textile industries much lower than in EC. countries.

In the resource which was done by TISK(Turkish employers syndicate confederation),it is stated that the labor cost in turkiye is even lower than in portigal which has the cheapest labor cost in europe.The report also announces that the average labor cost in EC. countries is $12.4.In the Turkish industry ,the lader sector follows the textile sector with regard to lowest labor cost.Inthe lader sector,the average annual labor cost is 128.000.000 TL and the average annual payment is 5.250.000 TL.

In the research, its stated that the food sector takes the third place with regard to labor cost. In this sectpr the average annual labor cost is 145.200.000TL. The average gross payment is 6.718.000TL.In the constraction sector, the average annual cost is 149.800.000TL.It isstayted that ,in the metal sector the average annual labor cost is 161.500.000TL.while the average gross payment 5.914.000TL.The sugar sector,which follows metal sector with regard to costs has an average annual gross payment of 6.948.000TL. and an average labor cost of 171.912.000TL.annually.

According to the report, the sector which has the highest labor cost is the chemical sector.In the chemical sector ,the average annual payment is 6.948.000TL.and an average labor cost of 171.912.000 TL. annually.

According to report in the chemical sector labor cost is 156.000.000TL.

6.3. TURKISH TEXTILE SITUATION IN THE WORLD

Turkiye placed 15th on the list compiled by textile-wirtschaft which is the most effective textile magazine in the world.

This is a noteworthy recognition of the great succes experienced by the turkish textile industry.Despite the economic crisis in the world and the tough challenges of the turkish textile sector, 21 turkish textile firms took their place on the list of the world's greatest textile firms.

Guney Sanayi is the 145th firm, according to list ,and increased its endorsement 131.000.000DM.in 1991 to 333.000.000DM.in 1992.

Turkiye took the 15th rank with its 21 firms out of the 430 firms whose endorsements exceeded 100.000.000DM. The Japeniese firm Kanebo, was the first firm in the list with 6.2.billion marks ,the English firm,CoatsWiella was the second with 5.2 billon marks: the South Korean firm ,Samsung Textile was the third with 4.4 billon mark. The Japaniese firm ,Toray Textile,was the fifth with 3.8 billon marks.

TURKISH FIRMS RANKINGS IN THE LIST (MILLION DM.)

	ENDORSEMENT 1992	ENDORSEMENT 1991	RANK
Guney Sanayi	333	131	145
Bossa	319	169	157
Kordsa	253	155	189
Mensucat Santral	251	170	191
Bisas	216	- - -	224
Sanka Textile	212	121	231
Akal Textile	212	11	232
ISCO	203	- - -	241
Duwa	165	75	292
Aksu	156	75	298

7. MANUFACTURING METHODS

Manufacturing methods of textile structral composute vary from pultrusion ,filament winding ,laminating ,including tape placement to more sophisticated weaving ,braiding , knitting and nonwoven as well as derivative of them with the stitching techniques. Before explaining the processing techniques of the textilestructure composite preforms, it should be generally defined what the whole algoritmis in prder to develope the better structure for specific applications.

High modules yarn and matrix is an input the preform and consolidation stepsrespectively .When the pref9orm is produced by the any suitable textile techniques ,it is ready for consolidationwhich includes several paremeters among others matrix types,pressure,temperature and time.As soon as the matrix is inserted to the perform ,it becomes a compositeand can be used particularly for criticalparts of the aerospace and aotomotive industry.

7.1.Pultrision

Pultrision is a continious and one-step conversion of row composite material to finished structral product .It is smilarbut not identical to the conventional aliminum extrusion processwith the variation that a number of raw composit materials enter the processing equipment smultaneously and are pulled rather then pushed trough the system.

Resin-wet reinforcements are drown into thesystem trough squeeze out bushings, which remove excess resin and are optionally pre-heated by dielectedradio fraquencies or induction preheating.The fibers then enter a heated forming/curing die ,and the cured stock is pulled out of die by suitable pulling devices.

Pultrsion process is used usually for producing inidirectionalreinforcement and constant cross-section.

7.2.Pulforming

The pulforming process is similar to pultrusion in thaht primary reinforcing fibers are drawn off the supply rack and through a resin impragnation tank,and then pulled through a forming/curing die.Two kind of pulforming process is developed,namely straight and curved pulforming.Both of these process have the capability of producing either constant volume /changing shape profiles or changing volume/chaning shape profiles.

7.3.Stitching/Pultrusion

Stitching can be incorporated with the pultrusion process.It might be possible to get remarkable advantages which are apparent when the fabric plies are stitched prior to pultruding.The advantages of stitching with pultrusion are given below;

--Fiber alignment;Stitching fabrics prior to consolidation at the forming tool will assure that the fibers maintain individual ply angularity during the frming and resin impregnation process.

--Assist resin impregnation; Stitch path can help direct resin into the part trhough each Z-axis stitch penetration.

--Provide Z-axis reinforcement;Stitching with high performance threads can provide shear plane property enhancement opportunities.

--Sub-element control and alignment;Stitching will provide the control necessary to assure fiber alignment and prevent ply deformity during consolidation.

