The Impact of Agreement on Textiles and Clothing on Pakistan's Textiles Industry

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CERTIFICATE

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Salma Shaheen

Dedicated

With Love and Respect

To

My Father

CHAPTER

1

INTRODUCTION

Textiles products are a basic human requirement next to food. This industrial sector in Pakistan has been playing a pivotal role in the national economy. The textiles industry may rightly be called the buttress of Pakistan's economy for following three reasons. First, its backward linkage with the agriculture sector, the life line of Pakistan's economy, is the strongest. Second, Textiles and Clothing (T&C) are the biggest manufacturing units in the country, accounting for the largest share of manufacturing investment, value added, and employment. Third, and most important, these are higher export oriented enterprises. Given the comprehensive spill over effects of this sector, in the event of any external or internal upset this sector is bound to cause serious imbalance in the whole economy of Pakistan.

Its share in the economy, in term of GDP, exports, employment, foreign exchange earnings, investments and contribution to the value added industry; makes it the single largest determinant of the growth in manufacturing sector. In spite of the government's effort to diversify exports as well as industrial base, the textiles sector remains the backbone of industrial activity in the country. It contributes around 8.5 percent to GDP[1], employs 38 percent of total manufacturing labour force, and contributes between 60-70 percent to total merchandise exports. Indeed, with exports reaching about $8.6 billion in 2004-05, Pakistan is one of the largest textile exporter in the world.

[1] Economic Survey 2005-06

The variety of textile products ranges from cotton yarn to knitwear. Each successive stage, that is, from the growing of cotton to its ginning, spinning, weaving and ultimate finished product is a value added process. The product is tradeable at each stage of production, but more the value added the greater economic contribution accrues to the economy. Overall, the United States (US) and the European Union (EU) are the Pakistan's largest trading partners accounting for 25 percent and 20 percent share of Pakistani exports respectively. Textiles production is comprised of cotton ginning, cotton yarn, cotton fabric, fabric processing (grey-dyed-printed). These components are being produced both in large scale organization sector as well as in unorganized cottage/small and medium units.

The share of Pakistan in total world textiles exports is only 2.5 percent where as the share of China is 26 percent. It shows poor performance especially in value added textiles products. In the light of increasing awareness about the importance of exports in the overall economy of Pakistan and in view of the unimpressive export performance of Pakistan as compared to the other countries of the region, it would be interesting to study the export performance of Pakistan. A country whose more than 60% export earnings depend upon cotton sector cannot ignore this fact that international trade has proven to be the engine of economic growth. In the emerging trading system after establishment of World Trade Organization (WTO), competitiveness of Pakistan's cotton and textiles has assumed special significance and it calls for an immediate response. In this regard it is essential to examine past export performance to identify the areas of weakness. The study

also analyze the implication of the gradual phasing out of the Multifiber Arrangement (MFA) and the ultimate integration of textiles and clothing sector into GATT/WTO on Pakistan's economy.

1.1 The Basic Hypothesis

This study test the hypothesis regarding the impact of Agreement on Textile and Clothing (ATC) restrictions on Pakistan's exports of T&C to the United States (US), European Union (EU) and Canada. The study empirically estimates the impact of ATC on Pakistan's textiles sector by using gravity model. The approach is used to see the restrictiveness of textiles and clothing quotas on Pakistan's economy. The basic question to be addressed: has the ATC been more restrictive towards textile and clothing exports from Pakistan? In particular, do we find that the country's exports of T&C decreases, with the gradual phasing out of Multifiber Arrangement (MFA)?

1.2 Organization of the Study

The basic hypothesis to be tested in the empirical section is stated in the introductory chapter.

Chapter 2 attempts to assess the economic significance and weaknesses of textiles and clothing industry of Pakistan.

Chapter 3 is a survey of the origin and evolution of the ATC. The roots of the ATC are traced back to the 'Voluntary Export Restraints '(VERs) placed on Japanese textiles

exports by the USA in 1950, and the Short Term Arrangement (STA) and Long Term Arrangement (LTA) on cotton textiles in 1960s and Multifiber Arrangement in 1971 and lastly Agreement on textiles and clothing in 1994.

Chapter 4 briefly presents review of literature and theoretical framework.

Chapter 5 presents the gravity model that is used to test the restrictiveness of textiles quota toward Pakistan's textiles sectors. This chapter covers the description of the data used and also the constructions of variables of the empirical model.

Chapter 6 briefly discusses the statistical results obtained from applying the model.

In chapter 7, the study is concluded with a brief summary of the analysis to draw some policy implications.

CHAPTER

2

PAKISTAN'S TEXTILE INDUSTRY

2.1. Economic Significance

Agriculture is the mainstay of Pakistan's economy. Nearly 22 percent of total GDP and 44.8 percent of total employment is generated in agriculture. It also contributes substantially to Pakistan's exports. Agriculture also contributes to growth as a supplier of raw materials to Pakistan's industries, notably textile industry, the largest industrial sub-sector of the economy. Not only that 44.8 percent of country's work force is employed in agriculture but 65.9 percent of country's population living in the areas is directly or indirectly linked with agriculture for their livelihood.

2.1.1 Cotton

Pakistan is a major cotton producing and exporting country. Cotton is not only an export–earning crop but also provides raw material to the local textile industries. It accounts for 8.6 percent of the value added in agriculture and about 1.9 percent to GDP[1]. Cotton is the main cash crop which contributes substantially to the national income. Pakistan has a comparative advantage in cotton production. Raw cotton and cotton based products are the main export items of the country.

It may be mentioned that British India did produce cotton but manufacturing facility in the sub-continent was not optimally developed. The rulers of sub-continent had

[1] Economic Survey 2005-06

developed all such value addition facilities in England. The British Industrial Revolution gave an edge to them and London, Manchester and Lancashire grew into enormous manufacturing centers for supplying to the subcontinent. The textiles from England penetrated every nook and corner of India that destroyed even the artisan and its craft adding to a substantial degree of unemployment. It reduced this region merely as a source of raw material and manufacturing could not develop. This can be visualized from the fact that at the time of independence Pakistan had no industrial base and inherited only one textile mill, the Lyallpur Cotton Mill in Lyallpur (now Faisalabad), which has since long been dismantled and disappeared from the face of the earth. It produced only cotton yarn and gray cloth and none of the printed fabrics.

At the time of independence, Pakistan had few significant natural resources and little modern industry. Basically it was an agriculture country, so preference was given to develop the irrigation system. Moreover its climate was suitable for several crops including raw cotton. Soon after independence, under liberal public policy, a number of textile units were set-up at Faisalabad, Karachi and Multan. Within a decade after independence the country became self-sufficient in cotton production and started exporting gray cloth and cotton yarn. This crop has come to play a significant part in the economic development of Pakistan.

The Pakistan cotton industry experienced rapid expansion over a number of years largely driven by the policy reforms of late eighties. The then government reduced tariff rates on import of cotton spinning machinery and abolished restrictions on the establishment of

spinning and weaving mills, production of cotton yarn surged from 0.40 million tones in 1984 to 1.5 million tones in 1997. Similarly, production of cotton fabrics increased to 1.1 million tones in 1996 depicting an increase of more than 260 percent over 1984. These reforms stimulated the cotton mill industry and the cotton production in the country responded accordingly, which increased impressively, by an average of 11 percent annually between 1984 and 1995, touching a peak level of 2.18 million tones in 1991 from 1.01 million tones during 1984. The output increased to 1.67 million tones in 1995-97, double that of 1968-70 due primarily to 76% increase in planted area from 1.77 to 3.01 million hectares and 94% increase in yield per hectare from 298 to 577 kilograms during same period. In the recent years the area and production of cotton especially in Punjab declined as the farmers switched to alternate crops such as rice and sugarcane, primarily due to unfavourable weather conditions and increase in incidence of cotton pests and diseases like white aphid and leaf curl virus.

Table 2.1

Production of Cotton

Years	000 tonnes	000 Bales
1995-96	1802	10595
1996-97	1594	9374
1997-98	1562	9184
1998-99	1495	8790
1999-00	1912	11240
2000-01	1826	10732
2001-02	1805	10613
2002-03	1737	10211
2003-04	1709	10048
2004-05	2426	14263
2005-06 p	2122	12417

Source: Economic Survey 2005-06, pp 13\

Pakistan exports are highly concentrated in few items namely, cotton, leather, rice, synthetic textiles, and sports goods. These five categories of exports account for 74.5 percent of total exports during 2005-2006, with cotton alone contributing 58.7 percent. Table 2.2 shows the share of cotton along other highly exported items.

Table 2.2
Pakistan's major exports
(Percentage share in total export)

Years	cotton Manufactures	Leather	Rice	Synthetic Textile	Sports Goods	Others	Total
1994-95	59.8	9.3	4.7	7.4	1.9	16.9	100
1996-97	58.7	8.0	5.6	7.1	3.2	17.4	100
1998-99	61.3	7.7	5.6	6.1	3.7	15.6	100
1999-00	59.1	6.9	6.9	5.1	3.3	18.7	100
2000-01	61.0	6.3	6.3	5.3	3.3	17.8	100
2001-02	58.9	7.5	5.7	5.9	2.9	19.1	100
2002-03	59.4	6.8	4.9	4.5	3.3	21.1	100
2003-04	63.3	6.2	5.0	5.1	3.0	17.4	100
2004-05	62.3	5.4	5.2	3.8	2.6	20.7	100
2005-06	58.7	6.1	6.9	1.2	1.9	25.2	100

Source: Economic Survey 2005-06, pp -130.

2.1.2 Textiles A Leading Industry

Textile sector in Pakistan has been playing a pivotal role in the national economy. Pakistan's textile industry enjoys several competitive advantages over other producers. These include low wage labour, substantial investment incentives, large export quotas, and major non quota export destination in the far East. The modern textile industry in Pakistan got under way soon after independence in the early 1950s, but the clothing industry was developed only later. It started in earnest in the early 1960s, but experienced stagnation due to the several political and economic factors including the wars with India and the steep currency devaluation (56.8%) in May 1972 that inflated foreign exchange costs and duty payment on sewing machinery imports.

The clothing industry really got underway after 1978 when the imports of machinery were allowed free of duty. In 1977-78 there were 1955 sets of industrial sewing machines, but in 1991-92 50,000 were operating in the country, and these were mainly imported from Japan. The last two decades have witnessed a rapid growth in the garment industry for both woven and knitwear products and its status in the country's overall economy has therefore risen.

At present, Pakistan grows sufficient raw cotton to support her domestic textiles and clothing industry. From a position of being a commodity supplier of raw cotton, cotton yarn and grey cloth, the country is attempting to convert its raw and semi-processed products into higher value-added goods. Clothing, of course is a basic good which requires mass production to meet a large and growing demand all over the world. Some degree of mechanization of clothing has got under way with the introduction of a new generation of sewing machines.

Although some official effort has been extended to help develop the textiles industry, very little government attention has been paid to upgrading the clothing sector. Restrictions upon the import of the raw material have also discouraged the development of the downstream industries. For these reasons the scope for the further development of the clothing industry has been constrained because it is dependent on the raw material produced by the upstream sector, which has continued to produce poor quality products.

Garments made-ups and bed wear are the most important export products with an export value of about $1.3 billion each. Knit wear garments and cotton yarn also have important shares in total exports.

Moreover the textile sector contributes around 8.5 percent to GDP, employs 38 percent of total manufacturing labour force, and contributes between 60-70 percent to total merchandise exports. Indeed, with exports reaching about $8.6 billion in 2004-05, Pakistan is one of the largest textile exporter in the world.

Table 2.3

Leading exporters of textiles, 2003

	Value (Billion $)	Share in world (Percentage)			
	2003	1980	1990	2000	2003
China	26.90	4.6	6.9	10.5	15.9
Hong Kong, China	13.08	-	-	-	-
United States	10.92	6.8	4.8	7.1	6.4
Korea, Republic of	10.12	4.0	5.8	8.2	6.0
India	6.51	2.4	2.1	3.9	3.8
Pakistan	5.81	1.6	2.6	2.9	3.4
Turkey	5.24	0.6	1.4	2.4	3.1
Czech Republic	1.65	-	-	0.8	1.0

Source: WTO International Trade Statistics 2003

The variety of textiles products ranges from cotton yarn to knitwear. Each successive stage, that is, from the growing of cotton to its ginning, spinning, weaving and ultimate finished product is a value added process. The product is tradeable at each stage of production, but more the value added the greater economic contribution accrues to the economy. Overall, the US and the EU are the Pakistan largest trading partners accounting for 25 percent and 20 percent share of Pakistani exports respectively.

2.2.1 Stages of Textile Production

Textile production is comprised of cotton ginning, cotton yarn, cotton fabric, fabric processing (grey-dyed-printed), home textiles, towels, hosiery & knitwear and readymade garments. These components are being produced both in large scale organized sector as well as in unorganized cottage/small and medium units. The performance of these various ancillary textile industries is evaluated below.

i. Cotton Ginning Sector

Cotton is a natural fiber used primarily as a raw material for textiles. Cotton's strength, absorbedency, and capacity to be washed and dyed also make it adaptable to a considerable variety of textile products. Leading producers of cotton are USA, China, India, Pakistan, Uzbekistan and Turkey. The current market share of cottons is 56 percent in all fibers. Textile fibers are divided into three basic types according to their sources such as Cotton Fiber, Man Made Fiber and Wool. In the last ten years, the percentage share of cotton has shrunk from 48 percent to 39 percent in the total world Fiber and Wool. Man made Fibers that include polyester, acrylic, nylon; rayon and viscose have

taken more than 58 percent of the total share. Polyester has by far the largest share within the man made fibers, which is more than 80 percent.

Ginning is the first mechanical process involved in the processing of cotton. Ginning is the process for separating lint from seed to cotton. The ginning industry has mushroomed in the cotton growing areas of Pakistan informally, without adequate regulations. Ginning industry has installed capacity of more than one million bales on a single shift basis and a total capacity of around 20 million bales on three shift bases, part of which lies unutilized.

ii. Cotton spinning sector

Spinning is the process of converting fibers into yarn. This is the first process of value chain that adds value to cotton by converting into a new product i.e conversion from gained cotton into cotton yarn. If spinning industry produces sub-standard yarn, its effect goes right across the entire value chain.

Pakistan is the third largest player in Asia with a spinning capacity of 5 percent of the total world and 7.6 percent of the capacity in Asia. Pakistan growth rates have been 6.2 percent per annum and are second only to Iran amongst the major players. At present, cotton spinning sector is comprised of 458 textile units (50 composite units and 408 spinning units) with 8.8 million spindles and 77 thousand rotors in operation with capacity utilization of 87 percent and 49 percent respectively, during 2005-06.

iii. Weaving and Made-up Sector

The pattern of production is different than spinning sector. There are three different sub-sectors in weaving viz, Integrated, independent Weaving units, and power Loom units. Investment has taken place in shuttle less looms, both in integrated and independent weaving sector. Further investment in this sector will be forthcoming in the medium term. The power loom sector has modernized and registered a phenomenal growth over the last two decades. The growth in power loom sector owes to a large extent on the government policies pursued this far as well increased demand for the product. This sector is producing comparatively low value added Grey Cloth of mostly inferior quality. However the performance of cloth sector remained far better than the last year.

Table 2.4

Installed and Capacity Worked in Weaving Sector

Category	Installed Capacity (Nos)	Effective/Capacity worked (Nos)
Integrated Textile Units	9050	4350
Independent Weaving Units	27500	27000
Power Loom Sector	295442	285442
Total	331992	316792

Source: Economic Survey 2005-06, pp-31]

iv. Cotton Cloth

While the production of cloth in mill sector is reported the same is not true with production of non mill sector, and therefore, there numbers are estimated. What is

surprising is that the production of non-mill sector which is seven times more than mills sector is not being reported. The production of the cloth, both from mills and non-mills sector have registered an impressive growth of 14.0 percent during 2005-06, thereby serving as the main strength for down stream sectors like bed wear, made ups and garments.

v. Textile Down-Stream Industry:

This is the most dynamic segment of the textile industry. The major product groups are Towels, Tents & Canvas, Cotton bags, Bed-Wear, Hosiery & Knitwear and Readymade Garments. The description of these segments is as follows:-

a. Hosiery Industry

There are about 12,000 knitting machines spread all over the country. The capacity utilization is approximately 70 percent. There is greater reliance on the development of this industry as there is substantial value addition in the form of knitwear. Besides locally manufactured machinery, liberal imports of machinery under different modes are also being made and the capacity based on the export is being developed. This sector has tremendous exports potential.

b. Ready made Garment Industry

Pakistan with total exports of around US$1 billion has a meager share of 1 percent in the global apparel market. The apparel export product mix from Pakistan is heavily tilted towards men's wear and knitted garments. The major thrust of garments and the made-

ups exports from Pakistan is on the USA market. The European Union is the second largest market for garments manufacturers from Pakistan. Majors markets that Pakistani manufacturers have so far not been able to explore are the Japanese, Far East and Middle East markets these markets demand high product standards and in return offers high unit price realizations. The shift towards newer product and non-traditional markets can only be brought about by more emphasis on synthetic garments, development of a marketing and research infrastructure for the industry.

The production of the garments and made-ups in Pakistan is concentrated mainly in Lahore, Faisalabad and Karachi. These three clusters have their own specialties. Faisalabad caters more to Home Textile; Lahore is the home of knitwear and the Karachi lives up to its reputation of being mini Pakistan. Karachi has established itself both in knit as well as woven side of the industry.

c. Towel Industry

There are about 7500 towel looms in the country in both organized and unorganized sector. This industry is predominately export based and its growth has all the time depended on export outlets. Over 300 percent increase in Export of towel in the past few years indicate that tremendous possibilities exist for further expansion provided the existing towels manufacturing factories are up graded to produce higher values towels. The Pakistani Towel industry at large is using locally manufactured power looms. There are some 9000 locally manufactured looms being used by the industry. However some units are also equipped with imported auto looms and their number is about 250.

Table 2.5

Exports of Cotton Manufactures

(US $ Million)

Period	Cotton Cloth	Towel	Bed Wear	Other Made-up	Garments	Hosiery
1990-91	675.8	129.4	246.2	108.9	497.1	333.6
1991-92	819.4	136.7	284	113.5	613.5	425.1
1992-93	863.1	139	351.6	125.5	617.7	464.1
1993-94	820.6	129.2	285.6	129.4	612.2	509.1
1994-95	1081.4	144.8	340.2	163.5	641.7	688.5
1995-96	1275.9	174.1	422.2	179.1	648.5	703.4
1996-97	1262.4	194.1	456.3	208.7	736.4	688.9
1997-98	1250.3	200.1	508.8	245.8	746.5	696.7
1998-99	1115.2	177.7	611	255.3	651.2	742.1
1999-00	1096.2	195.6	709.9	307.6	771.7	886.7
2000-01	1035	243	734.9	328.2	827.5	910.3
2001-02	1132.7	269.8	918.5	351.3	882	841.5
2002-03	1345.6	374.8	1329	359.7	1092.6	1146.6
2003-04	1711.7	404	1383	417	993	1459
2004-05	1863	520	1450	466	1088	1635

Source: All Pakistan Textile Mills Association 2005-06

d. Tarpaulin and Canvas

Canvas exports can be subdivided into five categories i.e tarpaulins, awnings and sun blinds, tents, sails, pneumatic mattresses and camping goods. Although all of the different

types of canvas are being manufactured in Pakistan has acquired a degree of specialization in the manufacture of tarpaulins and canvas. Being the highest raw cotton consuming sector its production capacity is more than 100 million square meters and around 90 percent of its production is exported.

Table 2.6

Export of Tents & Canvas

Years	Quantity (Tons)	Value (000$)	Unit price ($/KG)
1995-96	15309	39509	2.58
1996-97	13924	36238	2.6
1997-98	18885	58081	3.08
1998-99	16405	40785	2.49
1999-00	20894	52926	2.53
2000-01	21757	50011	2.29
2001-02	21470	47463	2.21
2002-03	32211	73288	2.28
2003-04	31919	74757	2.34
2004-05	26436	66569	2.52

Source: All Pakistan Textile Mills Association 2005-06

vi. Synthetic Fiber Manufacturing Sector

This sector has made progress in line with demand of the textile industry. Presently there are seven polyester fiber units with production capacity of 625,000 tons per annum, two acrylic fiber units of which one unit has started its commercial production in December 1999 with rated capacity of 25,000 tones per annum.

vii. Filament Yarn Manufacturing Industry

The synthetic filament yarn manufacturing industry picked up momentum during 5thFive Year Plan when demand and hence imports increased and private sector was permitted to make feasible investment in the rising market conditions. Following three kinds of filament yarn are manufactured locally:

Table 2.7

Capacity of Synthetic Filament Yarn

Type of Yarn	No. of Units	Production capacity (Metric Tones)
Accetate Rayon Yarn	1	3000
Nylon Filament Yarn	3	2000
Polyester Filament Yarn	21	95000
Total		100,000

Source: Economic Survey of Pakistan 2005-06

viii. Art Silk and Synthetic Weaving Industry

Art silk and synthetic weaving industry has developed over the time on cottage based powers looms units comprising of 8-10 looms spread all over the country. There are approximately 90,000 looms in operation of which 30,000 looms are working on blended yarn and 60,000 loom on filament yarn. Besides it, there are some mobile looms which become operational on market demand. The major concentration is in Karachi, Faislabad, Gujrawala, and Jalalpur Jattan as well as in the unsettle area (Bara, Swat, Khyber Agency and Waziristan).

2.2 Strength and weakness

An overview of the textile and clothing industry in Pakistan, starting with cotton growing and ending with marketing of finished garments, reveals that each stage of textile production is ridden with a host of problems. Common factors that have adversely effected the entire chain of textile production in Pakistan are: dependence on outdated technology; under utilization of capacity; scarcity of manpower; and poor compliance with quality standards. This section deals with the weakness of the textile section at each stage of production.

(a) Cotton

The textile industry's primary requirement is the raw material-cotton. Cotton production in Pakistan faces a number of problems. The output per acre is very low because of outdated farming methods and the illiteracy of the farmer, who is not willing to learn new techniques of production. Seed is generally of poor quality and methods of plants protection are outdated. As a results, the cotton produced is contaminated and of poor quality.

Pakistan is the forth largest producer of cotton in the world, after China, the USA, and India. In 1996, Pakistan's quantitative share of world trade in cotton yarn was 29.7 percent and in cotton 8.3 percent. But its share in the global trade in textile and clothing was only 2.03 per cent. While global demand for textiles is increasing at an average rate of 2.5 percent it is declining in the case of Pakistan. This is attributed to heavy concentration of Pakistan's exports in the category of low value added products.

(b) Ginning

The basic problem of the ginning industry relates to its outdated technology, which is forty to fifty years old. Moreover, since contaminated-free cotton is not available at the ginning stage, proper cotton grading remains a serious problem. Secondly, ginners are constrained by liquidity, especially in the period when prices are low and they have to carry large inventories. Thirdly, the absence of national ginning research institute has lowered the level of efficiency as they fail to establish standards, thus adversely affecting the quality of ginned lint.

(c) Spinning

In Pakistan's textile industry emphasis is given on the spinning activity. Major proportion of yarn production is exported rather than utilizing large part of it for producing high value-added products like fabrics, of garments. This is an important structural weakness of our textile industry. This yarn imported by countries like Japan, Hong Kong, South Korea who have well flourished textile industry convert it into high value-added products and fetch much higher prices in international market. These countries do not grow cotton, but they have well-established textile industry because they have invested in modern manufacturing technology as well as in qualified and well trained work force. Whereas in Pakistan, textiles industry continues to suffer due to lack of investment, and well qualified work force, despite having the advantage of cotton and labour.

(d) Woven Fabrics and Weaving

In the weaving sector (organized mill sector) the installed loomage capacity has kept on shrinking. On the other hand the number of spindles have increases over the period from 1971-72 to 2004-05. This implies that the organized mill sector has made an utmost shift toward spinning and almost gave up efforts to develop or modernize the weaving sector. But this decline of fabric production in mill is compensated by the production in the non mill sector. The problem with the non mill sector is they have technology power looms in their units, which mostly produce narrow width poor quality gray fabrics, which is sold at a lower price. Moreover, Pakistani industry is working with outdated technology. Although the use of shuttle-less weaving machines has resulted in high growth in fabric production, the upgrading of the technology is necessary to meet the diverse demands of international and local markets. The weaving industry lacks proper dying and processing facilities, which means that its inferior products fail to fetch high prices in the global market.

(e) Processing

Processing is the most critical stage in the entire value chain of the textile industry. Since it started in the early 1980s, it remains the weakest link in the chain. Almost 40 percent of fabric exported from Pakistan is in unprocessed form. The major problems facing this sub sector relates to its untrained manpower and outdated technology. Labour employed in the textile sector is not properly trained, which means production of poor quality fabric, decrease production efficiency, and increased overall cost. Moreover, the technology employed by processing units is obsolete.

(f) Made Ups

This is the second largest value added sub sector of the textile industry. Bed wear and towels are the two largest product categories in terms of production and exports. Pakistan stands second in terms of bed wear exports but the sub sector lacks the planning and investment necessary to expand productive units. Producers should aim to shift from low market to high market segments and higher value products to increase profitability. Another major area which needs development is product design. Products need to be developed according to global trends and fashions since lack of design innovation reduces buyer interest.

(g) Apparel and Ready-Made Garments

In global terms, the apparel sector accounts for 53 percent of the total textile trade. Apparel is a changing business which requires innovative and fresh ideas for survival. As trends shifts to more special use garments, Pakistan needs to orient its production towards sportswear, industrial wear, and fashion garments. While Pakistan's apparel producers face tariff barriers, issues concerning environmental standards and working conditions are diverting exporters to other markets. The industry lacks innovative ideas and designs, fails to produce women's garments effectively, and lacks market diversification. Since Pakistan fails to improve marketing methods, survey global demand, generate design ideas, or improve human resource development, it fails to make positive changes in its apparel industry.

Even though Ready made Garments (RMG) is the highest value added sector of the textile industry, it has been handicapped by lack of skilled labour, absence of quality control, and insufficient management personnel. Exports of RMG from Pakistan are concentrated in selected markets of the EU, USA, Canada, resulting in stiff competition among RMG manufacturers and exporters.

2.3 Conclusion

The evidence provided in this part supports the conclusion that textiles sector in Pakistan has relied heavily on static comparative advantage in cotton production and did not really focus on the dynamics of increasing productivity. In spite of its existence for over 50 years, Pakistan's textile industry is still relying on cheap cotton, fiscal, monetary and commercial policy incentives and trade barriers for its survival. Even when an industry is viable without incentives and protection, competitiveness and comparative advantage are temporary according to the argument of product cycle theory. In the present world of technological development, static comparative advantage is more viable and lasts longer if accompanied by dynamic competitive advantage which requires inventions and innovations of the products and production process.

CHAPTER

3

EVOLUTION OF TEXTILE QUOTAS

The textile and clothing sector has played an important role in the economic development of many countries and in the industrial history of the world. The first materialized development occurs in England and then spread to the Europe, United States, Japan and then other countries. The General Agreement on Trade and tariff (GATT) was formed in 1947 to provide a forum to address world trade problems and it established several basic guidelines for a more open and liberal trade regime. At the time when the GATT was created in order to regulate international trade in the wake of the protectionism that characterized the 1930s, the British and the US textile and clothing industries were still dominant. In Asia, Japan started rebuilding her economy partly on the basis of textiles and the clothing, and soon became a major competitor in the global markets. While restraints were eased in other products, textiles and the clothing was never governed by liberal and non-discriminatory rules of GATT. It remained under the influence of the major governments.

In the early 1950s, growth in demand for cotton textiles in the developed countries was rather slow. Comparative advantage began to shift towards the industries of the developing countries. Japan and Hong Kong were the leaders in the textile exports to the western countries followed by South Korea and Taiwan. In the 1950s, and 1960s, other developing countries and several nations in the Eastern Europe began production in the

hope that the sector would permit them to become an important force in world markets. Following Japan, Hong Kong and South Korea, Singapore, India and Pakistan started a serious export trade in textiles and clothing to the markets of the developed countries. America feared the impact of Japanese imports. In 1955 British textile and clothing producers and the USA become increasingly concerned with the new threats and efforts began to stem the flow from low wages countries. By alleging that imports from low cost suppliers were likely to cause market disruption to their domestic industries, the developed countries signed a special agreement which permitted them to escape from certain GATT obligations and to negotiate a quantitative restraint arrangement on a discriminatory basis. The international trade in textiles and clothing was restricted in 1959 when Short Term Arrangement (STA) came into existence and, after that, it remained under the controlled regime of the STA, Long Term Arrangement (LTA) and Multifiber Arrangements (MFA). Through the passage of the time these regimes became more and more restricted.

3.1 The Short Term Agreement (STA) of the Textiles Trade 1961-62

Protectionism began in the late 1950s when Japanese textile exports began to penetrate the US market in great quantities. The USA worry over GATT arose, which produce the first Voluntary Export Restraint (VER) mechanism. The USA government successfully pressurized the Japanese government to agree to a VER on textiles in 1955.A second VER with Japan was put into effect in 1957, setting a five year limitations on cotton textile products. After the start of the second VER a different pattern in the world textile

trade emerged. That is when export from one country were controlled so textile and clothing products became more abundant from uncontrolled countries.

Table 3.1

US Imports of Cotton Manufactures

($ Million)

Countries	1956	1957	1958	1959	1960	1961
Total from all countries	154.3	136.2	150.0	201.03	248.3	203.3
Japan	84.1	65.3	71.7	76.7	74.1	69.4
Hong Kong	0.7	5.8	17.4	45.8	63.6	47.0
Other Asian countries	15.3	13.0	14.3	24.0	34.0	25.0
Egypt	0.4	0.5	0.3	0.3	5.9	1.0
Spain	0.3	0.3	0.4	1.6	7.2	3.2
Portugal	0.0	0.1	0.3	1.0	5.2	2.3

Source: Kitty G. Dickerson 1995

It is evident from the table 3.1 that Hong Kong and other suppliers responded rapidly to fill the gap that left by the restrictions placed on Japan's textile products. However, Hong Kong and other exporting states refused to agree to VERs. At the same time the British government urged the textile industries of Pakistan, India, and Hong Kong to limit their exports and obtained restraint agreements covering a three year period from 1959 for Hong Kong and in 1960 for the other two. The first sign of institutionalized protectionism appeared in the form of the Short Term Arrangement (STA) in July 1961 regulating the imports of cotton textiles. This was designed to prevent the rapid

penetration of imported textiles in the developed countries with a view to avoid serious injury or threat thereof to domestic producers.

3.2 The Long Term Agreement (LTA) of the Textile Trade

The Long Term agreement was drafted on the basis of USA proposals. These came into force on 1st October 1962. Its main objectives were to bring the burgeoning number of bilateral measures under multilateral surveillance; to explain rules and procedures contrary to the principles of non discrimination under Article 1; and to safeguard provision of the Article 19 of the GATT .Another aim was to establish a balance between the legitimate desire of the developing countries to gain access to new markets, and therefore further their development, and the interests of the importing countries in protecting their markets from disruption by low cost imports.

Both the STA and LTA contained procedures for governments of developed countries to follow if they claimed market disruption or threat of market disruption from imports. In such an event, importing countries were allowed to conclude bilateral agreements with the exporting countries, or imposed unilateral restraints if they could not secure agreements with the exporters

The LTA was an international regime that limited the volume of imports to 5 percent per year for most textile products. The twelve year term of the LTA witnessed growth in exports of textile products from developing countries, particularly due to the changing trends in consumer preferences for non cotton fibers. Developing countries textile and

clothing industries sought to overcome LTA control by switching to man made fiber products, which remained outside the LTA. Western textile industries wetness falls in employment over this period.

Table 3.2

Changes in Employment in Major Industrial Countries During LTA 1963—1972-73

(% change)

Countries	Textiles	Clothing	Combined
United States	12	8.2	9.8
Germany	-22.2	-5.7	-15.5
France	34	-17.5	12.5
Italy	-8.6	45.1	5.6
United Kingdom	-31.8	-22.4	-28.5
Nertherlands	-36.3	-59.1	-49.1
Japan	-8.8	55.5	-0.4

Source: United Nations, Year book of Industrial Statistics, 1971

On the basis of this import penetration the developed countries decided on a more restricted trade regime.

3.3 The Multi-Fiber Arrangement (MFA) 1974-1994

The two major events occurred during 1962-72 which effected the operation of LTA: first there was a very rapid increase in the use and trade of Man-Made Fiber (MMF) which were not covered under the LTA. Second, new entrants into the market were heavily concentrating on apparel which was not very well protected under the LTA. Strong

domestic pressure built up in the USA to widen the scope of the system and subsequently the US focused on amending the LTA so it would cover textile and apparel products of all three (hence the name multi-fiber) i.e. cotton, MMF and Wool. So the search was on for an internationally respectable figleaf to cover the abandonment of the GATT's first article in the case of the textile industry. The figleaf was found in the form of MFA. The USA initiative was successful and the MFA, which was the product of its effort went into effect on 1 January,1974 for an initial period of four years. This arrangement was renewed in 1974, 1981 and 1996, commonly referred to as MFA-I, MFA-II, MFA-III, MFA-IV, and the MFA members countries (both developed and developing countries) are as follows:

Table 3.3

MFA Members Countries

Developing countries		Developed Countries
Argentina	Bangladesh	Austria
Brazil	China	Belgium
Colombia	Dominican Rep.	Canada
Egypt	El Salvador	Denmark
Guatemala	Hong Kong	Finland
India	Indonesia	France
Jamaica	Korea South	Germany
Macao	Malaysia	Greece
Maldives Island	Mexico	Ireland
Pakistan	Philippines	Italy
Peru	Romania	Japan
Singapore	Sri Lanka	Netherlands
Thailand	Uruguay	Swedan
Yugoslavia		Switzerland
		UK
		USA

Source: Pakistan Textile Journal 1999

3.3.1 MFA-1 (1974-77)

The provisions introduced in MFA-I were designed to protect the interests of importing countries, including a minimum 6 percent growth rate for items under restraint. It instituted quota flexibility through "swing" adjustments that permitted the transfer of quotas across categories; "carry forward" allowances that permitted borrowing against a future year's quota; and "carry over" adjustments that allowed for unused quotas to be

added to subsequent year's imports. The MFA violated the Most Favoured Nation (MFN) principle by permitting discriminatory treatment among supplier countries. The most contentious aspects of the MFA was that it deviated from GATT 1947, the purpose of which was to promote freedom of trade and a reduction of trade barriers and its deviation from the principle of non-discrimination.

MFA-I, at its heart, was an instrument of forced consensus designed to manage the world textile trade to the advantage of countries that were fast losing international competitiveness in specific lines of production. It built up an elaborate regime for managing trade in order to avoid disruptive effects in individual markets and on individual lines of production in both importing and exporting countries. This agreement also aimed at furthering development and secures a substantial increase in their exports earnings from textile products and to provide for a greater share for Least Developing Countries (LDCs) in world trade.

3.3.2 MFA-II (1977-81)

MFA-II came into force on 1st January 1978 as result of a protocol signed on 14th December 1977. The participating countries agreed to renew the MFA for a second term on the basis of the recommendations of the textile committee of GATT formed for the working of MFA-I.

The major restrictive change in MFA-II came from the European Communities (EC) in the shape of the reasonable departure clause. Under this, trading partners mutually agreed

to depart from the general terms of the MFA in particular elements and in particular cases. These departures were to be temporary and participants were obliged to return to the framework of the MFA in at the shortest possible time. The aim of introducing this clause was to achieve stabilisation of imports, particularly for products with high penetration rate on the EC. According to the developing countries point of view, this clause served the purpose of appeasing strong projectionist sentiments within importing countries by limiting the expansion of LDC exports into developed countries thus making MFA-II more restrictive than MFA-I.

3.3.3 MFA-III (1981-July 86)

Negotiations for the third renewal of the MFA continued throughout 1981. The third MFA came into force in January 1982 and ended on 31st July 1986. The developing countries were better prepared and more united this time. The negotiations took place against a background of recession and hence a persistent attempts were made by the developed countries to restrict imports further. Both sides ruled out the possibility of modifying the original MFA. However, the EC brought in over 33 restrictions following the triggering off, a device known as the "basket extractor" mechanism. According to this, if the exports of an unrestricted exporting country reached a certain threshold (for example 1%) of EC imports, the EC would seek consultation and apply restraints after the threshold levels had been greatly exceeded.

One major innovation in the 1981 Protocol of Extension was the so-called "anti surge" clause. This provided the importing country with an alternative restraint of safeguarding

their internal market in the event of sharp and substantial increases in imports of the most sensitive products with previously under-utilised quotas (Robin and Paul 1988, GATT Report, 1987). Another concession negotiated by the importing countries was the possibility of reducing quotas for dominant suppliers.

3.3.4 MFA-IV (August 1986-92)

This entered into force on 1 August 1986 for a period of five years. The United States and Canada called for tighter restrictions, while the EC was ready to drop some of the more drastic aspects of the 1981 Protocol. The text of the Arrangement remained unchanged, while some important modifications were incorporated. The terms of the renewal provided expanded coverage, anti-surge provision, anti-fraud measures, greater room for departures from the MFA's provision for import growth and for special treatment of imports in certain areas. MFA restraints were extended to cover textiles made of vegetable fibres, a blend of vegetable fibre, and blends containing silk. After strong opposition from China, ramie (one such vegetable fibre) was included under the controlled fibres group. Silk blends and linen were also included. All these fibres were subject to the restraints.

3.4 The Agreement on Textile and Clothing (ATC) 1995-2004

At the start of the Uruguay Round in 1986, Trade Ministers agreed to negotiate modalities for eventual integration of this sector into the GATT, on the basis of strengthened GATT rules and disciplines. This mandate reflected the key importance

that developing countries attached to bring this sector back to GATT rules and that of developed countries to strengthen the GATT rules and disciplines.

Given the political sensitivity of this sector in both developed and developing countries, it was only after lengthy and difficult negotiations over a period of seven years that participants were able to arrive at the necessary compromises to bring about the ATC.

3.4.1 Key Elements of ATC

The ATC is built upon six key elements, which are:

- The product coverage of the agreement.
- The Program for integrating the products covered by the Agreement into GATT 1994 Rules and Disciplines
- The progressive liberalization of the restraints carried over from the Former MFA through improved growth Rates
- The treatment of quantitative restrictions (other than MFA Restraints)
- The transitional safeguard mechanism to deal with further cases of serious damage or actual threat thereof
- Supervision, monitoring and reporting by the Textiles Monitoring Body (TMB)

In addition, other important provisions of the Agreement deal with its implementation, administration, procedures in cases of circumvention, special and differential treatment for certain exporters and the overall obligations of Members.

3.5 The Product Coverage of the ATC

3.5.1 Product Coverage

The product coverage contained in the Annexure to the ATC encompasses Chapters 50-63 of the Harmonized Commodity Description and Coding System (HS) Nomenclature. In addition, some specific products from HS Chapters 30-49 and 64-96 are also included. Following are HS category headings at the six-digit HS level:

HS Chapter 50	Silk
HS Chapter 51	Wool, fine/coarse animal hair, horsehair yarn & fabric
HS Chapter 52	Cotton
HS Chapter 53	Other vegetable textile fibres; paper yarn & woven fabrics
HS Chapter 54	Man-made filaments
HS Chapter 55	Man-made staple fibres
HS Chapter 56	Wadding, felt & non-woven; yarns; twine, cordage, etc.
HS Chapter 57	Carpets and other textile floor coverings
HS Chapter 58	Special woven fabrics; tufted textile fabrics; lace; tapestries etc.
HS Chapter 59	Impregnated, coated, cover/laminated textile fabric etc.
HS Chapter 60	Knitted or crocheted fabrics
HS Chapter 61	Articles of apparel & clothing accessories, knitted or crocheted
HS Chapter 62	Articles of apparel & clothing accessories, not knitted/ crocheted
HS Chapter 63	Other made up textile articles; sets; worn clothing etc.
HS Chapters 30-49	(Certain Specific T&C Products from these Chapters)

3.5.2 Basis For Product Coverage

The list of products under the Agreement covered all textiles and clothing products that were previously subject to MFA or non-MFA restraints. As such all restraints in place on 1st January 1995 (Canada, EU, Norway and the United States), the product coverage includes not only products subject to restraints in each of these Members, but also other products not subject to restraints in them.

It may be noted that all the products are not covered under the ATC, for example, "raw materials", the silk group, silk yarn; silk cocoons, raw silk and silk waste are excluded. In cotton group the raw cotton is excluded. In general terms, in the case of raw natural materials (silk, cotton, wool, vegetable fibres), the ATC coverage begins with the first manufacturing process; whereas, in Man-Made Fibers (MMF), the coverage begins at the earliest stage i.e. synthetic filaments.

3.6 The Integration Programme Into GATT Rules

The Agreement calls for notification of all MFA or MFA-type restraints to the TMB to be carried over into the ATC until the products involved are integrated into GATT rules and the restraint is eliminated. It also sets out the procedures for the progressive integration of the products covered by the Agreement into GATT 1994 rules and disciplines.

3.7 Quantitative Restrictions in Force at the Outside

In order to officially inscribe all restraints in place at the beginning of the agreement all quantitative restrictions maintained by the member countries were to be notified within

60 days to the Textiles Monitoring Body". In practice, this obligation applied to four WTO Members: Canada, the EU, Norway and the United States. In response to this requirement, Canada carried over into the ATC 295 specific limits, the EU notified restraints comprising 198 specific levels plus 20 sub-limits. Norway notified 54 restraints and the United States notified 758 specific limits and sub-limits.

3.8 The Integration Programmes

The second central element of the Agreement is the four-stage integration of the products covered by the Agreement into GATT 1994. What does integration mean? It means that the product integrated into GATT 1994, would no longer be subject to bilateral restraints. After integration, only a safeguard measure is possible if considered necessary under GATT Article XIX (sudden surge in imports).

3.9 Four Stages of Integration

The integration process is being carried out progressively, in four stages, over a ten-year transition period (Table 3.4 and Chart 3.1) that is given as under:

Table 3.4

Integration Programme and Growth Rates under the Agreement on Textiles and Clothing

Four steps over 10 years

The schedule for freeing textiles and garments products from import quotas (and returning them to GATT rules), and how fast remaining quotas should expand. This example is based on the commonly-used 6% annual expansion rate of the old Multifibre Arrangement. The actual rates used under the MFA varied from product to product.

Step	Percentage of products to be brought under GATT (including removal of any quotas)	How fast remaining quotas should open up, if 1994 rate was 6%
Step1: 1 Jan 1995 to 31 Dec 1997	16% (minimum, taking 1990 imports as base)	6.96% per year
Step2: 1 Jan 1998 to 31 Dec 2001	17%	8.7% per year
Step3: 1 Jan 2002 to 31 Dec 2004	18%	11.05% per year
Step4: 1 Jan 2005 *Full integration into GATT (and final elimination of quotas). Agreement on Textiles and Clothing terminates automatically.*	49% (maximum)	No quotas left

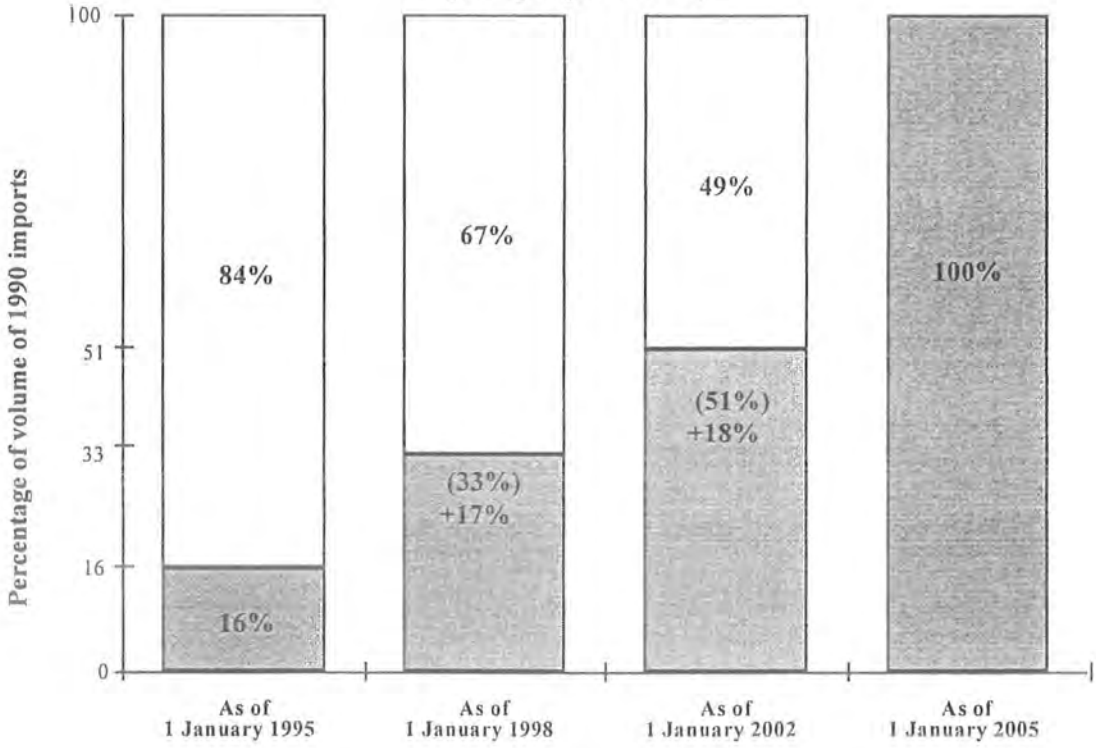
The actual formula for import growth under quotas is:
by *0.16* x *pre-1995 growth rate* in the first step;
0.25 x *Step 1 growth rate* in the second step; and
0.27 x *Step 2 growth rate* in the third step.

Source: WTO Secretariat, Geneva.2001

CHART 3.1

AGREEMENT ON TEXTILES AND CLOTHING

Operation of the integration process of Article 2 (paragraphs 6 & 8)



3.11 Selection of Products Integration

Each importing Member decides itself which products it will integrate at each stage to reach the required percentage thresholds. The only requirement is that the list of products submitted at each stage in the integration process must include products from each of the four groupings: tops and yarns, fabrics, made-up textile products and clothing.

3.12 Study regions

For our study, we have selected USA, EU, and Canada from developed countries. The reasons are as follow:

1- According to WTO Statistics, 2001:

   a- EU, USA, China, Hong Kong, Mexico, Japan, Canada and South Korea imports 77 percent of world's textile.

   b- EU, USA, Canada, Hong Kong and China account for 90 percent of world's clothing exports.

   c- Out of the major importers, EU, USA and Canada are quota restricted markets and the rest operate under open market conditions.

2- For, Pakistan, the major quota restricted markets are USA, EU, Canada and Norway. And over the time (i.e. 1990-2002) Pakistan's textiles were exported to restricted markets, instead of the unrestricted market.

Table-3.5

Share of Production Directed to Restricted Markets

(% share)

Years	Textile and Clothing	Textile only
1991	47.9	38.7
1992	46.9	38.0
1993	51.6	39.1
1994	53.0	38.8
1995	50.4	37.2
1996	51.1	40.0
1997	55.7	43.7
1998	61.7	50.1
1999	62.3	49.7
2000	61.1	49.2
2001	61.3	50.1
2002	62.1	52.4

Source: Pakistan data reported to UN-COMTRADE 2003

3- USA and EU are the major markets for Pakistan's textile and clothing.

Table-3.6

Quota imposing countries' share in Pakistan's textile exports

County	Percentage
EU	50
USA	44.5

Source: Pakistan Textile Journal 2003

4- The data is available for USA, EU, and Canada with no missing values for the period under review (1995-2004).

3.13 Pakistan and ATC

Pakistan, under the agreement, is committed to remove Quantitative Restrictions (QRs) on import of textiles. This can be phased over a ten year period. Pakistan has to open up its market for textiles product. This would ensure wider availability of quality fabrics for the clothing industry- an essential requirement for a dynamic clothing industry. Another implication of the reciprocity on the textile and clothing sector would be that Pakistan has to protect its internal market from cheap suppliers like Indonesia, China and India. In order to protect the domestic textile industry, Pakistan has exercised its right to invoke the transitional safeguard mechanism. Pakistan will have to reduce and bind its tariffs on the import of textiles and clothing in the range of 25 % to 60%.

At present moment, Pakistan is among the world's cheapest suppliers of both textiles and clothing products because of relatively low wages and the availability of raw cotton. In order to avoid from the cheaper textile of Pakistan they are attempting to seek such sources from within their own geographical proximity. Canada and US joined hands with Mexico and established NAFTA. The textile and clothing industries of those regions have now been firmly established on the US Mexico border. Similarly, the EU has developed preferential arrangements with a number of African countries and has promoted the Outward Processing Trade (OPT) with Central and Eastern Europe countries. One purpose of all these strategies is to avoid an import surge from the lower cost developing

countries. Pakistan's trade is seriously affected with this growing bias toward intra-regional trade.

3.14 Pakistan's textile trade with USA, EU and Canada

Pakistan's textile industry is mainly constraint by the EU, USA. The quantitative restrictions imposed by the Canada were not much harsh. Pakistan's industry is constrained by quota limits in bed wear, made-ups, kitted garments, woven trousers and shorts, hosiery products, plain and printed cloth in the USA market. In EU, quota limitations are constraining exports of yarn, cotton, cotton fabrics, synthetic fabrics (blended), knitted shirts and woven trousers. Canada imposed quota restrictions on cotton, cotton fabrics, synthetic fibers, knitted shirts and trousers.

Pakistan and partners countries trade relationship is discussed in the following section.

3.14.1 Pakistan-USA textile trade

According to the GATT 1994 Agreement on Textiles and Clothing, the schedule for phasing out the MFA quota provided an opportunity to the US authorities to remove some of the least sensitive products in the ten year transition period in the hope that the impact on the market will not be felt for many years. This might give time to the US industry to make adjustments. The USA has adopted a somewhat different approach from the EU in the way that it has published product details for the three stages of integration. which is as given in Appendix-8.1.

The USA's programme of integrating the textile trade into the GATT principles contains at least 30 percent of categories which were never subjected to quota restrictions, including items such as parachutes, life jackets, seat belts, jute sacks, flags, umbrellas and Articles made of 100% silk. In the first stage, the USA programme liberalized baby garments (Category 239), down filled coats (Category 353, 334, 653, 654) and hosiery (Category 632). It is important to note that none of the products integrated in the first stage were under quota. Pakistan's industry is constrained by quota limits in bed wear, made-ups, kitted garments, woven trousers & shorts, hosiery products, plain and printed cloth in the USA market.

The USA market is tighter for Pakistan as compare to EU and Canada. The US government imposes more quotas on Pakistan's textile and clothing products. Pakistan has a binding quota for some categories of T&C and on most categories it is non binding. Quota utilization rate for both textile and clothing is as follow:

Table-3.7

Quota Utilization rate on Clothing for USA (2004)

Categories	Description	Fill Rate (%)
237	play suit	13.13
239	infant wear of cotton	8.39
331	gloves and mittens	34.24
334	other coat M& B	98.3
335	coat women	79.2
336	dresses	79.1
33	knitted shirts M&B I	100
339	knitted shirts and blouses	90.6
340	shirts not knitted	41.8
341	shirts and blouses	11.8
342	skirts	33.2
347	trousers, slacks and shorts	101.84
351/651	night wears	105.3
352/652	under wear	106.3
359/659	other cotton apparel	4.93
369	flat dish towel	111
638	knit shirts	82.44
647	trousers, slacks and shorts	46.70

Source: Author's own calculation from ministry of commerce 2004

Table-3.8

Quota Utilization rate on Textiles For USA (2004)

Categories	Description	Fill Rate (%)
219	duck and MMF	68.8
313/22	cotton sheeting	51.3
314	cotton poplin and broad cloth	79.6
315	cotton print cloth	54.6
317/617	cotton twill/sateen	99
613/614	sheeting/pop lion	63.8
615	print cloth	54.5
625	poplin and broad cloth	44.6
626	print cloth	25.1
627	sheeting	-
628	twills and sateens	9.2
629	other MMF	3.9

Source: Author's own calculation from ministry of commerce 2004

3.14.2 Pakistan- EU Textile Trade

The EU has adopted a rather different policy for integration than the USA. The EU approach is product-oriented to limit the surge of the most sensitive products at least during the transition period. It did not publish a list of products for integration; it only notified those products which have been integrated at the beginning of the first and second stage in January 1995 and 1998. No quotas of important items were integrated in the first phase. The entire 16% trade liberalized on 1st January 1995 was never subject to quotas in the first place. This policy leaves options open and delays the development of import penetration. Thus clothing products with high levels of import penetration such as T-shirts, pullovers, blouses and shirts or those likely to cause market disruption would be

integrated only after 2005. The purpose of this approach is to avoid a further decline in output and employment in the EU textile and clothing industry. Another objective is linking the quota integration process with the improvements in market access of developing countries. The aim is to provide greater opportunities for EU firms to compensate for the lose of their domestic markets by importing from developing countries. The major countries, who have not opened their markets, are Pakistan, India and Indonesia. Now these have shifted to open their markets, to reduce tariffs and allow competition from foreign firms. They provide also opportunities to Western companies to invest and manufacture on a commission basis.

Pakistan has a high quota utilization rate on textiles but low quota utilization rate on clothing for the exports to EU.

Table-3.9

Quota Utilization rate on Textiles for EU(2004)

category	description	Fill Rate (%)
1	cotton yarn	100
2	cotton fabrics	99.4
2a	fabric other than unbleached	-
3	blended fabrics	101
9	woven terry toilet lien	98
18	woven under garments	-
20	bed linen	99
39	table linen	99

Source: Author's own calculation from ministry of commerce 2004

Table 3.10

Quota Utilization rate on Clothing for EU(2004)

category	description	Fill Rate (%)
4	knitted shirts	89.55
5	knitted jersies	92
6	shorts/trousers	96
7	blouses	71.9
8	shirts	32.5
26	dresses	12.1
28	trousers, bib & brace overall	21.7

Source: Author's own calculation from ministry of commerce 2004

3.14.3 Pakistan- Canada Textile Trade

Canada has fully discharged its obligations under the ATC and has, in fact, liberalized further and faster than required. Canada gives a chance to the least developed country (LDC)'s exporters to make significant inroads into the Canadian apparel market. Moreover, the proportion of imports from LDCs that was subject to quota had been steadily declined, dropping from 60% to 53% 1998. Beyond Canada's WTO commitments, quotas for tailored collared shirts were eliminated in 1997 and quotas on some blouses, ensembles and outerwear were increased or removed entirely in 1998. AT the end of ATC, all categories including overalls, all knit and woven shirts, blouses and tops, all baby wear, swimwear and women's, girls and female children ensembles and suits was liberalized by the Canada.

Imposition of textile's quotas were not much restrictive for Pakistan and Pakistan has a high utilization rate on some categories and low rate on most categories.

Table-3.11

Quota Utilization rate on Textiles for Canada (2004)

category	description	Fill Rate (%)
41a	bed sheets	54.6
41b	pillow cases	54.5
42a	cotton/towel wash	99.3

Source: Author's own calculation from ministry of commerce 2004

Table-3.12

Quota Utilization rate on Clothing for Canada (2004)

Category	Description	Fill Rate (%)
2	winter outerwear	26.6
3	sportswear coordinates	19.2
5	trousers, shirts	75.2
6	shirts (men & boys)	-
7	shirts/blouses	-
8	t-shirts	33.7
9	underwear	65.2
10	sleep wear	31.1

Source: Author's own calculation from ministry of commerce 2004

3.15 Conclusion

This Chapter has given an overview about the history of the imposition of quotas on Pakistan's textiles and clothing exports. It shows that the USA market remained tighter for Pakistan as compared to EU and Canada. The quantitative restriction imposed by the Canada were not much harsh though quota restrictions imposed by EU and USA were relatively more stringent.

CHAPTER

4

LITERATURE REVIEW

Major industrial countries introduced quotas on imports of textile-related products from developing countries in 1974 under the Multi-Fibre Agreement (MFA). In 1995, the MFA was replaced by the Agreement on Textiles and Clothing (ATC), which called for a phase-out of the quantitative restrictions in several stages over a ten-year period.

The Agreement on Textiles and Clothing (ATC) promises abolition of all quota restrictions in international trade in textiles and clothing by the year 2005. This provides tremendous scope for export expansion from developing countries. However, there is a flip side to this issue: while the quotas have undoubtedly been restrictive, they have provided assured markets and thus protected uncompetitive countries at the expense of competitive ones.

The objective of our research is to evaluate the effect of ATC on export performance of textile sector in Pakistan. There are many studies that have been conducted to analyze the impact of phasing out of MFA in different regions and countries. A review of existing literature reveals that mostly researchers have analyzed the impact of ATC conducting the "Gravity Model". However, few of them have used other approaches as well.

A demand system for apparel exports from Asia to the US is estimated by Panagariya et

al. (2001). The study uses the fact that restraints were binding to simplify the typical demand system: quantities were treated as exogenous, and prices as endogenous. The Multifiber Arrangement (MFA) system was not itself the subject of the analysis, but the maintained hypothesis. The study concludes that within this system the price elasticities of demand for textiles and apparel in the US are quite high: for example, they estimated a price elasticity of 26 for Bangladesh's textiles and apparel exports to the US.

The incidence of U.S. voluntary export restraints under the Multifiber Arrangement (MFA) is investigated by Dean (1990). A bivariate probit model with sample selection was estimated to test the major determinants of restraints under MFA-1 (1974-77) and under MFA-II and MFA-III (1978-1985). However results suggest that restraints under the two regimes are uncorrelated. Surprisingly, developing countries were found to be more likely to be restrained than industrial countries under either regime. Results strongly suggest a bais toward restraing the smaller sellers, as well as countries whose exports had grown rapidly. Thus a country accounting for a very large share of U.S. imports of textile and clothes (T&C) ran no more risk of restraint than a country accounting for a very small share. It also suggests that expansion of exports by developing countries will be met by restrictions on market access. The results indicate that an increase in the developing countries's share of U.S. imports from 1% to 2% raised its probability of restraints by approximately 0.64 percent.

The effect of apparel imports into the US under the constraints of the MFA is examined by Evans and Harrigan (2003). The study uses a simple model of import sourcing with

three determinants: a country-specific effect, a "trade frictions" variable dependent upon tariffs and transport costs, and an interactive term of distance and a replenishment coefficient. Their central point relates to the hypothesis of "lean retailing" from Abernathy et al. (1999) – that retailers will source rapid-replenishment goods in closer locations to ensure quick availability – and they estimated this in a model that admits the impact of quota restrictions. They separated apparel imports into different categories, and identify each category either as "rapid replenishment" or not. They concluded that import growth in rapid-replenishment goods was significantly larger in local suppliers, thus supporting the lean retailing hypothesis.

Another study which analyzes the MFA as a complex market-sharing agreement involving all major trading countries and all categories of textile and apparel trade is explained by Grenne (1989). The MFA is a major experiment in the management of international trade. The study describe that the use of discriminatory quotas in the MFA is a serious violation of the principles of General Agreement on Tariffs and Trade (GATT) that have governed most trade since World War-II. The quotas involve substituting political forces for economic forces in the determination of trade. The MFA has imposed high costs on consumers in importing countries, and it has interfered with the United States' foreign policy goal of promoting economic development in low-income countries. The MFA has also been criticized by proponents of textile protection for failing to restrain import growth sufficiently. The study concludes that the time is right to reevaluate this experiment in managed trade and to determine whether to

continue the market-sharing approach of the MFA or to return textile trade to compliance with the general rules of the GATT.

Similarly, Oslon (2003) evaluates the effect of the elimination of textile and apparel quotas on the global market by studying the historical patterns of U.S. imports. The study shows that in general, apparel products received more protection than textile products in U.S. The average tariff rate imposed on apparel products in 2002 was 12 percent compared to 7.8 percent for textile products. The Almost Ideal Demand System (AIDS) estimate the effect of quantitative restriction for category 334 (men's and boys coats) on eight countries that consistently had quota fill rates over 80 percent in 1997 and 2002.Results suggest that imports of men's coats from the leading producers are complements for one another. The analyses show that a country's share of total imports should decrease as they come closer to filling their annual quota level. Buyers may shift purchase if they fear that import quota may be filled prior to the completion of an order. But the results of coefficient of fill rate for Pakistan suggests that market share increase the closer to a country comes to filling their quota level.

In the study, Hill (1998) reveals that in the last fifty years Pakistan's textile industry has been one of the world success stories. In 1947 there were only three textile mills in west Pakistan and the country was for the several years, net importer of yarn, cloth, and clothing. The main activity was the export of the raw cotton. After fifty years, Pakistan is now recognized as one of the leading textile country whether it is measured in terms of volume of production, quality of output, price competitiveness or growth potential. The

study conclude that it is best done if several companies work together and trade association often found that they can play a useful role.

In order to assess the likely impact of liberalization, Nordas (2004), takes into account recent technological and managerial developments including recent changes in supply chain management in the sector. The study conducted two model namely GTAP model and Gravity model. The study proves that GTAP simulations do not capture changes in technology (such as developments in retail and inventory management) and GTAP model results are totally driven by changes in relative prices and cost competitiveness, thus tell only part of the story nor the significance of time and distance. GTAP model's results show that in static model increase in exports due to quota elimination will be 17.5% and in dynamic model 72.0% increase in income (welfare gains) will be 42% and 65% respectively and loss of quota rents is probably less than the GTAP model estimates. The study remarks that there is considerable scepticism regarding the forecasts of dynamic models, and therefore the most optimistic forecasts should be taken with a pinch of salt. The result from the gravity model shows that in the EU market for every 10% increase in distance, trade flow falls off: at the rate of 5%,and in US market segments with highest rates of replenishment, imports from nearby Mexico and the Caribbean grew 70% faster than in sectors with low replenishment rates . Therefore the study concludes that distance matters; that countries close to major markets are likely to be less affected by post-ATC competition; and that Mexico, the Caribbean, Eastern Europe and North Africa will likely maintain their market shares.

The recent development in the econometric methodology of gravity model is developed by Harris and Matyas (1998). The study has been an attempt at unifying the estimation of gravity model. It has shown that care must be taken in specifying all of the likely effects; otherwise any further analysis is likely to be flawed. The study suggests that one can elucidate on the "openness" of the member countries' economies and moreover, specifically and separately, identify both propensities to export and import. Important explanatory variables are found to be domestic and target country GDP, and dependent on specification, local and domestic population, the exchange rate and foreign currency reserves. The inferences shows that current export flows are highly correlated with those of the previous years. The study focus on the random effect model, the coefficient of the explanatory variables is likely to be estimated with great precision, possibly providing greater insight for policy makers. Finally there is compelling evidence that exports are strongly autoregressive, a point also to be born in mind by policy makers when initiating trade policies.

While, Feenstra et al (1998) argues that the theoretical foundations for the gravity equation are general, while the empirical performance of the gravity equation is specific to the type of goods examined. The study shows that the existing theory for the gravity equation depends on the assumption of differentiated goods but it is concluded that the gravity equation can also be derived from a 'reciprocal dumping' model of trade in homogeneous goods. Theoretically, the gravity equation should have lower domestic income elasticity for exports of homogeneous goods than of differentiated goods, because of a 'home market' effect which depends on barriers to entry. The study quantify the

home market effect empirically using cross-sectional gravity equations, and find that domestic income export elasticities are indeed substantially higher for differentiated goods than for homogeneous goods.

Another study which applies a gravity model to examine the determinants of Icelandic exports is proposed by Kristjánsdóttir (2005). The model specifications tested allow for sector and trade bloc estimation. The estimates are based on panel data on exports from 4 sectors, to 16 countries, over a period of 11 years. The results indicate that the most of the determinants for a small country like Iceland are the same as in the general case, i.e. exports can be determined by distance together with GDP and population of the recipient country. However, the variables accounting for exporting country (Iceland) size and wealth do not seem to drive exports. Regression estimates indicate that the marine sector strongly dominates all other export sectors. Estimates indicate that the size and wealth of Iceland does not seem to matter much for the volume of exports, not even when corrected for the country's small size. So for various marine products there is variation in relevance of wealth and market size effects on these products. When an international export ratio is inserted into the gravity equation as to correct for small country size, it is not estimated to improve the overall estimation results. Finally, results indicate that trade bloc and sector effects matter and those marine products vary considerable in their sensitivity to distance and country factors.

Using the gravity model approach, Batra (2004) attempted to estimate trade potential for India. The study used an augmented gravity model to first analyze the world trade flows

and the coefficients thus obtained are then used to predict trade potential for India. The gravity model has been estimated using the OLS technique with cross - section data for the year 2000. The dependent variable in all the regressions, is total merchandise trade (exports plus imports in US dollars), in log form, between pairs of countries. The estimation results show that the gravity equation fits the data and delivers precise and plausible income and distance elasticities and estimates for other geographical, cultural and historical characteristics. All three of the traditional "gravity" effects are intuitively reasonable, with statistically significant t-statistic. Alternative measures of GNP in terms of current dollar value and purchasing power parity do not alter either the sign or significance of different explanatory variables. The magnitude of India's trade potential is highest with the Asia-Pacific region followed by Western Europe and North America. Countries like China, United Kingdom, Italy and France reveal maximum potential for expansion of trade with India. Among specific country groupings/trade arrangements, India's trade potential is revealed to be highest with Pakistan in SAARC and with Philippines and Cambodia in the ASEAN.

The two main theories of international trade, the Heckscher –Ohlin (H-O) theory and Increasing Return trade theory are analyzed by Evenett and Keller (1998).The study shows that the version of both models can generate this prediction. There are three major findings: First, little production is perfectly specialized due to factor endowment differences, making the perfect specialization version of the H-O model an unlikely candidate to explain the empirical success of the gravity equation. Second, increasing return are important causes for perfect product specialization and the gravity equation,

especially among industrialized countries. Third, to the extent that production is not perfectly specialized across countries, the study supports for both H-O and increasing return models. Based on these findings, it is concluded that both model explain the different components of the international variation of production patterns and trade volumes, with important implications for productivity growth, labor and macroeconomics.

In the study, Feenstra (2002) analyzes the CES monopolistic competition model to derive the gravity equation, especially when we allow for transport cost and other trade barriers. The study shows that inclusion of transport cost and trade barriers one need to take account of overall price indexes in each country. The study reviews the three methods to do so; using published data on price indexes: since the computational method of Anderson and Wincoop (2001); or using country fixed effects to measure the price indexes. The latter two methods are compared on the dataset with trade between Canada and USA. The results show that fixed effects method produces consistent estimates of the average border effect across countries, and is simple to implement, so it might be considered to be the perfect estimation method.

The fact that textile industry is Pakistan's primary industry, with the exception of the period from 1858-59 to 1974-75 textile industry could not sustain a suitable growth is explored by Ahmed and Mariah (2002). The study shows that although textile exports are the major contributors of the economy but the industry is not upholding its position globally. The present position of textile industry is far from satisfactory. It faces various

problems per inter sub section relationships, political inability, unsatisfactory law and order, low quality products etc. In order to hold up its position in the competitive world and to compete globally, there must be solution to the problems such as production of value added products, political stability, better inter sub section relationships, and improvement in human resource development.

By employing the simultaneous trade model, Malik (2000), examines the trade prospects for the Pakistan's textile and clothing export in the international market at the time when it has been decided in the WTO's Agreement on Textile and Clothing (ATC) that the trade in this sector from the developing countries should be completely free from quantitative restrictions. A traditional demand function is modeled to test "small country" hypothesis, with price and world income along with trade weighted real effective exchange rate as important determinants. The result shows that Pakistan as a "small country" has very low price elasticity (0.04) closer to zero. So the country's export price of textile follows the world price. The analysis also shows the infinitely elastic demand with respect to price. And being a "small country" world income has no influence on exports irrespective of the magnitude of income elasticity of demand. However it is concluded that in case of Pakistan, product diversification and its quality as well as lack of qualified labour force are the main constraints for textile and clothing exports compared to international demand constraints imposed by the developing countries(DCs).

By applying Constant Market Share Analysis of export growth, Mehmood and Akhtar (1996) capture the world trade effect, the commodity composition effect, the market

distribution effect and the competitiveness effect for the periods: 1984-89 to 1988-89 and 1988-89 to 1992-93. The results show that Pakistan has maintained her export share in world market. The market distribution and competitiveness of Pakistan exports have improved significantly between the two periods under study. However the contribution of Pakistan exports into traditional commodities, whose world demand remained sluggish has offset the positive contribution of effective market distribution and improved competitive strength to a larger extent. A restructuring of export from traditional to non traditional, an increase in the varity of exports, search for new fast growing markets and an improvement in the economic political environment are suggested to enhance the export growth of Pakistan in future.

The potential gains from domestic reforms in India's cotton and textile sector are evaluated by Elbehri et all (2003). The study employs the modified version of an applied general equilibrium model, wherein emphasis is placed on the impact of the Uruguay Round on trade in textiles and apparel. The empirical results indicate that the gains from this reform package are quite significant, amounting to as much as $1.9 billion in the year 2005 with the increase in productivity in apparel contributing the largest share to this gain. Results indicate that the cotton exports are projected to increase by 115%.It is clear that removal of India's export quotas on cotton textiles could results in dramatic expansion in the export of these goods, particularly in the absence of the ATC quotas. In the presence of the ATC quotas, export of textile still grow by 36%but they can expand only into non quota markets and so the marginal return to India for these goods deteriorate more than in the absence of these restrictions. The results also indicate that the

gains in Indian real income from the domestic reforms are less than half as large under the scenario with ATC quotas.

Export Tax Equivalent (ETE) for garment and textile exports to the USA and the EU are calculated by Kathuria and Bhardwaj (1998). ETEs can be thought as a measure of excess demand, given the existence of quota restrictions and certain level of supply capabilities. Thus the ETE is a measure of restrictiveness of quota regime. The study inspect that ETEs for garments were higher for the USA, in the range of 28-37 percent. It also shows that as far as India is concerned, the USA is lagged behind the EU in terms of reducing the restrictiveness of the quota regime. It can be inferred that a higher share of Indian exports to the EU is non-restricted and average ETEs are lower in the EU than USA. It is concluded that the dismantling of the quota regime represents both an opportunity as well as a threat. An opportunity because markets were no longer restricted and a threat because market will no longer be granted by quotas, and even the domestic market will be open to competition. This means that in today's world, observed ETEs would surely have been higher if the industry has been relieved of the documented domestic policy constraints. It implies that the well being of the industry may depend on timely action to relax these policy constraints.

The scenario of the Indian apparel industry is analyzed by Ramaswamy and Gereffi (2000) . Their findings show that the process of globalization involves the slicing up of the value chain and forces countries to become niche players in the global market. Specialization in the global apparel market is not based on the fabric alone but on product

as well. In the world apparel market the main leverage is exercised by retailers, brand-name marketers at the marketing and retailing end of the chain. They outsource to meet their customer's demand and depend on package suppliers who can procure fabric, cut, trim, and pack the final product. The study conclude that the special tariff provisions, namely offshore assembly processing (OAP) and outward processing trade (OPT) have speeded up the globalization of apparel trade. These provisions favour the countries in close proximity to the United State (Mexico) and the European Union (Eastern Europe). Thus the regional trade arrangements like NAFTA and the OAP provisions have led to the rapid growth of non Asian suppliers to the U.S apparel market. The markets that grow rapidly are clothing segments, basic and standardized garments.

The impact of the removal of quantitative restriction on EU clothing imports with in the phase out of the Multfiber Arrangement is assessed by Baleix (2005). The study estimates the gravity model using cross sectional data for imports of 20 categories for the 22 largest exporters of these articles into EU market for the year 1996.The estimation of the gravity equation indicate a positive impact of quota on EU clothing imports. To solve this problem that actually derives from an endoginty bais, one should control the determinants of trade barriers through the estimation of the system of simultaneous equations or by using instrumental variable method. Infact the trade barriers seems to have an impact on imports, negative as it is generally assumed, but this does not always appear that clearly in other sectorial studies. The study shows that the phasing out of quantitative restrictions have a substantial effect on import flows. Result shows that the presence of quota restrict the imports in all cases, which indicate that presence of quotas acts as a disincentive to

produce and export. The study points out that the suppression of quotas would lead to a 20 % increase in clothing imports. For the countries which already benefit from the free access to the EU, the new trade diversion will surely cause negative consequences upon them.

By using the computable general equilibrium model from the Global Trade Analysis Project, Ananthakrishnan and Chandra (2005) examine the impact of the elimination of quotas on India. The study presents a regional aggregation model with 13 regions/countries, with the major exporters and importers (as per the WTO data) of textiles and clothing included. Two scenarios are estimated to see the impact of the elimination of quotas on India. The first is a complete removal of the quotas, by eliminating the export tax equivalents of the MFA/ATC quota. The second scenario includes a partial reduction of quotas on China (of 50 percent), and a full removal of quotas (or equivalently ETEs) imposed on other countries. The results indicate that the world welfare would increase but India's welfare would drop due to a negative terms of trade effect even though there is a positive allocative efficiency effect. The main gains in welfare would accrue to the consumers in the EU and the United States via a reduction in prices. Of the exporting countries, China would stand to gain welfare despite negative terms of trade effect as the increase in allocative efficiency is tremendous. The inferences show that total world exports would grow only by 0.1 percent whereas exports of clothing would grow by 3.1 percent and those of textiles by 0.4 percent.

The welfare effects and resource shift that would occur as a result of removal of quantitative restrictions (QR) for USA in textile, steel and auto section is quantified by Melo and Tarr (1990). Estimations are derived from a static ten sector general equilibrium model of US economy. The inferences show the welfare cost of tariff protection is between 2% (low elasticity case) and 4% (high elasticity case) of the welfare cost of QRs in textile, steel and autos. Since there are other QRs in the USA beyond those examined here, this estimation is a lower bound. The welfare loss from QRs is estimated at approximately US$ 20 billion (1984 dollars).Due to the high rent transfer component of QRs about (75 %) the average across the boarder tariff equivalent (in QRs in terms of well fare cost) is estimated at about 20%, a rate which predates the early days of multilateral tariff reduction.

The evolution and performance of trade and employment in Textile and Clothing (T&C) until 2005 is explored by Ernst et al (2005). The study scrutinizes the causal relations between trade, output and employment to estimate the future labour shifts. The study apply gravity model to analyze bilateral trade flows for 45 importing countries and 193 exporting countries, for the years 1999-2004. The model is used to forecast trade and employment changes following the end of the MFA. The estimation is based on the output numbers and general labour intensity in T&C sector. The results show that the increase of jobs in China is equal to approximately 11 percent increase of the 19 million workers in the T&C industry and for Pakistan the numbers means an increase of around 12 percent of the approximately 2.25 million workers in Pakistan. The inferences also show that beside China and Pakistan which are expected to benefit most from the MFA

phase-out. Other economies include: Hong Kong, SAR, and Macao, India and Belarus. However, some countries will be "slight" losers, but with potential to be winners if they apply appropriate adjustment policies to their new environment. Nevertheless, some countries will lose out completely in T&C and will have to diversify their economies and find other sectors of industrial specialization.

The consequences for the Pakistan of abolishing the system of quota installed under the MFA are analyzed by Martin (2004). The study use a model- the LINKAGE model, maintained at World Bank, which is based on the Global Trade Analysis Project (GTAP) database. To analyze the effect of liberalization, and policy responses, four experiments were conducted. The analyses conclude that outside the textile and clothing sectors, there is 14 percent decline in the output of leather products as this labour intensive sector faces increasing competition for input from the labour intensive textile and clothing sector. Other sectors experience much smeller reductions in output as they yield the resources needed for the expansion of the textile and clothing sector. The cotton output expands modestly in response to increased demand. The model results imply that abolition of Pakistan's textile quota alone will raise welfare and wages in Pakistan. Welfare raises by 0.4 percent or $ 231 million and wages of unskilled workers rise by just over 3 percent. When the quotas of all exporters are abolished, the overall impact on real income in Pakistan is estimated to be (-0.4) percent, real wage rise because of the demand for workers in textile sector, which outweighs the decline in demand in the clothing sector.

Pakistan's status as a "single commodity" country and the life after 2004 in the post MFA era is explored by Khan (1998). It is inferred that trade and trade liberalization don't produce wealth and jobs; they only help in the distribution of demand and jobs. Pakistan T&C industry faces in the next millennium both great opportunity and even a great threat globally for it to survive and grow. Many of the changes that will occur are outside of the control of Pakistan and her producers. There is a complex interaction, both positive and negative: a factor in one category can interact with others in the same category and the developments in the external factors can improve or worsen the effect of domestic factors and vice versa. So given these challenges, global business success will more likely happen to those who earn it, not to those who fall into it.

By employing a modify version of an applied general equilibrium GTAP model, Elberri (2004) analyzed the MFA trade restrictiveness estimates based on 2002 product level quota trade and price data. The analyses are based on 85 regions in GTAP which were then aggregated into 21 regions separating out textiles and clothing exporters and importers. The analyses confirms previous finding of significant shifts in textile and apparel trade from preferential exporters to Asian and south Asian suppliers that are subject to binding MFA quota. The analyses show the short run impact of MFA quota removal results in an expansion of world trade by 11 percent for clothing and 1.1 percent for textile compared to the 2005 base year. The United state will experience increase in imports of apparel (34.4 %) and textile by (2.2%) moreover the expanding global apparel trade will benefit united states by increasing her apparel exports by 8.9%. By comparison European Union show the smaller growth of apparel imports (1.3%) and textile (-0.8%).

The analysis shows that total U.S consumption for apparel increase (6%) driven by higher flow of cheaper imports which substitute for domestic apparel. Result suggest that the global welfare will increase from MFA quota removal is about $US 10.2 billion.

The future prospects of cotton cloth exports from Pakistan, up to the year 2010-11 is presented by Saddique, Sofia and Adnan (1999). Auto Regressive Integrated Moving Average (ARIMA) model was applied on the time series data of cloth exports from 1971-72 to 1995-96. The future forecast exhibits that there will be significant improvement in the export of cotton cloth by the year 2010-11. But factors like trade policy, agriculture policy, production and demand of textile industry and international market may affect it, because the forecast is based on past data. The study recommends the need to increase the production of the raw cotton and cotton yarn to increase the production and export of cotton cloth.

The impact of "Agreement on Textile and Clothing" on US cotton is examined by Donald et al (2001). The study conducted in an intertemporal general equilibrium framework and aggregate the data into 13 countries/regions and 7 sectors, including cotton, other crops, livestock, processed food, textiles, apparel, and an aggregated manufacturing and services sector. The inferences show that liberalization of world T&A trade would enhance global welfare slightly, and prove particularly beneficial to developing countries, with China and the Former Soviet Union (FSU) achieving the largest gains. Some apparel exporting regions that now have preferential access to developed country markets would suffer a reduction in T&A output as a result of expanded access for countries like China and

India, but would see increased welfare despite the setbacks in this sector. While Mexico and Eastern Europe would see a smaller increase in welfare than any developing region, their welfare is still estimated to more than any developed region. World production of textiles, apparel, and cotton would rise, but prices of textiles and apparel would fall. The United States would benefit the least of any region from liberalization under the ATC, but would see welfare improve slightly despite lower output of textiles, apparel, and cotton.

Similarly Diao and Somwaru (2001) evaluate the possible impact of the MFA phase-out on the world economy. Starting from analyzing trends in the world textile and apparel (T&A) trade, the study found that the developing countries were a growing factor in world T& A in recent decades. Moreover using data from 91 countries over 37 years, the study empirically investigates and indicates a strong positive relationship between trade in textile and apparel and the stander of living. However, about 50 percent of industrial countries markets are not available for developing countries and intra-EU trade still accounts for half of total EU imports of T&A products. The study further focuses on the possible impacts of the MFA phase out on the world T&A trade by using an intertemporal, global general equilibrium model. The study found that the MFA phase out would enlarge world trade of T&A and developing countries will further gain market share in world total exports. Almost all countries, including both the developing countries restrained by the MFA quotas and free from the MFA quotas, and the industrial countries, gain in term of social welfare post MFA in the model. Even though the developing countries currently free from the MFA quota restraints may lose their market shares as

world T&A price are lowered by improving the efficiency of world T&A trade post – MFA, consumers are better off by consuming cheap commodities.

The impact of the quota phasing out on textile and clothing production and trade is analyzed by Wattanapruttipaisan (2005). The study shows that income gains from lower consumer prices will exceed the adjustment costs in developed countries. Meanwhile, developing countries will have a higher share of the clothing and, to a much less extent, textiles markets in the US and the EU. This will provide a further push for the relocation of T&C production facilities from the developed to the developing world. China and India are expected to gain most from the post-ATC trading environment. In addition, suppliers who used to rely heavily on quota-free and/or preferential tariffs would lose a large part of their market share. The study recommends the structural adjustments, policy reforms, suitable procurement, production mixes and additional investment in the T&C sectors to sustain the shares or even gain larger shares in the EU and Canadian as well as US markets.

CHAPTER

5

METHODOLOGY

Many economists believe that gravity model is a successful model to estimate the flow of international trade. Anderson (1979) first proposed the idea, which was later extended by Bergstrand (1985, 1989). Bergstrand has provided microeconomic foundation of gravity model through using a general equilibrium model. Linnemann (1966) tried to combine social dynamics and economic theory, by placing it in a Heckscher-Ohlin framework. Further, in recent studies, Anderson and WinCoop (2001) have derived the gravity equation for import which is a function of trade cost and income whereas trade cost is mainly dependent on transport cost.

The gravity model employed in the present study, however is a variant of model by Anderson (1979), Andertson and WinCoop (2001), Bergstrand (1985) etc. The model is estimated through weighted least square and the impact of Agreement on Textiles and Clothing on Pakistan's textiles industry is analyzed.

5.1 The Gravity Model

The gravity equation is a popular formulation for statistical analyses of bilateral flows between different geographical entities. The specification of the gravity equation was refined in many studies in order to account for factors that could limit or strengths the trade relations and thus obtain a more complete empirical model. The gravity model for

international trade is based on the idea that trade between countries, like governmental force is a function of mass (GDP, population) as well as distance.

5.2 Origins: Newton's Apple

In 1687, Newton proposed the "Law of Universal Gravitation" which states that the forces of attraction between two objects 'i' and 'j' is given by

$$F = G\frac{M_i M_j}{D_{ij}^2} \qquad \text{(i)}$$

where notation is defined as follows

- F_{ij} is the attractive force.
- M_i and M_j are the masses.
- D_{ij} is the distance between the two objects.
- G is a gravitational constant depending on the units of measurement for mass and force.

5.3 Economists Discover Gravity

In 1962 Jan Tinbergen proposed that roughly the same functional form could be applied to international trade flows. However, since it has been applied to a whole range of what we might call "social interactions" including migration, tourism, and foreign direct investment. This general gravity

$$F_{ij} = G\frac{M_i^{\alpha} M_j^{\beta}}{D_{ij}^{\theta}} \qquad \text{(ii)}$$

law for social interaction may be expressed in roughly the same notation:

where notation is defined as follows:

- F_{ij} is the" flow" from origin 'i' to destination alternatively, let F_{ij} represents total volume of interactions between 'i' and 'j' (i.e. the sum of the flows in both directions:

$$F_{ij} = F_{ij} + F_{ji}$$

- M_i and M_j are the relevant economic sizes of the two locations.
  - If F is measured as a monetary flow (e.g. export values), then M is usually the gross domestic product (GDP) or gross national income (GNI, formerly GNP) of each location.
  - For flows of people, it is more natural to measure M with the populations.
- D_{ij} is the distance between the locations (usually measured center to center).

Note that we return to Newton's law (equation (i)) if $\alpha = \beta = 1$ and $\theta = 2$.

5.4 Theoretical foundation

Many trade economists believe that gravity model is a successful model to estimate the flow of bilateral trade. However there is great deal of ambiguity regarding to theoretical foundations of gravity model, which can be categorized into economic and non economic explanation. Anderson (1979) gives the explanation as follow:

Generally the gravity equation is specified as

$$M_{ijk} = \alpha_k y_i^{\beta 1k} y_j^{\beta 2k} N_i^{\beta 3k} N_j^{\beta 4k} d_{ij}^{\beta 4k} U_{ijk} \qquad (1)$$

M_{ijk} is the dollar flow of good or factor k from country or region 'i' to country or region 'j', y_i and y_j are incomes in 'i' and 'j', N_i and N_j are population in 'i' and 'j', and d_{ij} is thedistance between countries (regions) 'i' and 'j'. The U_{ij} is a log normally distributed error term with $E(lnU_{ij})=0$. Most often the flows are aggregated across goods. Ordinarily the equation is run on cross section data and sometimes on pooled data. Typical estimates observe income elasticity not significantly different from one and significantly different from zero and population elasticity around (-0.4) usually significantly different from zero.

5.4.1 Assumptions:

- identical homothetic preferences across regions
- products are differentiated by place of origin
- pure expenditure system by specifying that the share of national expenditure accounted for by spending on tradable is a stable unidentified reduced form function of income and population.

5.4.2 The Pure Expenditure System Model

Suppose, each country is completely specialized in the production of its own good. So there is one good for each country. There are no tariffs or transport costs. The fraction of income spent on the production of country 'i' is denoted by b_i and is the same in all countries. This implies identical Cobb-Douglas preferences everywhere. Prices are constant at equilibrium values and units are chosen such that they are all unity with cross

section analysis. Consumption of good 'i' (in value and quantity terms) in country 'j' (imports of good 'i' by country 'j') is thus

$$M_{ij} = b_i y_j \qquad (2)$$

Where y_j is income in country j.

The requirement that income must equal sales implies that

$$Y_i = b_i(\Sigma_i y_j) \qquad (3)$$

Solving (3) for b_{ij} and substituting into (2) we obtain

$$M_{ij} = \frac{y_i y_j}{\Sigma y_j} \qquad (4)$$

This is the simplest form of "gravity" model. If error structure is disregarded, a generalization of equation (4) can be estimated by OLS, with exponents on y_i , y_j unrestricted. In a pure cross section, the denominator is an irrelevant scale term. The income elasticity produced should not differ significantly from unity.

5.4.2 The Trade-Share-Expenditure System Model

This section adds to the Cobb-Douglas expenditure system for traded goods and thus produces an unrestricted (non-unit income elasticity) gravity equation. Traded goods shares of total expenditure differ widely across regions and countries. Per capita income is considered as exogenous demand side factor, and population (country size) is considered a supply-side factor. Trade share "should" increase with per capita income and decrease with size. Taking the trade-share function as stable, the expenditure system model combines with it to produce the gravity equation.

Suppose, all countries produce a traded and a non-traded good. The overall preference function assumed in this formulation is weakly separable with respect to the partition between traded and non-traded goods: U = u (g (traded goods), non traded goods). Then given the level of expenditure on traded goods, individual traded goods demand are determined as if a homothetic utility function in traded goods alone g( ) are maximized subject to a budget constraint involving the level of expenditure on traded goods. The individual traded goods shares of total trade expenditure with homotheticity are functions of traded goods prices only. To make it simple, it is assumed g( ) has the Cobb-Douglas form. Since preferences are identical, expenditure shares for any good are identical across countries within the class of traded goods. So for any consuming country 'j', θ_i is the expenditure in country i's tradeable good divided by total expenditure in j on tradeables; i.e. θ_i is an exponent of g ( ). Let ϕ_j be the share of expenditure on all traded goods in total expenditure of country j and $\phi_j = F(Y_i, N_j)$.

Demand for i's tradable good in country 'j' (j's imports of i's good) is

$$M_{ij} = \theta_i \phi_j y_i \qquad (5)$$

The balance of trade relation for country i implies

$$Y_i \phi_i = (\Sigma_i \, y_i \phi_i)\theta_i \qquad (6)$$

Value of imports of 'i' Value of exports of 'i'

Plus domestic spending = Plus domestic spending

on domestic tradable on domestic tradable

solving(6) for θ_i and substituting into (5) we have

$$M_{ij} = \frac{\phi_i y_i \phi_j y_j}{\Sigma \phi_j y_j} = \frac{\phi_i y_i \phi_j y_j}{\Sigma_j \Sigma_i M_{ij}} \qquad (7)$$

With $F(Y_i, N_j)$ taking on a log-linear form, equation (7) is the deterministic form of the gravity equation (1) with the distance term suppressed and a scale term added. In fact, if trade imbalance due to long term capital account transactions is a function of (Y_i, N_j), we may write the basic balance as

$$Y_i \phi_i m_i = (\Sigma_j y_j \phi_j)\theta_i$$

With $m(Y_i, N_j)$ and substitute into (6) and (7).

These yields

$$M_{ij} = \frac{m_i \phi_i y_i \phi_j y_j}{\Sigma_i \Sigma_j M_{ij}} \qquad (8)$$

With log linear forms for m and F, (8) is essentially the deterministic gravity equation.

5.4.3 Estimation Efficiency

The trade–share model provides some legitimacy to the gravity model. Ultimately many tradeables will be allowed for each country, with tariffs and transport costs present, but initially, as before, assume only one tradeable in each and no barriers to trade. The system to be estimated is

$$M_{ij} = \theta_i \phi_j y_j U_{ij} \qquad (5')$$

$$m_i \phi_i y_i = \theta_i \Sigma_j \phi_j y_j \qquad (6')$$

Where U_{ij} is a log normal disturbance with

$$E(\ln U_{ij}) = 0$$

Note that (6') states that planned expenditures (reduced or increased by the capital account factor) = planned sales, and has no error term. For efficient estimation we need that the information in (6') be utilized. Since the constraint is highly non-linear in the Y's, the most equivalent way to do this is to substitute out θ_i and estimate the gravity equation:

$$M_{ij} = \frac{m(y_i, N_i)F(y_i, N_i)y_i F(y_j, N_j)y_j}{\Sigma_j F(y_j, N_j)y_j} U_{ij} \qquad (8)$$

With the log linear form for m( ) and F( ),

$$m(y_i, N_i) = k_m y_i^{m_Y} N_i^{m_N}$$

and $$F(y_j, N_j) = k_\phi H_j^{\phi_Y} N_j^{\phi_N}$$

and the denominator made a constant term

we have

$$M_{ij} = \left(k_m y_i^{m_Y} N_i^{m_N}\right)\left(k_\phi y_j^{\phi_Y} N_j^{\phi_N}\right) y_i \left(k_\phi y_j^{\phi_N} N_j^{\phi_N}\right) y_j U_{ij} \div k'$$

$$= \left(k_m k_\phi^2\right) y_i^{m_Y + \phi_Y + 1} N_i^{m_N + \phi_N} y_j^{\phi_Y + 1} N_j^{\phi_N} U_{ij} \div k' \qquad (8')$$

This is the aggregate form of (1) with the distance term omitted. Ordinarily it can be fitted on a subset of countries in the world. Exports to the rest of the world are exogenous and imports from it are excluded from the fitting. If this is done, the denominator is still the sum of world trade expenditures, and (6') implies that (8) and (8') assume that θ_i is the same in the excluded countries as in the included countries.

At last, form the set of estimated values for traded-goods expenditures:

$$\hat{\phi}_j y_j = \hat{k}_\phi y_j^{\phi_Y + 1} N_j^{\phi_N} \qquad (9)$$

The individual traded goods shares θ_i can be estimated using the instruments $\phi_j y_j$

$$M_{ij} = \hat{\theta}_i \phi_j y_j U_{ij} \qquad (10)$$

Which is estimated across countries for country i's exports subject to the restriction that

$$\sum \theta_i = 1$$

The model (5′) and (6′) postulate no random term in the trade balance constraint and thus allows treatment of the y's as predetermined. Suppose alternatively that the trade balance constraint is a stochastic form:

$$m_i\left(\sum_j M_{ji}\right) = \sum_j M_{ij} \qquad (6'')$$

Or

$$m_i \phi_i y_i \left(\sum_i \theta_j U_{ji}\right) = \theta_i \left(\sum_j \phi_j y_j U_{ij}\right)$$

Then (8) becomes

$$M_{ij} = \frac{m_i \phi_i y_i \phi_j y_j}{\sum_j \phi_j y_j} \varepsilon_{ij} \qquad (8'')$$

$$\varepsilon_{ij} = \frac{U_{ij} \sum_j \theta_j U_{ij}}{\sum_i \frac{\phi_i y_i}{\sum \theta_i y_i} U_{ij}}$$

Where

Now consider the gravity equation under the complication of many commodity classes of goods flowing between each country 'i' and 'j', with a full set of national tariffs in each country, and with transport costs proxies by distance.

The landed value at country 'j' of commodity class k goods produced in country 'j' is $M_{ijk}\tau_{ijk}$,where M_{ijk} is the foreign port value and τ_{ijk} is the transit cost factor. With identical homothetic preferences for traded goods, the traded good expenditure shares are

identical functions $\theta_{ik}(\tau_j)$, where τ_j is the vector of τ_{ijk}'s for country j. Demand for import is

$$M_{ijk} = \frac{1}{\tau_{ijk}} \theta_{ik}(\tau_j) \phi_j y_j \tag{12}$$

Aggregate trade flows between i and j are thus

$$M_{ij} = \sum_k M_{ijk} = \phi_j y_j \sum_k \frac{1}{\tau_{ijk}} \theta_{ik}(\tau_j) \tag{13}$$

The trade equation balance relation is

$$m_i \phi_i y_i = \sum_j M_{ij}$$

$$= \sum_j \phi_j y_j \sum_k \frac{1}{\tau_{ijk}} \theta_{ik}(\tau_j) \tag{14}$$

Previously we set all the $\tau_{ijk} = 1$ and could divide both sides of (14) by $\sum_j \phi_j y_j$ to obtain the aggregate share parameter for country i goods on the right: $\sum_k \theta_{ik}$. The left hand side was then substituted into (13) to obtain the previous gravity equation

$$M_{ij} = \frac{m_i \phi_i y_i \phi_j y_j}{\sum_i \sum_j M_{ij}} \tag{8}$$

Note that with many goods, only the aggregate version of gravity equation is valid under the present interpretation.

5.5 A Gravity Model Applied to Pakistan's Textile and Clothing export

5.5.1 Basic Gravity Equation

The gravity model has proven to be an effective tool in explaining bilateral trade flows as a function of exporter's and the importer's characteristics, together with factors that aid or restrict trade. Isard and Peck (1954) and Beckerman (1956) find trade flows to be higher between geographically close areas (Oguledo and Macphee, 1994).

As stated above the gravity model in its most basic form explains bilateral trade as being proportional to the product of GDPi and GDPj and inversely related to the distance between them.

5.5.1.1 Model-1

$$Log(X_{pak_{jt}}) = \alpha_0 + \alpha_1 \log(GDP_{pak} * GDP_j) + \alpha_2 \log(PCGDP_{pak} * PCGDP_j) + \alpha_3 \log(d_{pak_j}) + \alpha_4 (YA) + U_{pak_j}$$

Where

$X_{pak_{jt}}$ = Pakistan's textile and clothing export to EU, USA, and Canada

GDP_{pak} = GDP of Pakistan

GDP_j = GDP of partner countries

$PCGDP_{pak}$ = Per capita GDP of Pakistan

PCGDPj= Per capita GDP of partner countries

d_{pak_j} = Distance between capital of the Pakistan and Partner countries

YA= Absolute Value of Per Capita Income Difference

The basic gravity equation (i.e model-I) considers the multiplicative interactive forms for GDP and per capita GDP to consider the constant cross influence by the sample countries.

5.5.2 Augmented Gravity Equations

In addition to the basic gravity model (model-I), an augmented gravity equation i.e model-II, to analyze the restrictiveness of the ATC quotas levied by USA, Canada and EU, on Pakistan is also estimated. The model is "augmented" in that ,several conditioning variables that account for other factors that may effect trade have been included over and above the (the natural logarithms of) income and distance.

Augmented gravity equation (i.e. model-II) for textile and clothing is thus expressed as follows:

5.5.2.1 Model-II

$$Log(X_{pak_j}) = \alpha_0 + \alpha_1 \log(GDP_{pak} * GDP_j) + \alpha_2 \log(PCGDP_{pak} * PCGDP_j) +$$

$$\alpha_3 \log(d_{pak_j}) + \alpha_4 (YA) + \alpha_5 \log(RQI_c) + \alpha_6 (RQI_i) + \alpha_7 (RER) + U_{pak_j}$$

where

$X_{pak_{ji}}$ = Pakistan's textile and clothing export to EU, USA, and Canada

GDP_{pak} = GDP of Pakistan

GDP_j = GDP of partner countries

$PCGDP_{pak}$ = Per capita GDP of Pakistan

PCGDPj= Per capita GDP of partner countries (USA, EU, Canada)

d_{pak_j} = Distance between capital of the Pakistan and Partner countries

YA= Absolute Value of Per Capita Income Difference

RQI_t = Relative quota impact indicator for textile

RQI_c = Relative quota impact indicator for clothing

RER= Real exchange rate

Augmented gravity equation (i.e model-III) for textile is thus as follow:

5.5.2.2 Model-III

$$Log(X_{pak_{jt}}) = \alpha_0 + \alpha_1 \log(GDP_{pak} * GDP_j) + \alpha_2 \log(PCGDP_{pak} * PCGDP_j) +$$

$$\alpha_3 \log(d_{pak_j}) + \alpha_4(YA) + \alpha_5(RQI_t) + \alpha_6(RER) + U_{pak_j}$$

Where

$X_{pak_{jt}}$ = Pakistan's textile export to EU, USA, and Canada

GDP_{pak} = GDP of Pakistan

GDP_j = GDP of partner countries

$PCGDP_{pak}$ = Per capita GDP of Pakistan

PCGDPj= Per capita GDP of partner countries (USA, EU, Canada)

d_{pak_j} = Distance between capital of the Pakistan and Partner countries

RQI_t = Relative quota impact indicator for textile

YA= Absolute Value of Per Capita Income Difference

RER= Real exchange rate

Augmented gravity equation (i.e. model-IV) for clothing is as follow:

5.5.2.3 Model-IV

$$Log(X_{pak_{ji}}) = \alpha_0 + \alpha_1 \log(GDP_{pak} * GDP_j) + \alpha_2 \log(PCGDP_{pak} * PCGDP_j) +$$

$$\alpha_3 \log(d_{pak_j}) + \alpha_4 (YA) + \alpha_5 \log(RQI_c) + \alpha_6 (RER) + U_{pak_j}$$

where

$X_{pak_{ji}}$ = Pakistan's clothing export to EU, USA, and Canada

GDP_{pak} = GDP of Pakistan

GDP_j = GDP of partner countries

$PCGDP_{pak}$ = Per capita GDP of Pakistan

PCGDPj= Per capita GDP of partner countries (USA, EU, Canada)

d_{pak_j} = Distance between capital of the Pakistan and Partner countries

RQI_c = Relative quota impact indicator for clothing

YA= Absolute Value of Per Capita Income Difference

RER= Real exchange rate

5.6 Definition of the Variables

5.6.1 Economic Mass

There are two standard ways of measuring the size of countries in the gravity model: GDP (output) or population. The product of GDP serves as a proxy for the two countries' economic size, in terms of both production capacity and size of market. Larger countries, with a greater production capacity, are more likely to achieve economies of scale. They also possess large domestic markets which are able to absorb more imports. Therefore, an increase in the product of the two countries' GDPs is expected to increase trade volumes. Thus we expect our estimated coefficient of $\alpha_1 > 0$.

5.6.2 Economic Development

While mathematically, it is precisely equivalent, whether we express the explanatory variables as GDP and per capita GDP, or as GDP and population, we choose the former. Per capita GDP represent the income level or purchasing power of exporting and importing countries. In particular the specification with GDP per capita allows us to explore the link between a country's trade and its stage of development. This variable will serve to predict whether Pakistan's exports are dependent on its trading partners' income levels. It is also instructive to focus explicitly on GDP per capita as a determinant of trade.

5.6.3 Absolute Value of Per Capita Income Difference

The standard gravity model predicts that countries with similar levels of output per capita will trade more than countries with dissimilar levels. This is true of the Helpman-

Krugman sort of theory also, as it predicts that the volume of trade should increase with increasingly equal distribution of national income. This however contradicts the traditional Hecksher-Ohlin theories of trade that predict that countries with dissimilar levels of output will trade more than countries with similar levels. In addition, the Linder hypothesis says that countries with similar levels of per capita income will have similar preferences and similar but differentiated products, and thus will trade more with each other. This hypothesis is often viewed as similar to the Krugman-Helpman theory in its predictions. While the Krugman – Helpman hypothesis predicts that the sum of the logs of (GDP/popi) and (GDP/popj) will have a positive effect on the log of trade, the Linder hypothesis is associated with the prediction that the absolute value of the difference of the two variables will have a negative effect on trade. A positive value of this falls in the category of Hecksher – Ohlin theories.

To distinguish among these influences - Hecksher-Ohlin style factor endowments differences, Linder –style taste differences, and the effect of development on trade and in an attempt to capture the distinctive features of each, we add a term for the difference in per capita GNP in the standard formulation of the gravity model. A negative sign on this term would support the Linder hypothesis, while a positive sign would support the Hecksher-Ohlin hypothesis. We test for both the hypotheses.

5.6.4 Distance

Distance is also important in explaining trade between economies. An increase in distance between economies is expected to increase transportation costs and thus reduce trade.

Distance is almost always measured using the "great circle" formula. This formula approximates the shape of the earth as a sphere and calculates the minimum distance along the surface. To calculate great circle distances one needs the longitude and latitude of the capital or "economic center" of each economy in the study. The study applies the following formula to obtain the distance measure in miles:

$$D_{ij} = 3962.6 \arccos\left(\left[\sin(y_i)\sin(y_j)\right] + \left[\cos(y_i)\cos(y_j)\cos(x_i - x_j)\right]\right) \qquad (15)$$

where X is longitude in degrees multiplied by 57.3 to convert it to radians and Y is latitude multiplied by -57.3 (assuming it is measured in degrees West).

The distance variable is a trade resistance factor that represents trade barriers such as transport costs, delivery time, cultural unfamiliarity and market access barriers. Most of the previous literature interpreted the coefficient of distance variable α_4 as the elasticity of trade with respect to an absolute geographical distance. The distance coefficient, on the other hand, measures the effect of relative distances of countries: However the sign of the distance coefficient cannot be predicted in advance. If the sign is estimated to be positive, it indicates that the market can be expected to be dominated by a home market

effect as explained by Helpman and Krugman (1989) and in numbers of other models such as the geographical model of Krugman a decrease in the distance coefficient indicates that trade with geographically distant countries increases relative to trade with geographically closer countries, we anticipate it is typically negative, however.

5.6.5 Absolute Quota Impact Indicator

The number of quotas is translated in the indicator by simply adding up all the squared percentages filled of a country, since the more quotas are imposed on a country; the more stringent is the quota regime. The value will now indicate those countries that are restricted most in absolute numbers. A problem here is that some quotas are aimed at groups of products. The formula for the quota impact indicator on textiles and clothing is then:

$$Qa_{ijt} = \sum_{i=1}^{n} \left(\frac{R}{L} \right)_i^2 \qquad (16)$$

Where Qa_{ijt} is the absolute quota impact indicator for country 'j' towards country imposing area 'i' in period t. R is the amount released, L is the limit, and n is the number of quotas.

The constructed quota impact indicator can be used to analyze the strictness of a quota regime imposed on a country. A country with a higher value in the quota impact indicator is restricted more in its absolute exports towards the quota imposing countries. A problem here is that some quotas are aimed at groups of products. This means that when the

products were not grouped but separated, the impact was, in practice, the same, but the indicator would have given a higher value.

A second indicator is abstracted from the first, by dividing by the number of quotas, which should give us some sort of average impact per quota. This is then:

$$Qr_{ijt} = \frac{Qa_{ijt}}{n} \qquad Qa_{ijt} \tag{17}$$

Where Qr_{ijt} is the relative quota impact indicator for country j towards country imposing area 'i' in period t. Here, a country with a higher value in the quota impact indicator is restricted more in its absolute exports towards the quota imposing countries.

5.6.6 Real Exchange Rate

Real exchange rate acts as a proxy for prices. The real exchange rate is computed as local currency per unit of foreign currency adjusted for domestic and foreign inflation. If our inflation vis-a vis partner country's inflation increases, the exchange rate in real term will appreciate and thus making our export expensive in relative terms. The effect of currency appreciation is twofold. Firstly exports would be instantaneously become more expensive and secondly, imports become cheaper. However, the latter effect will be negated to the extent that imported raw material would now cheaper. Overall though, it seems sensible to assume that the former effect will dominate. So we have used the real exchange rate in order to capture the international competitiveness of our exports.

5.7 Data Source

The data is collected for the period 1995-2004, over the period of Agreement on Textile and Clothing. Data on GDP, Per capita GDP and consumer price index are obtained from the World Development Indicator (WDI) data base of World Bank. Data on exchange rates, index number of export prices are obtained from the International Financial Statistics (IFS), CD-ROM database of International Monetary Fund. Data On quotas were collected from Ministry of Commerence, Pakistan. Data on distance (in miles) between Islamabad (capital of Pakistan) and other capital cities of country j are obtained from Indonesian Website: www.indo.com/distance.

GDP and per capita GDP are expressed in US dollars and constant price of 2000. European Union (EU) over the whole sample period is treaded as; Germany, France, United Kingdom, Italy, Spain, Netherlands, Belgium, Sweden, Austria, Greece, Portugal, Denmark, Finland, Ireland and Luxembourg. EU value of GDP was treaded as sum of the individual countries, where as per capita GDP was formed by taking the average of individual countries.

CHAPTER 6

RESULTS AND DISCUSSION

6.1 Basic Gravity Model (Model-1)

The cross-country OLS regression results for model-I are reported in Table 6.1. The overall performance of the model seems to be surprisingly good, with high *R* Squared value of around 0.99 for the basic Gravity equation. The standard feature of the gravity model work well. Most of the explanatory variables are found to be highly significant, indicating that the gravity model is appropriate and effective in explaining Pakistan's textile trade flows.

In our Basic Gravity model, all four of the traditional "gravity" effects are intuitively reasonable with statistically significant coefficients. The coefficient of product of GDP is positive and highly significant as well, showing that one percent increase in product of GDPs will lead to 1.7 percent increase in the exports flows of textile and clothing. This implies that Pakistan's Textile and Clothing trade tends to more with larger economies. The product of GDPs is considered as the size of the economy. Infact the target country GDP is simply a measure of the extent that exports are "sucked in" as the foreign economy grows. Local country GDP is simply a measure of the size of the domestic economy in terms of the available goods as one would expect "larger economies" to export more. So as the product of both increases, there will be more trade between the two countries; so the positive sign for the coefficient of GDPs shows that as the economy

size increases there will be the greater possibility of more trade. This result is consistent with the basic hypothesis of the gravity model that the trade volumes will increase with an increase in economic size. The coefficient of the product of GDP per capita in our specification is positive, statistically significant at 10 % level. It indicates that one percent increase in per capita GDP will boost Pakistan's textile and clothing trade by 2.3 percent.

Table 6.1

Model-I

Independent Variables	Coefficients	Std. Error *	T- Statistics*
Constant	28.33	7.55	3.74
Product of GDP	1.79	0.063	28.27
Product of Per Capita GDP	2.32	1.40	1.65
Per Capita GDP difference	-5.78	1.66	-3.47
Distance	-5.75	0.58	-98.75
R-Squared	0.99		
Durbin- Watson	1.13		

*The model is estimated through weighted least square, the standard errors and t-statistics are hetroskedasticity robust (white 1980).

While we are taking GDP as a variable, the reason for taking per capita GDP as a separate independent variable is that it indicates the level of development. Per capita GDP provides a good proxy for the level of development and infrastructures that are essential to conduct trade, and as such the more developed the countries are, the more

would be the trade between the pairs of countries. If a country develops, the consumers demand more exotic foreign varieties that are considered superior goods. The more similar the countries are in terms of GDP per capita, the larger will be the volume of bilateral trade. Further, the process of development may be led by the innovation and invention of new products that are then demanded by other countries. Also it is true that more developed countries have more advanced transportation infrastructures which facilitate trade. Thus with economies of scale and differentiated products, the volume of trade depends in an important way on country size in terms of its GDP per capita. So the increase in the product of per capita GDP shows the linkage between Pakistan and its trading partners. The Pakistani producers tend to differentiate their product and offer larger the varieties of goods offered.

Distance is also important in explaining trade between economies. The estimated coefficient on log distance has the anticipated negative sign, showing the geographical distance is a hurdle in Pakistan textile and clothing trade. The negative sign shows the inverse relationship between trade and distance. Distance does not only mean for geographical distance it is also a proxy for transport costs. Distance indicates the time elapsed during shipment, it includes the risk of damage or loss of the good due to weather or mishandling. Communication costs that much business depends on the ability to exchange more information, of a less formal kind, than can be sent over a wire is also important in feature of distance. Distance may also be correlated with the costs of searching for trading opportunities and the establishment of trust between potential trading partners. The "Cultural difference" may also be that greater geographic distances

are correlated with larger cultural differences. Cultural differences can impede trade in many ways such as inhibiting communication, generating misunderstandings, clashes in negotiation styles, etc. As indicated by the coefficient of distance variable, distance remains a hindrance to trade. Globalization, despite its benefits, has not reduced the importance of physical distance. This is not to further an argument that globalization has not improved upon costs associated with distance since it has by way of improved communication, breakdown in cultural barriers, and facilitation transactions. However, distance remains a barrier to trade even through technological innovations continue to spark reductions in transportation costs. So by the facts it has proved that as the distance increases, it will decrease Pakistan textile and clothing trade.

6.1.1 Linder vs. Hecksher-Ohlin (H-O) hypothesis

Trade flows can be explained by H-O hypothesis which states that trade among countries depend on the factor endowment. On the other hand, Linder hypothesis explains trade flows among nation because of the differences in demand structure. The estimated regression coefficient associated with absolute difference in per capita is positive, it implies that as difference in per capita income increases, Pakistan's bilateral trade flows also increases and hence supporting the H-O theorem. The negative sign of this variable would then support the argument of Linder hypothesis, which says that trade among countries depends on the similarity of their demand structure. Thus Linder hypothesis can be captured by the degree of similarity between the per capita of home country with its trading partners.

Our estimation results support the Linder hypothesis. Similar countries trade more than dissimilar ones. The log difference of per capita GDP difference appears as negative and significant for the model with these variables expressed in constant international dollars. So the negative and significant coefficient proves the Linder hypothesis for Pakistan.

In order to check the impact of ATC on Pakistan's textiles and clothing an augmented regression is estimated in the following section.

6.2 Modeling Textile and Clothing (Model-II)

After estimating the basic gravity model, an augmented gravity model by incorporating explicitly other variables such as real exchange rate and relative quota impact indicator both for textile and clothing is estimated. The results of the model-II are shown in Table 5.2. As far as the impact of GDP of Pakistan and its trading partners is concerned, it is statistically significant and having positive sign. It shows that a one percent increase in the product of the GDPs lead to 1.7 percent increase in export flows. Similarly, the coefficient of the per capita GDP is positive and significant which shows that one percent increase in the product of per capita GDP results in increasing the exports flows by 4.8 percent, indicating a highly elastic response of Linder effect which is explained by the degree of similarity of per capita of two countries is negative, implying that Pakistan's export flows depend on the demand structure of its trading countries. The coefficient of distance variable is negative implies that a one percent increase in distance lead to 5.7 percent decrease in Pakistan's exports flow.

Table 6.2

Model-II

Independent Variables	Coefficients	Std. Error*	T- Statistics *
Constant	15.77	6.68	2.36
Product of GDP	1.79	0.24	7.31
Product of Per Capita GDP	4.82	0.78	6.13
Per Capita GDP difference	-8.6	2.08	-4.13
Distance	-5.61	0.16	-33.19
Quota Impact Indicator (Textile)	0.11	0.032	3.54
Quota Impact Indicator (Clothing)	0.32	0.10	3.17
Real Exchange Rate	-0.13	0.17	-0.76
R-Squared	0.99		
Durbin- Watson	1.6		

*The model is estimated through weighted least square, the standard errors and t-statistics are hetroskedasticity robust (white 1980).

The coefficients of the relative quota impact indicator for both textile and clothing in our model, are positives and statistically significant. The coefficient of relative quota impact indicator shows the restrictiveness of quota towards the quota imposing country. So a country with higher value in quota impact indicator shows more stringent quota policy and vise versa. The regression results shows the gradual phase out of the MFA leads to relax in our textile and clothing quotas which lead to increase in our export of textile and clothing. It also indicates that quota was not a binding constraint on us, as the fill rates

with the exception of few commodities remained less then unity. It implies that generally our exports continued to be lower than the limit set by the quotas.

The relatively low fill rate for textiles and clothing exports could partly be attributed to low value addition and also due to psychological constraint set by quota imposing countries i.e although quota was not a binding constraint but it has set a limit on the part of domestic producers of Pakistan. As a result of these quotas producers were less inclined towards new markets and thus the actual products were generally remained below the potential. And this has led to low fill rate in the textiles sector.

Another possible justification could be that if the liberalization proves too damaging for the developed countries market, they will go far other safe guard measures for instance, imposition of technical barriers, rules of origin or anti dumping action. So it will be another barrier on Pakistan's textiles export. That's why producers are less persuaded towards the fulfilling of the required target.

There is now a clear understanding that, in trade policy terms, international competitiveness requires ready access to international inputs at close to world prices and a domestic market subject to competitive pressure, both among domestic producers and foreign producers. Experience in Pakistan and elsewhere suggests that highly protected domestic markets not only reduce the incentive to export but also penalize the economy by allowing inefficient domestic producers to extract policy-induced rents from domestic consumers, and this phenomena creates supply constraint in the country, means more of

the production is observed domestically, so we have a very low exportable surplus. This is yet another reason for low fill rate.

Cotton is the primary requirement of textile industry. However, cotton has a low out put per acre, because of outdated farming methods and the illiteracy of the farmer, who is not willing to learn new techniques of production. Seed is generally of poor quality and methods of plants production are outdated. As a result, the cotton produced is not according to requirement of the industrial needs. So due to the lack of basic input, producer cannot produce sufficient quantity of production. And we are lag behind in fulfilling the required target. That's why our quota utilization remains below.

High cost and poorly functioning infrastructure can clearly impede the operation of Pakistan's textiles enterprises which may be efficient in terms of mastery of their own production process. But because of the poorly managed government structure and high cost of production tends to produce below the potential level, and thus quota fill rates, most often remains below the target.

Pakistan has a low literacy rate, which lead a phenomenon of unskilled labour in the market. That's why the labour employed in textile sector is not properly trained, so it generates, production of poor quality of T&C products, and hence reduce efficiency and increase overall cost. Thus producers are unable to produce the targeted quantity because of the high cost of production, and that's why fill rate remain below the target.

It is widely acknowledged that slow growth in private investment, particularly in textiles sector is a major cause of less competitiveness. Because public enterprises have facing the problem of malpractices as well as using obsolete technology and so producing below the optimum level of production. And thus not meeting the required target of quota.

There is lack of diversification. Hirshman's coefficient of concentration for commodity-wise for exports, ranges from 0.391 to 0.436 during the MFA phase out period (1994-95 - 2003-04). The same coefficient for country-wise exports ranges from 0.271 to 0.26 during the same period. This shows that process of exports diversification is very slow and the search for the new markets is negligible.

The coefficient of real exchange rate carries perverse sign and is statistically insignificant. The real exchange rate is computed as local currency per unit of foreign currency, adjusted for domestic and foreign inflation rate. If our inflation vis-a vis partner country inflation rate increases, the exchange rate in real term will appreciate thereby making our exports relatively expensive. So we have used the real exchange rate in order to capture the international competitiveness of our exports. The effect of currency appreciation is twofold. Firstly exports would be instantaneously more expensive' secondly, the imports become cheaper. However, this effect will be negated to the extent that imported raw material would now become cheaper. Overall though, it seems sensible to assume that the former effect will dominate, however, the insignificance of this variable in our case is possibly suggesting that the two conflicting effects (supply and demand) are canceling each other out.

Generally, the model shows that the removal of the export quotas enhances our exports and all the variables except real exchange rate are significant. The over all performance is quite satisfactory and augmented version fits the data well which explains 99 percent of the variation in the textile and clothing export of Pakistan.

To have a more clear understanding of the impact of the removal of the quota, two separate regression for textile and clothing have estimated and the results are discussed in the following section.

6.3 Modeling Textile Exports (Model-III)

The regression results for model-III shows that product of the GDP has the expected positive sign which shows that as a result of one percent increase in the product of GDP, of Pakistan and its trading partner, the exports flows increases by 1.8 percent implies a highly elastic response. The increase in the per capita income has also its positive and significant impact on textile exports. Since the coefficient associated with absolute difference in per capita is negative, this shows that Pakistan's exports flows are explained by difference in demand structure of its partners and thus supporting the Linder hypothesis. The distance variable carries the expected negative sign and is statistically significant. The result of the regression shows that trade flows are reduced by increasing the distance between Pakistan and its trading countries.

Table 6.3

Model-III

Independent Variables	Coefficients	Std. Error*	T- Statistics *
Constant	15.50	7.47	2.07
Product of GDP	1.81	0.23	7.65
Product of Per Capita GDP	7.2 1	0.88	8.12
Per Capita GDP difference	-10.9	2.09	-5.25
Distance	-7.43	0.10	-73.20
Quota Impact Indicator (Textile)	0.37	0.03	10.03
Real Exchange Rate	-0.28	0.19	-1.48
R-Squared	0.99		
Durbin- Watson	1.3		

*The model is estimated through weighted least square, the standard errors and t-statistics are hetroskedasticity robust (white 1980).

The overall results of the model-III are in accordance with the typical gravity equation and with the exception of the real exchange rate; all the coefficients are statistically significant. The results also support the view that the phasing out of the MFA has increased our textiles exports.

Now we will check the impact of quotas on clothing, and the results are shown in table 6.4.

6.4 Modeling Clothing Exports (Model-IV)

The impact of phasing out of MFA on clothing exports is captured by estimating another model. The results of the model-IV are presented in the table 6.4, which shows that GDP of both the countries affecting positively our export flows. Similarly per capita GDP, which shows the development indicator of a country, also enhance the trade flows. The coefficient of the absolute difference in per capita GDP of the Pakistan with its trading partners is negative, implying that clothing export flows are also explained by Linder hypothesis.

Table 6.4

Model-IV

Independent Variables	Coefficients	Std. Error*	T- Statistics*
Constant	5.5	8.17	0.68
Product of GDP	1.60	0.27	5.79
Product of Per Capita GDP	3.54	0.65	5.37
Per Capita GDP difference	-6.41	2.16	-2.96
Distance	-4.20	0.23	-17.56
Quota Impact Indicator (Clothing)	0.40	0.12	3.33
Real Exchange Rate	-0.11	0.16	-0.71
R-Squared	0.99		
Durbin- Watson	1.26		

*The model is estimated through weighted least square, the standard errors and t-statistics are hetroskedasticity robust (white 1980).

The coefficient of the quota impact indicator on clothing is positive and significant as well implying that removal of quotas have also benefited clothing exports. The coefficient of the real exchange rate is once again insignificant and carries the perverse sign. Model-IV thus shows that gravity equation fits the data well and clothing exports have increased as a result of phasing out of the quota.

On the basis of theoretical and empirical discussion, a suitable gravity model for Pakistan has been specified and estimated above. After attempting with various specifications, the above mentioned models have been found as the best fit. Our results strongly support the basic arguments of the gravity model. So by looking at the results it can be inferred that the gradual phasing out of the MFA has increased our exports, although our quota utilization rate remains below the target.

CHAPTER

7

CONCLUSION AND POLICY IMPLICATIONS

The study attempts to investigate the impact of the Agreement on Textile and Clothing (ATC) restriction on Pakistan's textile and clothing sector to the USA, EU and Canada. This issue is of enormous importance to developing countries, and particularly to countries such as Pakistan that depend heavily on exports of textile and clothing. In addition to the empirical analysis of the impact of ATC on textile and clothing, the study attempts to access:

- The problems and prospects of Pakistan's textile and clothing sector,
- History of the textile and clothing quotas and the implication of the gradual phase out of the MFA on Pakistan's textile and clothing sector.

The study estimates the gravity models of Pakistan's textile and clothing trade. Four regressions were conducted to analyses the effect of phasing out of the MFA on the exports of T&C. The results strongly support that Pakistan's T&C trade is positively determined by the size of the economies. As per received wisdom and intuition, higher economic size of a country pair, positively influence the trade flows among them. So as the product of both countries' GDP increases there will be more probability of increasing export of T&C between Pakistan and its partner countries (EU, USA, Canada). Per capita GDP also shows the positive sign supporting the argument that the increase in the product

of the per capita GDP will boost up the trade of Pakistan's textiles sector. And thus it has been proved that the increase in per capita GDP shows greater the development in Pakistan, the more would be trade between the pairs of countries.

The study also capture the effect of distance which shows that as the distance between Pakistan and trading countries (USA, EU, Canada) increases, the trade will decrease. Thus the negative coefficient of 'distance' variable, implying that Pakistan's trade will be more concentrated towards the countries in the close proximity. Distance does not only mean for geographical distance it is also a proxy for transport costs. It includes the effect of communication cost, time elapsed during shipment, cost of searching trade opportunities and culture difference as well.

To test for the strength of the Linder hypothesis as against the H-O hypothesis we have included the log of absolute difference in GNP per capita for a country pair. As stated earlier this allows us to address the question-whether trade flows are large among similar countries or dissimilar countries. Our estimation results support the Linder hypothesis. Similar countries trade more than dissimilar ones. The log difference of per capita GDP difference appears as negative and significant for the model with these variables expressed in constant international dollars.

As for as relative quota impact indicator for textile and clothing in model-II is concerned, the results demonstrate that the gradual phasing out of the MFA leads to enhance our export of textile and clothing. It also indicates that quota was not a binding constraint on

us, as the fill rates with the exception of few commodities remained less than unity. It implies that generally our exports continued to be lower than the limit set by the quotas.

The relatively low fill rate for textiles and clothing exports could partly be attributed to low value addition and also due to the psychological constraint set by quota imposing countries on Pakistani producers. It means although quota was not a binding constraint but it has set a limit on the part of domestic producers of Pakistan. As a results of these quotas producers were less inclined towards new markets and thus the actual products were generally remained below the potential. This has led to low fill rate in the textiles sector.

Another factor that has affected the T&C export flows is the high domestic inflation. As a result of which, real exchange rate has appreciated over time and thus eroded the competitiveness of our exports.

7.1 Policy Implication

In order to cope with emerging challenges in this sector and maintain due share in the international market following recommendations are made.

- **Develop an action plan.** Pakistan needs to develop a strategic approach in order to tackle the challenges mentioned above. While the government needs to set up an enabling environment, the business sector needs to develop the supply response to market requirements.

- **Reinforce sector associations.** To ensure practical responses, 'textile and garment manufacturers' associations, in agreement with the government, will be required to assume more responsibilities such as fulfilling labour standards; taking over quota administration; and operation of bonded warehouses.

- **Understand the competition.** Enterprises need to develop a mechanism to compare performance with competitors in other countries. One of the difficulties of the quota regime is that many manufacturers have no comparison with competitors. Many companies — especially Small Medium Enterprises (SME) lack a clear understanding of their ability to compete successfully in a quota-free world.

- **Increase productivity.** Investment in human capital and machinery can increase productivity and lead to reduced costs and prices. Training institutions need to enhance their training capacities.

- **Develop new products and markets.** Avoid traditional markets and target new markets with value-added products.

- **Develop 'e-commerce'.** E-applications facilitate sourcing and supply chain management; production planning; design and forward integration,

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US QUOTA PHASE-OUT PROGRAMME DURING THE TRANSITION PERIOD

	Phase I (01/01/95)	Phase II (01/01/98)	Phase II (01/01/02)	Phase II (01/01/05)
Yarn		None	Filament Yarn (Category 600 & 606). Staple fibre Yarn (Category 607). Silk blend and non Cotton Befetable fibre Yarn.	Sewing Thread and Yarn, cordage, Cotton Yarn, Wool Tops and Yarns. Staple Yarn (Categories 603 & 601).
Fabrics		Special Purpose Fabrics (Category 229)	Knit Fabrics. Non-woven Felt Fabric, MMF Impression and Glass Fibre Fabric. Silk Blend and Non Cotton Vegetable Fibre Fabric	Cotton and MMF Broad Woven Fabric, Pile & Tufted Gabric, Woollen and Worsteds.
Apparel	Babies garment (categories 239). Down filled coats (Categories 353, 334 653, & 654) and hosiery (Categories 632)	Babies Apparel (except diapers) (Catogories 239, 439 and 839). Wool and Man-made Fibre Hosiery (Categories 432 and 632). Cotton bras and body-supporting garments (Cagtegories349). Down Aparel (Categories 353, 354, 653, and 654). Footwear silk blend and non cotton vegetable. Miscellaneous (except bras and scarves) (Categories 832 and 859). Wool/Other Appareal (Categories 459, 659 and 859). All silk Appreal (> 70% weight silk) (700 series of categories).	Knit gloves, dressing gowns, etc. Headwear Judo and Karate uniform knit neckwear and Tights. Man-made Fibre bras and body suppoting Garments silk blend and non cotton vegetable fibre apprel (except sweaters and underwear).	Playsuits, Diapers. Woven gloves, cotton hosiery sweaters. Underwear, coats and jackets. Suits shirts and blouses. Dresses. Skirts, trousers and shorts. Nightwear. Miscellaneous cotton (Category 459). Miscellaneous MMF (category 659) (Category 459). Miscellaneous MMF (category 659)
Made-ups		Carpet (categories 369, 465, 469 & 665). Wadding and footwear parts. Silk blends, non cotton vegetable, other made-ups and miscellaneous (categories 899)	Luggage, handbags, etc. Wool blankets, cotton (categories 369 except bed linens and towels). Wool: category 469 (except bad linens). Man-made fibre (category 669). Man-made fibre (category 666 except bed linens)	Bed Linen,table linen, towels, shop. towels and dishcloths).

Source: Textile Horizon March 1998 and WTO official document No. G/TMB/N/213/Corr.1.