--Fabric edge control;Stitching also prevents fabric edges from unraveling and accumulating at the forming tool.

-- Less waste;During the edge conrol process stitching equipment also automatically trims the edges prior to forming.

9.MODEL FIRM (BISAS)

NAME OF FIRM: BISAS (Bursa Iplik Sanayi A.S.)

AIM AND SUBJECT: Textile, Chemistry, Metal, Plastic, Productin of sector, raw and intermadiate or finish materials machine and trade

CENTRE:Cumhuriyet cd. Itir apt. No:295 Kat .7 D.14
HARBIYE - ISTANBUL

PRODUCTION CENTRE:Organize Sanayi Bolgesi
BURSA

REGISTRATION NO:Istanbul 139766/87242
Bursa 23295/14159

ESTABLISHEMENT AND HISTORY:

BISAS,a cornerstone of the country economy in its own field with its contributions to production,export and employement; was established in April 16,1968 in order to assess the Turkish cotton potencial in the most efficient way.

Complated its construction and assembly in a very short time,and started production in 1970.

Continuing production on 233.000 m2,in 90.000 m2 closed area;BISAS advanced to greater targets with its substantial over 40.000.000.000 TL.,with capital of 4.320.000.000 TL.and sources of 15.319.821.799 TL. including reserves(1.984.666.604 TL.) andwith an experienced staff of 3.000 workers.

PRODUCTION:

Started work with 10.800 spinles in 1970 ,the production capacity of BISAS, reached

in 1973-1974----------76.680 spinles,
in 1980-1981----------95.352 spinles,
in 1984-1985----------151.276 spinles,

Bursa Iplik Sanayi A.S. achived a capacity of 151.276spindles in the direction of its development targets ,and produces single thread yarns from Ne:10/1 to Ne:100/1 , made of cotton and cotton type synthetic fibre,accordimg to contemporary technologies.

Moreover,in the Open End miles,OpenEnd yarns from Ne:8/1 to Ne: 24/1 are produced.

In miles of twisting two of more plies ,cotton yarns are sign and mercerized,all kinds of yarns are dyed on bobbinsand acrilic yarns are transformed to high-bulk.

Besides,yaren are produced of wool and wool mixed acrilic,mohair, polyester mixed stable fibers.

EXPORT:

Bisas has given great importence to export since its establishment year 1968,and has realized US$ 107.634.709 of export reckoning from 1970, until the end of 1985.

proving its success in export with the prices and medals recived from various establishments,BISAS, exports products of cotton yarn ,acrilic yarn , redywear, towel and knit fabric to : France, Germany, Italy, England, Switzerland, Yugoslovia, Belgium, Holland and all Middle- East countries ,with the confidence created in world markets.

EXPORT OF BISAS IN THE 1981-1985

Years	Total(US $)
1981	9.411.353
1982	12.161.466
1983	10.933.327
1984	10.493.657
1985	11.140.657

With the capacity of 151.276 spinles we have reached this year, we are planning to increase our export to US$ 20.000.000 in the future and to higher levels in the comming years.

PRODUCTION FLOW-CHART:

Yarn and Synthetic-Artificial yarn	Penye yarn
1.Rake	1.Rake
2.Harrow	2.Harrow
3.Cer	3.Left Cer
4.Midlle Wick	4.a)Penyos
5.Ring	4.b)Thin Wick
6.Single Spool Ordeal ----TRIKOTAJ	----5.Ring
7.Pleat	6.Single Spool Ordeal
8.Twisting	7.Pleat
9.Spool Ordeal	8.Twisting
	9.Pleat Gaze
	10.Spool Ordael

10.RESULT

The present status reached and the problems confronted by the Turkish Cotto Textile Industry ,will undubtedy give rise to more severe conditions requiring difficult solutions if fast and affective measures are not taken immadiatly .

The existing surplus capacity in the cotton spinning sector , with the problems of low profitabilityand difficulty in marketting have forced the cotton yarn mills to integrat with weaving.

Turkish government provides a guarantieed support price for cocoons.But market prices are still high enough to interest villagers.

I think the textile industrybadly needs in more investment .

Turkish government must give encouragement for this sector and create competition succes in competition now depends totally on high technology and the power of creation .For this reason it is so important .

But we should know that Bursa is the textile city for Turkey and is the textile country for world.

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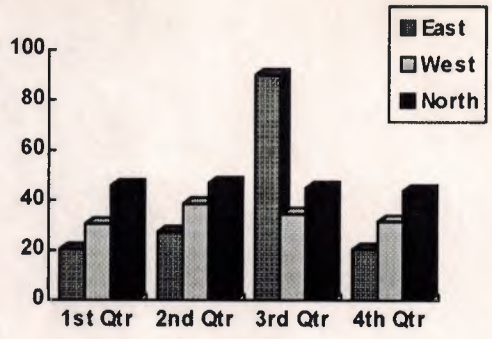
---- Orhan YILDIRIMCAKAR (BISAS Genel Muduru)

---- Recep CATALAGAC (BISAS Muhasebe Muduru)

---- Ahmet EKICI (BISAS Dis Ticaret Muduru)


East
West
North
100
80
60
40
20
0
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr