Pakistan in the Apparel Global Value Chain

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Acronyms

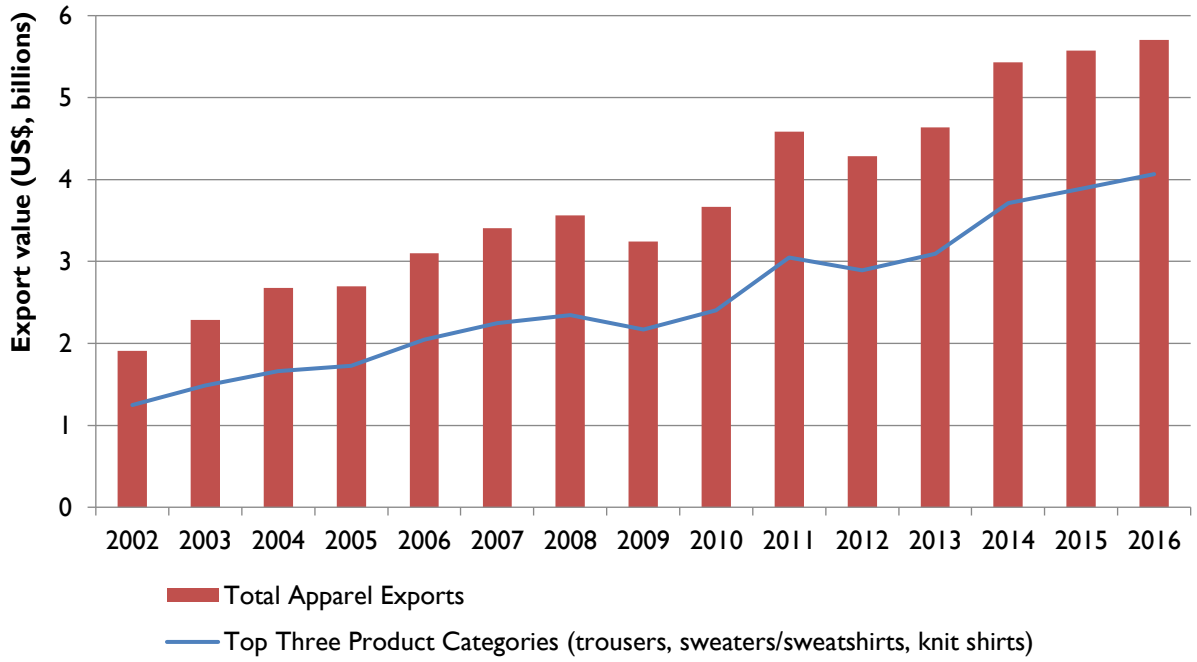
APTMA	the All Pakistan Textile Mill Association
CAD	Computer Aided Design
CAGR	Compounded Annual Growth Rates
CCC	Clean Clothes Campaign
CMT	Cut, Make & Trim providers
DTRE	Duty and Tax Remission
DLTL	Drawback of Local Taxes and Levies
EDB	Engineering Development Board
EPZ	Export Processing Zone
FDI	Foreign Direct Investment
FOB	Free on board
GE4DE	Gender Equality for Decent Employment
GENPROM	United Nations Development Programme's Gender Promotion in the Garment sector through Skills Development
GSP	General System of Preferences
GVC	Global Value Chains
GVCC	Global Value Chains Center
ILO	International Labour Organization
MFA	Multi-Fibre Agreement
MMF	Man Made Fibres
NTC	National Tariff Commission
OBM	Original Brand Manufacturers
ODM	Original Design Manufacturers
OEM	Original Equipment Manufacturers
PBOI	Pakistan Board of Investments
PRGMEA	Pakistan Readymade Garment Manufacturer & Exporter Association
PTEA	Pakistan Textile Exporters Association
RSP	Retail Selling Price
SEZ	Special Economic Zone
SMEDA	Small and Medium Enterprise Development Authority
TVET	Technical and Vocational Education and Training
T&A	Textiles & Apparel
WRAP	Worldwide Responsible Accredited Production

1. Introduction

Pakistan's apparel industry is inexorably linked with its history in textiles. Long one of the world's leading cotton producers, Pakistan has used local access to the natural fiber as well as the related yarn and fabric materials to integrate into the apparel Global Value Chain (GVC) in certain product categories. Overall, Pakistan's apparel exports stood at US$5.7 billion in 2016, an increase of nearly 200% compared to 2002, when they were US$1.9 billion (see Figure 1). From 2010 to 2016, the country's annual growth rate of exports was 7.5%, which helped it gain market share to become the world's eighth largest apparel exporter, ninth if one aggregates all 15 countries in the European Union.

Although those data points suggest a broad-based increase, it is important to note that growth has been narrowly concentrated. Three product categories—trousers, knit shirts and sweaters/sweatshirts—accounted for 66-71% of apparel's export values from 2006 to 2016. Of those, only one had dramatic expansion: trousers. With its cluster of denim manufacturers, Pakistan's exports in the product category grew by an average of 11.6% in the period from 2006 to 2016, lifting the country to the position of the world's sixth-largest exporter with 4% market share.

Figure 1: Pakistan's Apparel Exports, 2002-16



Source: UN Comtrade, 2002-2016b, 2002-2016c.

The sector has had difficulty making much headway in other products. At a time when China's position as the unquestioned apparel heavyweight is receding to a degree, there has been some worldwide reshuffling in recent years. However, it has been countries such as Vietnam, Cambodia and Bangladesh—and not Pakistan—that have had the most success growing their exports across product and material categories. Critical attributes that have allowed businesses in those markets to integrate into the supply chains of leading firms include quality, lead time and compliance to social and environmental standards in addition to the baseline metric of price.

Pakistan's potential upgrading in the GVC has been constrained by multiple factors. Upstream, there are supply chain gaps in critical inputs. Synthetic fibers and important components that are not available in the local market are subject to tariffs and taxes that increase costs. This even includes cotton, where production has stagnated in recent years and the fibers that are generated are of low quality. Downstream, underdeveloped energy infrastructure and challenging security considerations have hampered apparel producers. Lead times are not necessarily a major limitation with the existing product mix, but they limit the potential for industry expansion because of the potential for delays associated with imported inputs. Meanwhile, industry institutions are fragmented and fail to take a holistic look at the sector. Cognizant of these and other macro issues, global buyers have largely shunned investing in Pakistan, with incoming FDI into the apparel industry below levels seen in regional competitors.

Vietnam and Sri Lanka can both serve as potential models as Pakistani stakeholders consider how best to propel the industry forward. Vietnam, as highlighted, has been notable for its expansive gains, allowing it to become the world's fourth largest apparel exporter. Sri Lanka's export profile is more concentrated, but the country punches above its weight class by concentrating on a narrow range of export products. Both countries have attracted foreign investment, using industrial parks and all-inclusive investment measures to attract global buyers.

Pakistan's strengths in the apparel sector revolve around its integrated industry with high domestic ownership located in a country with a long history of producing cotton and relatively competitive labor prices. This affords multiple plausible paths for generating increasing returns in the form of higher exports and employment prospects. The burgeoning retail market in Asia might pose additional opportunity. In terms of greatest likelihood of success, solidifying its position in existing niches is likely to gain the most immediate traction. However, it will be critical for all Pakistani stakeholders across the value chain to convene and agree on a shared strategic vision.

Pakistan's apparel industry has been examined by many organizations in recent years, with its workforce and labor regulation being regular subjects of research interest. This report centers its analysis on the country's firms, using the GVC framework to evaluate their interaction with global industry forces. After assessing the current industry, the goal was to identify future upgrading trajectories. Research was supported by both qualitative and quantitative efforts. Field research was conducted in September 2018, with Duke GVCC researchers interviewing 25 in Lahore, Faisalabad and Karachi. Interviews were supported by firm-level data based on Pakistan Custom's Authority data provided by the World Bank as well as the UN Comtrade database.

The report is structured as follows: It first provides an overview of the apparel GVC to present a clear understanding of the scope of the industry, how markets are structured and how changing distribution of demand and supply destinations and lead firm organization alter structural dynamics in the chain. It then analyzes the domestic industry within Pakistan, first detailing the country's position in the chain by looking at its firm profile, backward linkages, product profile and end markets. The internal organization of the industry is then outlined as well as recent examples of upgrading and the factors that influence the labor environment. After assessing the country's advantages and constraints, it pivots to Vietnam and Sri Lanka's experiences. The report then concludes by outlining potential upgrading strategies to enhance the country's competitiveness.

2. The Global Apparel Industry

Key Points

- China is world's leading source of apparel products, accounting for 34% of the value of global exports in 2016. Its market share has declined some in recent years as the country has focused on higher-value activities.
- Countries such as Vietnam, Cambodia and Bangladesh have increased overall market share by integrating into supply chains of lead firms in significant volume. New sourcing locations are evaluated by range of variables, including price, quality, lead time and compliance to social and environmental standards.
- Lead firms in the value chain are Original Brand Manufacturers (OBMs) that control marketing & sales activities. Other categories of businesses include Cut, Make & Trim providers (CMTs) that are responsible for cutting, sewing and adding trim to produce garments; Original Equipment Manufacturers (OEMs) that perform CMT activities but also source raw materials; and Original Design Manufacturers (ODMs) that design and develop while overseeing the production process.

The apparel industry has often played a catalytic role in economic development. With low barriers to entry in terms of capital, technology and labor skills, many countries have targeted the sector as a means for providing significant employment opportunities and export revenue. The benefits associated with the industry ensure the competitive environment is fierce. For markets to upgrade within the chain, domestic apparel manufacturers must find a way to embed themselves within well-established international networks of production and distribution, notably organized by South Korean, Taiwanese, and Chinese or Hong Kong first-tier suppliers and US and European buyers.

The depth and breadth of these networks is highlighted by the size of international trade in the industry. In 2016, the world value of apparel trade was approximately US$377 billion.[1] Although there has been some fluctuation in the value of global exports in recent years, the industry's growth rate for the six years between 2010 and 2016 was 2.3%. Since the economic crisis, apparel exporters have become even more focused on Asia, but with less emphasis on China. China's share of apparel trade peaked in 2010 at 43% before falling in more recent years. Instead, growth between 2008 and 2016 has been driven by Southeast and South Asian suppliers.

These characteristics provide a broad snapshot of the industry. Building on these, the considerations that have helped shaped the global industry in recent years include the following:

1. **China remains the world's largest apparel producer and exporter.** China's share of global apparel exports increased from 26% to 43% in the period from 2002 to 2010 before falling to 34% in 2016. Even with that decline, the value of its total apparel exports was 126% higher than the second leading exporter, the EU-15[2]. The country has wide-ranging capabilities across diverse categories of products and materials. In recent years, the

[1] For this report, apparel products are those covered by the 61 and 62 HS codes.
[2] The European Union-15 (EU-15) includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

country's exports have shifted toward product categories with higher unit values, including coats, dresses and skirts and within product categories (knit shirts). China's top exports in 2015 by product category were sweaters/sweatshirts (16%), trousers (15%) and coats (12%). In terms of world market share, China accounts for the highest percentage of bras (51%), coats (49%), accessories (46%), miscellaneous apparel (45%), and baby apparel (44%).

2. **New sourcing destinations are increasingly evaluated based on factors beyond price, with quality, lead time and compliance to social standards the most important considerations.** While China is likely to remain the dominant sourcing destination for the foreseeable future, there are indications the Chinese industry might be entering a period of transition. Industry surveys suggest large-scale buyers are looking to diversify their supply chain as a hedge against China's increasing labor costs, currency appreciation and policy focus on higher value-added industries. Although this isn't reflected in trade data to a significant degree, it nonetheless provides opportunities for other countries in the sector. Nations like Cambodia, Vietnam, Bangladesh and Pakistan have taken advantage to varying extents.[3]

   As new markets enter the chain, local businesses must understand the governance landscape. Lead firms in the apparel GVC concentrate on the highest value-adding activities (branding and retail) while setting minimum standards and sourcing criteria for suppliers. Whereas price is important, buyers do not necessarily buy from the supplier that offers the *lowest* price. Instead, other key factors include quality, lead time and reliability in delivery, access to inputs, full package services as well as compliance to social and, to a lesser extent, environmental standards. Box 1 below introduces social standards while the Standards subsection offers more detail. The Lead Firms and Governance subsection also examines these features of the chain in further detail.

Box 1: Social Compliance in Apparel GVC

Social compliance has increased in importance in buyers' sourcing decisions as a response to a variety of factors. Corporate social responsibility (CSR) campaigns by NGOs and compliance-conscious consumers have played a role, often spurred through concern about working conditions or well-publicized disasters in apparel factories. Labor and environmental compliance are important due to the labor intensity of the apparel industry and the environmental impact of the textile industry (energy use and wastewater are two examples).

Lead firms have introduced initiatives to align with these efforts or increasing requirements for sustainability reporting. For example, Levi's, the jeans manufacturer, has prioritized reducing greenhouse gas emissions in its supply chain. Other buyers have developed codes of conduct and monitoring and auditing systems to ensure "brand security." Compliance with buyers' labor and environmental standards generally does not provide suppliers or countries with a competitive advantage since it has become a minimum criterion for entering and remaining in supply chains. Poor compliance and bad occurrences do not only affect individual firms but can affect the image of the whole country.

Source: Frederick, 2016.

[3] The China-Pakistan Economic Corridor is one such example; the partnership between the two countries could yield initial investments of US$2.7 billion in Pakistan's textile & apparel (T&A) industries (Pakistan Today, 2018). For more information, please see the section on Pakistan.

3. **The retail sector in Asia offers growth opportunities.** The largest and the fastest-growing consumer market for apparel is in Asian countries, including Australia, China, Japan, Korea, and Russia. In 2015, Asia-Pacific accounted for roughly a third of global apparel retail sales, up from 23% a decade before. The region also had the highest compound annual growth rate (7.6%), compared to the world average of 2.9%. The retail sector in Asia presents opportunities for growth in the higher value-added service and knowledge-intensive activities. As of yet, these markets do not have powerful domestic brands and global brands have yet to fully tap these markets. Asian firms may be particularly suited for entering the market due to advantages in cultural affinity, sizing, advertising channels, language and preferred retail formats.

4. **The global apparel industry is still influenced by tariffs, especially in regions such as South Asia.** Although the Multi-Fibre Agreement (MFA) quota regime that characterized the apparel industry for decades no longer exists, there are still prominent barriers to trade. Tariffs are the most significant, with developed nations regularly applying charges of 10-13% depending on the product. While broader trade agreements sometimes eliminate or reduce these levies, textile and apparel products are often subject to restrictions.[4]

   There are also important regional variances. South Asia continues to be one of the least integrated regions in terms of intraregional trade as a share of total trade, with intraregional trade accounting for close 5% compared with 50% in East Asia and 22% in the Sub-Saharan Africa (Kathuria, 2018). Its most important trade agreement is the South Asian Free Trade Agreement (SAFTA), but there is little progress in its implementation given political tensions, particularly between India and Pakistan. Despite some growth in textile trade from India to Bangladesh and, to a lesser extent, Sri Lanka, one cannot speak of a regional value chain.

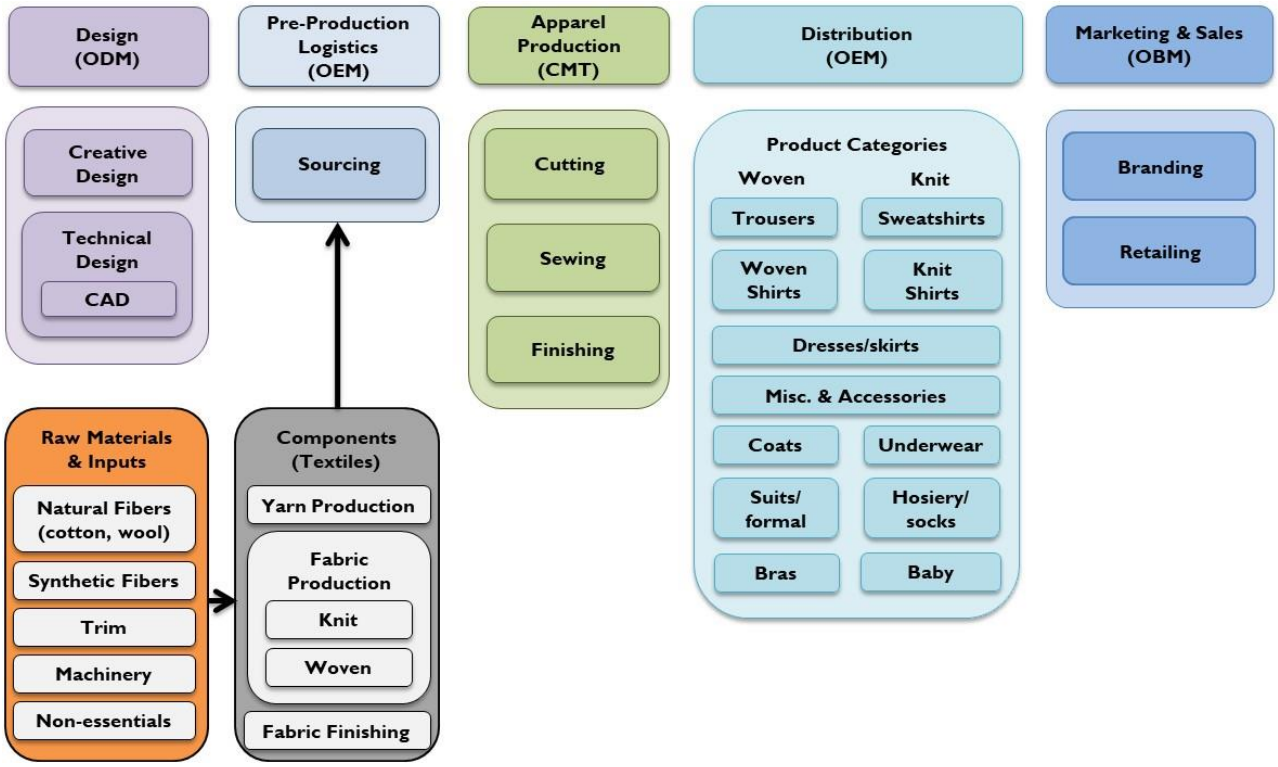
2.1. The Apparel Global Value Chain

As in many other sectors, the apparel industry is organized in GVCs where production of components and assembly into final products is carried out via intra-firm networks on a global scale. The apparel supply (or value) chain can be broken up into five stages: 1) design; 2) pre-production logistics; 3) apparel production; 4) distribution; and 5) marketing & sales. While apparel is intertwined with the textile industry, this report focuses primarily on apparel, devoting only limited space to textile production and raw materials.[5] Figure 2 below depicts the main stages and actors. The subsections that follow provide additional detail on each segment. The Governance and Industry Organization section then outlines the main categories of firms.

[4] To cite one example: 27 developed countries have provided tariff preferences to over 100 beneficiary countries through the General System of Preferences (GSP). However, tariffs for apparel products are only marginally reduced in the standard EU and USA GSP schemes. Within the GSP, some countries have negotiated preferential access for lower-income countries such as the Everything but Arms and the GSP+ initiatives by the EU, and the Africa Growth and Opportunity Act AGOA by the USA. Preferential market access in these agreements is governed by relatively restrictive rules of origins that typically require the use of yarn and fabric produced in a granting or signatory country, which has had a crucial impact on outcomes.

[5] Textile components are also used in products such as home textiles (linens, curtains and rugs/carpets are examples) and industrial-use products such as filters, seat belts or building materials. Non-apparel end uses are considered a separate GVC and are thus not included in this report.

Figure 2: The Apparel Global Value Chain



Source: Authors. **Note:** Raw materials & inputs feed into textile components that are then used to generate apparel products. Since this report focuses on the apparel GVC, the raw materials & inputs as well as components segments are considered separate supporting activities.

Design: This stage includes actors that offer aesthetic design services and product development for outputs and components throughout the value chain. Design and style activities are used to attract attention, improve product performance, cut production costs and give the product a strong competitive advantage in the target market (Fernandez-Stark et al., 2011). Designers can be divided into two categories: 1) *creative design*, which has traditionally involved human designers sketching and generating fashion ideas that are featured in shows; and 2) *technical design*, which involved translating those ideas into garments.[6] As this is their core competency, firms operating in the high-end segment of the market retain design functions in-house, while consumer brands and retailers, which follow the design tendencies set by the high-end market segment, are more open to outsourcing design to other companies.

Pre-Production Logistics: Critical pre-production activities in the apparel GVC include the sourcing of materials such as fabrics, yarn, trim and accessories. The inputs must align with the design needs and product characteristics associated with the final product. Factors that are prioritized include price, quality, reliability and lead times.

Fabrics are the most expensive input into apparel production. It can be divided into two key categories: knit and woven. Trade is evenly split between knitted and woven apparel (50% and 50%

[6] Computer-Aided Design (CAD) is a growing component of the design segment of the chain, with software programs generating ideas for customers based on previous tastes. Box 7 on Red Collar Group in China provides some detail on the development of these companies.

in 2016). Knitted, however, is growing at a faster rate than woven—in 1992, knits were only 40% of the world export market while woven apparel was 60%. Woven garments have higher unit values than knitted (US$9.8 per unit compared to US$4.3 in 2015).

Each differ considerably in terms of yarn and machinery requirements as well as labor skill and capital investment. Woven fabrics require considerably higher investment than knit production. Knit-textile producers are more often vertically integrated with apparel production, while woven fabric producers are independent. Knit fabrics are used for t-shirts, dresses, sweaters, underwear and swimwear amongst others, while woven fabrics are used for dress shirts, pants, jeans, and home furnishing such as bed linens and curtains.

The quality of textiles is directly related to the final product's quality. However, in contrast to apparel production, textile production is more capital-, skill-, and scale-intensive, which is a challenge for the establishment of backward linkages. A certain minimum size of the apparel industry, locally or regionally, is a requirement for local or foreign investment into backward linkages, particularly in the woven segment (Staritz & Frederick, 2014).

Box 2: Raw Materials in the Apparel GVC

The four largest categories of inputs in the apparel GVC include natural fibers, synthetic fibers, apparel trim and accessories (buttons, zippers, hangers, tags and other small accessories), and capital equipment and machinery parts. Natural and synthetic fibers are produced from raw materials such as cotton, wool, silk, flax and chemicals. There are also categories of non-essential inputs such as packaging and broad services applicable to a range of industries, such as transportation, logistics, catering, information technology (IT), construction, cleaning, security, human resources, and training.

Cotton is the most significant natural fiber. In developed countries, the production model is typically medium- to large-scale commercial operations with mechanized harvesting, while in developing countries, production tends to be dominated by small-scale producers who harvest the cotton by hand (Cotton Council International, 2014). With its potential to employ large numbers of lower-skilled workers, governments often provide subsidies to support production in many locations. Worldwide, the leading producers are India, China, the United States, Pakistan, Brazil, Turkey and Australia (USDA FAS, 2018). Major exporters include the US, Australia, Brazil and India, while Bangladesh, Vietnam, China and Turkey top the leading importers. The US, Egypt, India and China are the leading sources of higher-quality cotton (Fernandez-Stark et al., 2016). Table A-1 presents the countries that figure most prominent in global production and export.

Source: Frederick, 2016.

Apparel Production: Apparel production includes cutting, sewing and finishing activities. Manufacturers cut and sew woven or knitted fabric or knit apparel directly from high quality yarn.[7] A large portion of the work is labor-intensive, has low fixed costs and requires simple technology. These characteristics have encouraged the move to low-cost locations, mainly in developing countries. In contrast, textile (yarn and fabric) production is more capital and scale intensive,

[7] A common description of businesses engaged in basic cutting, sewing and finishing activities is Cut, Make & Trim (CMT). Full package refers to firms that perform CMT services and also perform sourcing, logistics and other services. See Governance section for additional details.

demanding higher worker skills; as a result, it has partly remained in developed countries or shifted towards middle-income nations.

Box 3: Automation in Apparel GVC

Although recent advances in automation in the apparel industry have prompted speculation the sector could be vulnerable to disruptive change, the nuances of the apparel industry highlight the complexity of the issue.[8] Automating a production process typically occurs because: (1) it is expensive to hire people to do the job; (2) the product has the potential to be contaminated if handled; or (3) the task is repetitive with minimal changes. Apparel, particularly the sewing segment, does not meet these requirements. There has historically been a pool of low-cost labor from a global perspective, contamination is not an issue, and whereas the task is repetitive, it changes often. Apparel fabrics are also soft and flexible, making it difficult for a robot to handle. For these reasons, Crystal Group—one of the largest clothing manufacturers in the world—has expanded production in Bangladesh and Vietnam, with its CEO specifically stating that robots could not compete with humans.

Source: Frederick, 2015; Bain, 2018.

Distribution: The next stage of the value chain captures the business-to-business relationships that move garments to customers. The distribution segment of the value chain can also be considered post-production logistics or apparel sourcing. The key factors apparel buyers consider when selecting a supplier are similar to the factors that apparel producers themselves evaluate with textile inputs: cost, quality, lead time and reliability as well as social and environmental compliance.

The distribution segment of the chain is best evaluated based on product categories. Products can be divided into three primary ways: gender, product or materials. The main features of each are as follows:

- **Gender:** Womenswear makes up the largest share of the global apparel market as measured by Retail Selling Price (RSP). It is followed by menswear (roughly 30% share), childrenswear (11%), apparel accessories (5%) and hosiery (4%). Men's apparel is generally considered to me more "commodity-like" and basic in terms of construction and sizing, with styles changing less dramatically. Women's apparel is more fashion-oriented, with frequent style changes. Product's often have more detail and design features than menswear. As such, finding womenswear suppliers can be more difficult because manufacturers need to have the logistics capabilities to produce and supply products with shorter lead times and production and design-related skills and machinery required to make the more detailed styles.

[8] The first robotic, automated production line could be operational by the end of 2018 with larger-scale implementation further ahead (Stacey & Nicolaou, 2017). Softwear Automation produces a clothes-making robot called "Sewbot," The system was being installed in a facility in the United States with the expectation of producing 1.2 million T-shirts per year at a price that is competitive with manufacturing and shipping the same material in low-wage locations (Peters, 2017). Such developments led one report concluded that the broader textiles, clothing and footwear industry faced higher automation risks than workers in automotive and auto parts; electronics and electrical parts; textile, clothing and footwear; business process outsourcing and retail value chain (Chang et al., 2016). ASEAN nations could be in particularly precarious situation, according to the analysis, with as many 88 percent of Cambodian, 86% of Vietnamese and 64% of Indonesian wage workers facing possible replacement.

- **Product:** The global apparel industry can be divided into 14 product subsectors: trousers; sweaters and sweatshirts; knit shirts; coats, woven shirts; dresses and shirts; underwear and pajamas; suits and formal wear; miscellaneous apparel; accessories; athletic apparel; hosiery & socks; bras; and baby apparel. Trousers have historically been the largest export category, with a 20% share of the world market in 2016. Sweaters and sweatshirts were the second largest at 13%. Dresses/skirts, coats and miscellaneous apparel are all important growth areas for global markets, with growth rates of more than 5% in the period from 2006 to 2016. Table 1 below provides a list of the export values of each product category.

Table 1: World Apparel Exports by Product Categories, 2006-16

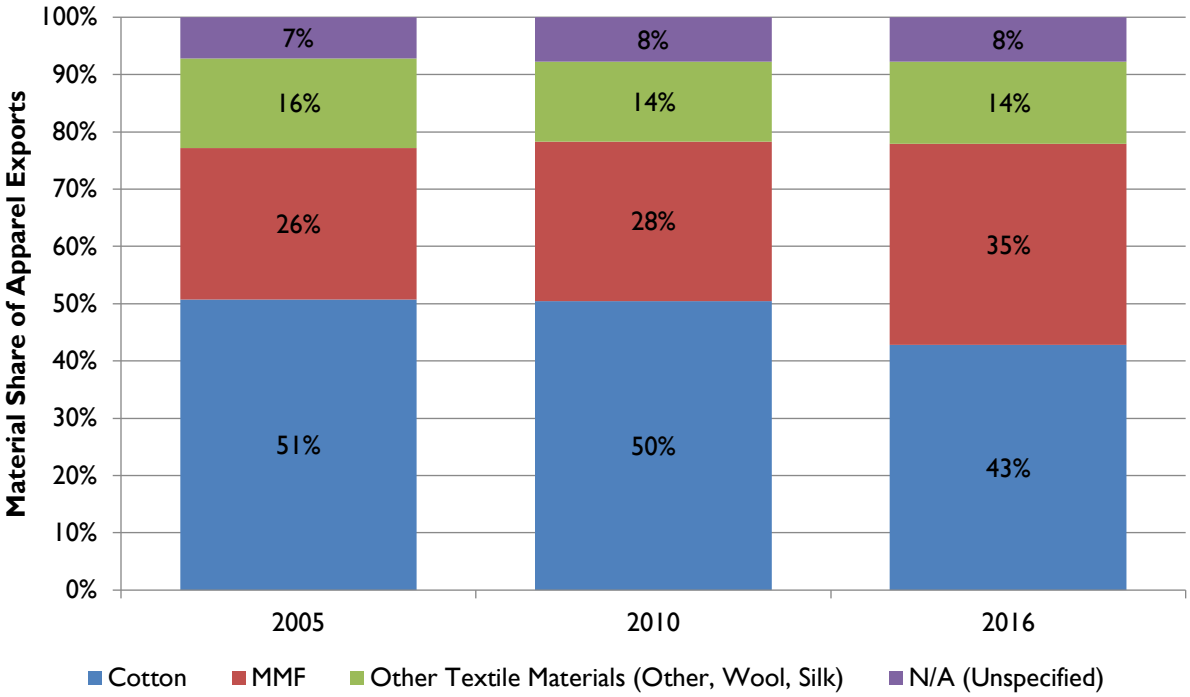
Product Category	Value ($, Billions)				World Share (%)	CAGR (%)
	2006	2010	2014	2016	2016	2006-16
Total	**292**	**327**	**402**	**377**		**2.6**
Trousers	60	62	78	76	20%	2.5
Sweaters/Sweatshirts	44	47	55	50	13%	1.2
Knit Shirts	39	44	52	49	13%	2.3
Coats	21	26	37	35	9%	5.1
Woven Shirts	22	24	31	29	8%	2.7
Dresses/Skirts	16	23	29	27	7%	5.2
Underwear/Pajamas	17	18	21	20	5%	1.5
Suits/Formalwear	20	17	20	17	5%	-1.3
Misc. Apparel	9	12	16	15	4%	5.4
Athletic	10	11	14	14	4%	3.2
Accessories	10	13	15	13	4%	3.2
Bras	8	9	11	11	3%	2.9
Hosiery/Socks	7	10	12	11	3%	4.1
Baby	8	9	10	10	3%	2.1
Trousers, Sweaters, Knit Shirts	**142**	**153**	**185**	**174**	**46%**	**2.1**
Coats and Dresses/Skirts	**38**	**50**	**66**	**62**	**16%**	**5.1**

Source: (UN Comtrade, 2002-2016b, 2002-2016c). **Note:** The product categories are ordered by value of international trade. Blue shades equal CAGRs > 3%. Red shades equal CAGRs < 1%.

- **Materials:** The two main materials are cotton and man-made fibers (MMF), with the two categories representing 43% and 35% of world apparel exports in 2016. Wool and silk comprise relatively small market shares (5% and 1%, respectively), while the remaining 17% are from other textile materials or the material is not disclosed (UN Comtrade, 2002-2016c). It is worth noting that MMF has increased its share dramatically in recent years at the expense of cotton—in 2005, cotton materials accounted for 51% of worldwide apparel exports compared with 26% for MMF. Figure 3 below depicts the share of global apparel exports by material in selected years from 2005 to 2016 and provides a sense of MMF's growing market share.

  Cotton's shrinking share of material exports is partially attributable to the unit value associated with each of the main categories. Apparel made from silk and wool have the highest average unit values (US$25 and US$15 per item in 2015). However, of the main materials, apparel made from MMF has higher unit values compared to cotton: US$7.3 per unit compared with US$5.2 in 2015.

Figure 3: Share of Apparel Exports by Material, 2005-2016



Source: UN Comtrade, 2002-2016b.

Marketing & Sales: This segment of the chain includes all activities associated with pricing, distributing and selling the physical apparel product, including marketing and branding. The companies that participate in these activities are often the lead firms in the chain. Once these companies receive the apparel product, they do not frequently make physical alternations. Apparel is marketed and sold to consumers (via retail channels), institutions or the government. This stage of the chain accounts for the highest value addition in the chain.

2.2. Global Trade in the Apparel GVC

Global trade in the apparel industry has been characterized by Chinese supply and European and American demand for some time. In recent years, there has been some indication the overall dynamics are evolving; with labor costs in China increasing and the country focused on higher value industries such as electronics, locations such as Cambodia, Vietnam and Bangladesh have increased their export presence. The following section analyzes global supply and demand. Unless otherwise stated, the source for all trade data is the UN Comtrade database.

2.2.1. Global Supply

China is a behemoth in the apparel GVC. The country has accounted for at least 30% of global exports since 2006 and has regularly outpaced the world's second leading apparel exporter (the EU-15) by at least 100% during that span. Its export portfolio is diverse with capabilities spread throughout product categories, material, construction type and gender. In terms of world market share, China accounts for the highest percentage of bras (51%), coats (49%), accessories (46%),

miscellaneous apparel (45%), and baby apparel (44%). Its top two exports by product category are sweaters/sweatshirts and trousers, although that has shifted in more recent years to categories with overall higher unit values such as coats and dresses or skirts. Table 2 lists the world's top apparel exporters by year and value.[9]

Table 2: Top 10 Apparel Exporters by Year and Value, 2008-16

Partner	Value (US$, billions)					World Share				
	2008	2010	2012	2014	2016	2008	2010	2012	2014	2016
TOTAL	**343**	**330**	**365**	**402**	**377**					
China	134	142	149	141	130	39%	43%	41%	38%	34%
EU-15	60	52	54	63	58	18%	16%	15%	16%	15%
Bangladesh	14	17	23	29	33	4%	5%	6%	7%	9%
Vietnam	10	11	16	22	25	3%	3%	4%	5%	7%
Turkey	16	15	17	19	17	5%	5%	5%	5%	5%
India	11	13	13	16	15	4%	4%	4%	4%	4%
Cambodia	—	4	6	9	10	—	1%	2%	2%	3%
Indonesia	8	8	10	10	10	2%	2%	3%	3%	3%
Pakistan	—	4	—	5	5	—	1%	—	1%	2%
Sri Lanka	—	4	5	5	5	—	1%	1%	1%	1%
Morocco	5	—	—	—	—	1%	—	—	—	—
Mexico	5	4	5	—	—	1%	1%	1%	—	—
Hong Kong	6	—	—	—	—	2%	—	—	—	—
Top 5	**269**	**269**	**296**	**330**	**309**	**78%**	**82%**	**81%**	**82%**	**82%**
Top 10	**236**	**239**	**258**	**284**	**263**	**69%**	**72%**	**71%**	**71%**	**70%**

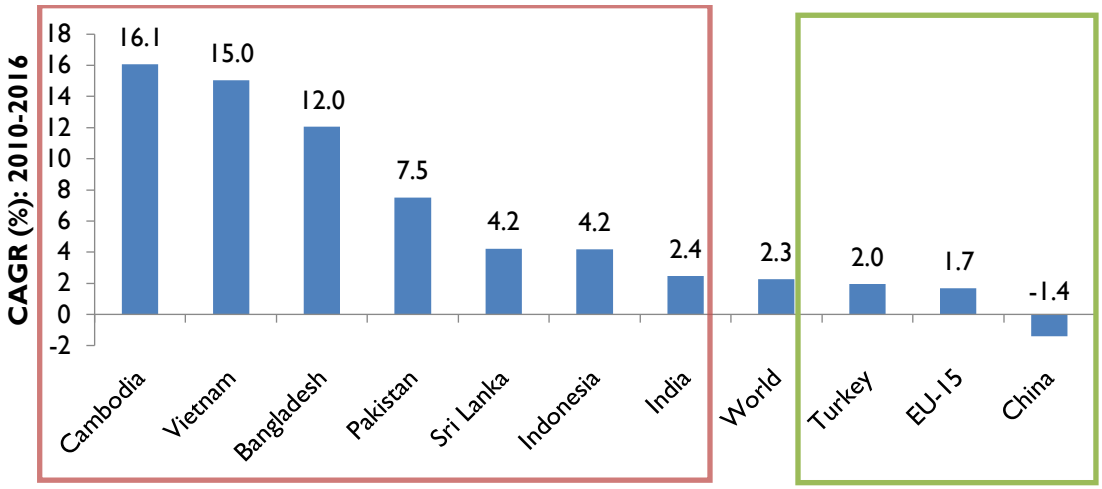
Source: UN Comtrade (2002-2016b). **Note:** HS02, 61+62 codes. Exports are based on import data. (—) indicates a country was not in Top 10 in given year. Pakistan, as an example, was not in top 10 in 2008 and 2012.

There are indications China's apparel industry might be facing headwinds. Growth has largely stagnated in the value of the country's apparel exports—it exported US$142 billion worth in 2008 for a 43% share of the global market; in 2016, the total was US$130 billion for a 34% share. Moreover, the country's increasing labor costs and policy focus on higher value-added industries has led lead firms to evaluate other countries. Since the global economic crisis, apparel buyers stated their intent to decrease the share of apparel sourced from China as a response to increasing costs, (Frederick, 2016; McKinsey & Company, 2013).

Countries in South and Southeast Asia have proven the largest growth markets as China enters a period of transition. Cambodia (16%), Vietnam (15%), Bangladesh (12%) and Pakistan (7.5%) posted the highest Compounded Annual Growth Rates (CAGRs) for the value of their exports in the six-year period from 2010 to 2016 (see Figure 4 below). As a result of this and more recent expansion, Cambodia was the world's seventh largest exporter by value in 2016, Vietnam was the fourth, Bangladesh the third and Pakistan the ninth.

[9] The highest unit value cannot necessarily be interpreted as having the highest value addition or the highest margins. Calculations on individual margins vary significantly by company and are complicated by individual firm strategies—some companies will take a loss on certain products in order to maintain relationships with buyers. Multi-country, firm-level datasets would be required to draw conclusions about most profitable products.

Figure 4: Top Global Apparel Exporters by CAGR, 2010-2016



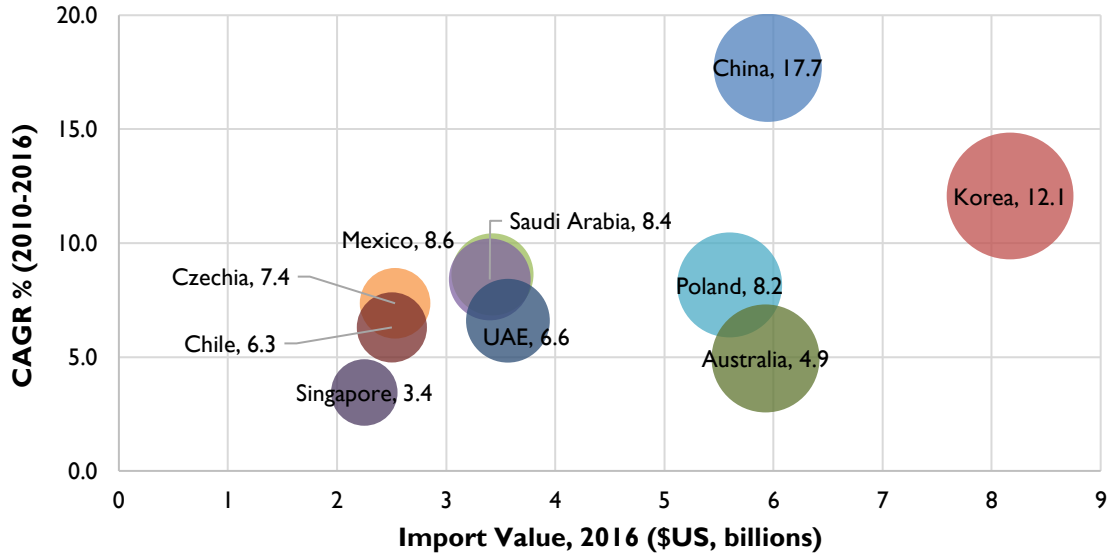
Source: UN Comtrade (2002-2016b).

2.2.2. Global Demand

Geographic end markets for apparel can be analyzed using both retail and trade data. The retail data supplements trade date because several growing apparel markets are omitted in trade data because this excludes non-traded apparel—apparel produced domestically for the domestic market—and countries with limited trade data availability. In 2014, the value of the global apparel retail market was approximately US$1.38 trillion and the total value of apparel imports was US$402 billion (Frederick, 2018a). Highlighting some of the discrepancies between trade and retail data, Asia-Pacific was the largest retail market in 2014, accounting for 34% of sales for a value of US$474 billion. By contrast, it generated less than 20% of the global import market.

With respect to import data, the largest and the fastest growing import markets include South Korea, UAE, Australia, China, Poland, Saudi Arabia and Mexico (UN Comtrade, 2002-2016b). Figure 5 below presents the fastest growing apparel import markets, while Table A-2 in the Appendix lists the largest global importers in the period from 2008 to 2016. There is a high degree of consistency each year, with the EU-15, US and Japan consistently ranking as the top three markets followed by Hong Kong and Canada. Although the US and the EU-15 remain the largest importers, emerging and regional markets are gaining in importance and represent equally important opportunities for apparel manufacturers. Diversifying end markets not only increases growth prospects—especially since mature markets such as (the United States and the EU-15) are experiencing a slowdown in demand—but it also reduces risks and dependency on certain markets and buyers (Frederick, 2016).

Figure 5: Fastest Growing Apparel Import Markets, 2010-2016



Source: UN Comtrade (2002-2016b). Apparel is represented by HS02 (61+62); countries shown are non-top five importers with had imports greater than US$2 billion in 2016 and a change in export value greater than the world average between 2010 and 2016.

2.3. Lead Firms and Governance

The categories of firms that participate in the apparel GVC can be roughly distinguished based on the activities they perform. The four primary distinctions were first introduced in the apparel GVC diagram (Figure 1). They are as follows:

1. **Cut, Make & Trim (CMT):** A marginal supplier that typically generates low-cost outputs in high volume. The manufacturer only cuts the fabric, sews it together and adds final trim (zippers, buttons) and is not responsible for sourcing fabrics.

2. **Original Equipment Manufacturer (OEM):**[10] The apparel manufacturer is responsible for all production activities, including the CMT activities as well as finishing. The firm must have upstream logistics capabilities, including procuring (sourcing and financing) the raw materials, piece goods, and trim needed for production.

3. **Original Design Manufacturer (ODM):** The apparel supplier is involved in the design and/or product development process, including the approval of samples and the selection, purchase and production of required materials. The apparel supplier is also responsible for coordinating the production and logistics activities.

4. **Original Brand Manufacturer (OBM):** The apparel supplier is responsible for branding and marketing of the final products.

[10] Full package or Free on board (FOB), which is an international trade term, are also used to describe this category in which the manufacturer is responsible for financing and coordinating shipment of the product to the buyer.

Lead firms are set apart because of their purchasing power and control over the activities that generate the most profitable returns. The share of the retail selling price attributable to manufacturing an apparel item is typically less than 30%, of which raw material costs make up the largest share. Costs associated with intangible activities including product development, design, marketing, branding and management contribute the other 60-75% (Hester, 2013; Newbury, 2013). The lead firm sets the price to develop a final product and thus determines the final product margin, the difference between the cost of manufacturing, and the price it will pay to purchase or manufacture the product. These activities primarily take place at the headquarters of global retailers and brands in the United States and Western Europe.[11]

There are two key sets of business-to-business relationships in the apparel value chain. The first is the division between lead firms and the first-tier supplier (often OEMs). The second is between the first-tier supplier and branch locations or subcontractors and input suppliers (CMTs in the above categories). These relationships are important for production-related decisions. First-tier suppliers are responsible for coordinating the supply chain and thus make decisions on which factories are included in the chain. Lead firms may or may not have a relationship with these factories or suppliers farther upstream.

There are recent trends associated with governance and power in the apparel GVC that are worth accentuating. These include the following:

1. **There has been some consolidation as buyers are increasingly purchasing from larger, more capable first-tier suppliers (OEMs and ODMs).** Lead firms prefer fewer suppliers because identifying and maintaining relationships with many vendors adds unnecessary time and transaction costs for buyers whose core competencies are in the higher-value activities related to marketing and branding. With these companies increasingly focused on sourcing from larger and more capable vendors, the smaller firms focused on assembly face challenges in forming direct relationships with global buyers. It should be noted that this does not necessarily mean there are fewer apparel manufacturers overall—smaller firms still play a role as subcontractors to first-tier suppliers and as producers for domestic markets. However, there are clear indications of supply chain consolidation, which forces companies in emerging markets that are attempting to enter and upgrade within the chain to consider variables that are outlined below.

2. **Firm-specific factors beyond price are critical in the supplier selection process, with two characteristics gaining in importance.** Traditional metrics such as price and quality are baseline considerations that all suppliers must demonstrate to be competitive. There are also a range of secondary characteristics that buyers use to evaluate potential suppliers. Two specific factors have increased in importance in recent years: **full-package capabilities** and **lead time.**

   Full-package capability describes non-manufacturing capabilities or value-adding services. With lead firms concentrating on core competencies and reducing the complexities of their supply chains, the expectation is that suppliers can handle more responsibilities. Buyer

[11] While lead firms are most often the OBMs, there are four different types: 1) mixed retailers/mass merchants; 2) specialty retailers; 3) brand marketers; and 4) brand manufacturers. These lead firms are responsible for selling different types of brands, including national brands, private labels, exclusive labels, and licensed brands (Frederick, 2015). Table A-3 in the Appendix provides further descriptions and examples of each category of lead firm.

surveys show the most important services include input or material sourcing and financing and product development (Frederick, 2016). These require more diverse skill sets, including customer service, technology training and supply chain management (Frederick, 2015).

The emphasis on lead time is related to the shift to lean retailing and just-in-time delivery, where buyers reduce the inventory risks associated with supplying apparel to fast-changing, volatile markets by replenishing items on their shelves in very short cycles and minimizing inventories (Frederick, 2015). Buyers are reconfiguring their sourcing strategies by working with fewer vendors and forming more strategic relationships, sourcing products closer to home and adapting new software and planning technology to streamline the process.

3. **Although firm-specific considerations are critical, country and industry characteristics also play significant role in chain relationships.** Industry and country-level variables are generally of less importance compared to firm-specific factors in the supplier selection process. There are, however, areas where the local environment is a prominent consideration. At an industry level, while lead time and full-package capability have become important criteria for suppliers, linkages with local or regional textile suppliers is critical. Fabric production needs to be competitive in terms of price, quality, delivery time and variety. In this context, the possibility to import inputs duty-free is crucial given the large variety of fabrics (Frederick, 2016).

   There are also country-level considerations that can impinge growth in the apparel GVC. The most important supporting features are transportation and power infrastructure, political stability, security environment and overall costs associated with trade. Historical relationships and established well-known capabilities within a country or region are important factors for chain entry or upgrading; concerns over any of the supporting features can be disqualifying, especially for markets that have very limited functional capabilities (Staritz & Frederick, 2014). Pakistan is an example of a country where political turbulence has damaged the apparel industry. Because of concerns over security and political stability, executives from foreign companies rarely visit the country, making it difficult for exporters to access new markets (Shaikh, 2015).

2.4. Human Capital

The fact apparel production is labor intensive ensures the industry supports a high number of workers. Worldwide, estimates suggest that close to 14 million people work in the sector, placing the industry among the global leaders in terms of overall employment (UNIDO, 1963-2014). If textiles and apparel are combined, the industry is easily one of the top employment generators, accounting for 11-13% of global manufacturing employment, with combined employment of at least 26.7 million in the formal sector.[12]

Most workers are concentrated in production-related segments; they are often female and earn minimum wages. There is also a strong youth component to the industry, especially at the assembly stage. In 2012, the average age of the textile workers was about 26 years in Cambodia and 30 years

[12] It should be stressed there are inconsistencies in estimates on the workforce of the global industry owing to what activities and products are included. Additionally, including informal workers in developing countries would dramatically increase the size of the global workforce. Some have gone as high as 75 million (Stotz & Kane, 2015).

in Vietnam, while that of non-textile and apparel workers was 35 years and 38.5 years, respectively (Kotikula et al., 2015). While the required formal education and skill level is low at the assembly stage, it rises rapidly as countries upgrade into higher-value stages; workers with more advanced skills are needed to support new service functions, such as logistics, finance, design and marketing.

Table 3 below provides an overview of the most important job profiles in the apparel GVC. It is organized by value chain segment.

Table 3: Job Profiles in the Apparel GVC

Position	Job Description	Typical Education	Skills/ Experience	Skill Level
Design				
Assistant Fashion Designer	Training in aesthetics of product development, some market and consumer knowledge, and technical skills required to translate ideas into samples	BA/BS, Apparel Design	Experience; Computer Skills	
Senior Designer	Creative talent within the industry that can develop new design lines for production.	BS/MS, Apparel Design	Experience; Computer Skills	
Product Development	Product life cycle management (PLM)	BS/MS, Business or Apparel		
Apparel Production				
Fabric Spreading/ Cutting	Layering/laying fabric on cutting table: Ensure materials are straight, smooth and tension free. Inspect for faults	None	—	
	Cut fabric by hand.	High school	Technical training	
	Pieces are cut via a computer-controlled machine.	Technical education		
Sewing Machine Operators	Operate sewing machines to join, reinforce, decorate, or perform related sewing operations	No formal education required	Speed and accuracy skills; OTJ experience	
Hand Sewers/ Embroidery	Sew, join, reinforce, or finish, usually with needle and thread	No formal education required	Required experience	
Finishing	Activities may involve final sewing/attaching buttons/zippers/fusing, dyeing, ironing/pressing, etc.	None		
Line Leaders	Supervisory roles; assure work flows along the line; workers often start as operators and progress	HS diploma/ technical education	Management skills	
Supervisors	Oversee pace of the work and ensure stoppages are minimized, monitor production levels, train, etc.	Technical education/ BS	Communication/ Planning	
Export Manager	Plans and coordinates all activities related to international shipment of goods	BS, Business	Communication Logistics	
Marketing & Sales				
Marketing Analyst	Responsible for market research, marketing/advertising, networking and positioning brands in the market.	BS/MS, Business	Marketing skills and experience	
Industrial Engineers	Arrange shop floor; lean production, Six Sigma	BS, Engineering		
Office and Administrative	Book keeping, human resources, payroll, accounting, customer service; ERP.	BS	Computer skills	
Corporate Management	Responsible for financial management, supply chain optimization, quality control, strategy and business development.	BS/MS, Business	Experience; General business	

Skill Level	Low	Low-Medium	Medium	Medium – High	High
					
	No formal education; experience	Literacy and numeracy skills	Technical education/certification	Technical education /undergraduate degree	University degree and higher

Source: Adapted from Fernandez-Stark et al., 2011.

2.5. Standards

At the same time that lead firms influence much of the contours and shape of the apparel GVC, private standards administered by outside parties play an important governance role in monitoring workplace conditions of apparel factories. These multi-stakeholder initiatives are composed of lead firms, NGOs, unions, government agencies and in some cases large MNC suppliers. Table A-4 in the Appendix below lists majors private labor standards associated with the global industry; the largest and most prominent include the Fair Labor Association Workplace, the Fair Wear Foundation, ILO/IFC Better Work Programs, the Clean Clothes Campaign (CCC) and the Worldwide Responsible Accredited Production (WRAP).

These initiatives have both their strengths and weaknesses. A significant one is that they primarily target the supply chains of the largest global lead firms, which only account for a relatively small share of the global apparel manufacturing. An additional problem is the sheer number of initiatives—Table A-4 in the Appendix only includes a sample of the most prominent. Having multiple programs with similar requirements creates confusion and complexity and results in higher compliance costs, which ultimately increases fragmentation rather than promoting harmonization.

While the standards often succeed at identifying compliance issues in factories, they do not necessarily represent a means to address power asymmetry in the chain. The actual requirements to comply with the codes and standards are often low; in many cases, they do not address one of the primary concerns of workers regarding "living" wages. Furthermore, the definition of "living wages" is not universal nor is it legally binding. Estimates have been created as part of the Asian Floor Wage, but they are not part of an internationally agreed upon convention or standard. Some mention living wages, but due to inability to clearly define a living wage, they provide no means of enforcement.

There are also enforcement issues with respect to other issues such as minimum wages and child labor. Buyers all mandate that national minimum wages are paid in suppliers' factories, but labor unions contest that these wages fall far below acceptable levels. Factory owners can also circumvent minimum wages by hiring employees under different titles (such as an apprentice) or as temporary employees that are not mandated under national minimum wage policies.

As far as child labor, most third-party standards have adopted ILO conventions prohibiting children younger than 15 from working as part of their programs. While it is not a prominent issue at first-tier factories and suppliers, it is observed in the informal sector in developing countries. Textiles in countries such as India has been highlighted as a sector and location where the issue is rampant (Theuws & Overeem, 2014).

3. Pakistan and the Apparel Global Value Chain

Key Points

- Pakistan's strong recent growth rate in apparel exports (6.3% from 2006-16) is somewhat deceptive. Its position in the GVC is concentrated in a small handful of products. Trousers is the largest export category, accounting for 50% of the value of the country's exports in 2016. The product's recent growth has been robust (11.6%). But expansion in other categories has been subdued.
- Pakistan's cotton base and integrated supply chain offer both strengths and weaknesses. It provides benefits with doubling down on existing products, such as trousers and denim. But it is a liability for product diversification, which is an important consideration as global buyers move toward sourcing from vendors and countries with broader product availability to reduce complexity and costs.
- In order to move forward, the industry should prioritize securing cost-competitive access to critical inputs (either by supporting cotton production and/or by simplifying tariff regime), attracting higher levels of FDI and enhancing the institutional environment.

Pakistan's foothold in the apparel GVC can trace its roots to the country's history of cotton production. Long one of the world's top-five sources for the raw material, a small group of local companies have taken advantage of the access to selected inputs to move from textiles to apparel and integrate into the supply chains of leading firms. With production clusters in Karachi, Lahore and Faisalabad, Pakistan was the eighth largest apparel exporter in 2016, accounting for close to 2% of worldwide share with heavy representation in certain product categories.

The sector's importance to Pakistan's overall economy can be detected through multiple metrics. The combined Textiles & Apparel (T&A) industries generated a minimum of US$10.3 billion in exports each year between 2009 and 2016 (see Table 4).[13] Throughout that period, the industry accounted for between 53-61% of the value of the country's total exports, with the 2016-17 financial year representing a recent historical apex (61%) (GoP MoF, 2018). If one focuses more narrowly on apparel, Pakistan had US$5.7 billion in exports in 2016. Annualized growth was 6.3% in the period from 2006 to 2016 and 2.3% in the period from 2011 to 2016. With US$2.9 billion in value, the country's largest export product category is in trousers, where it ranks as the world's sixth-leading supplier. All told, the T&A sectors directly employed roughly 2.5 million people.

[13] While this report concentrates on the apparel GVC, there are times when segregating the apparel from textiles is not possible. In instances where data or other sources aggregate, this report uses the term "T&A industry."

Table 4: Pakistan's Textile and Apparel Exports, 2009-16

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
T&A exports	10,338	13,887	12,470	13,156	13,856	13,589	12,553	12,531
Cotton & cotton textiles	9,755	13,147	11,803	12,628	13,348	13,139	12,168	12,248
Synthetic	446	608	546	406	383	331	288	204
Wool & woolen	137	132	121	122	125	119	98	79
T&A share of total exports (%)	54	56	53	54	55	57	60	61

Source: (GoP MoF, 2018). Source's source: Ministry of Textiles. **Note:** US$ millions.

Despite the significant economic activity, the industry still trails competitors in upgrading metrics. It has been hobbled by many features, from limited product diversity to onerous tariff regimes to infrastructure constraints to regulatory shortcomings. Although the competitive undercurrents that have shaped the global industry since the expiration of the MFA have influenced Pakistan, they have not been felt in the same way as in countries such as the Vietnam, Sri Lanka and Cambodia, where the growth of the sector has often been driven by foreign investment. The characteristics associated with the industry that are worth accentuating include the following:

- **Recent growth has been concentrated narrowly in certain product categories.** The annualized growth rate of Pakistan's apparel exports is somewhat deceptive, suggesting a broad-based increase that is, in fact, far more concentrated. Driven by CAGRs of 11.6% from 2016-16, trousers are Pakistan's largest export product, accounting for 50% of the value of all apparel exports in 2016. That figure represents a 19% increase in share since 2006 (see Table 5). There are certainly other categories where exports are expanding, but they generally are in products where Pakistan has only a negligible share of global trade. The country's second and third largest categories (sweaters/sweatshirts and knit shirts) have largely been stagnant. Trousers are far more promising—Pakistan is the world's sixth leading exporter and has the third best unit value in the global top 10.

Table 5: Pakistan's Apparel Exports by Product Category, 2006-16

Product Category	Export Value (US$, billions)				Share of Pakistan's Total Apparel Exports				CAGR (%)
	2006	2010	2014	2016	2006	2010	2014	2016	2006-16
Total	**3.1**	**3.7**	**5.4**	**5.7**	—	—	—	—	**6.3**
Trousers	1.0	1.4	2.5	2.9	31%	39%	46%	50%	11.6
Sweaters/Sweatshirts	0.5	0.4	0.6	0.6	16%	11%	11%	11%	2.4
Knit Shirts	0.6	0.6	0.6	0.6	19%	17%	11%	10%	-0.3
Hosiery & Socks	0.2	0.3	0.4	0.4	7%	8%	7%	6%	5.4
Accessories	0.2	0.3	0.3	0.3	5%	7%	6%	5%	6.5
Coats	0.2	0.2	0.2	0.2	5%	5%	4%	4%	4.3
Underwear	0.2	0.2	0.2	0.2	6%	5%	4%	3%	-0.2
Athletic	0.1	0.1	0.2	0.2	3%	4%	4%	3%	5.0
Suits/Formalwear	0.1	0.1	0.1	0.1	3%	2%	2%	3%	6.3
Miscellaneous	0.0	0.0	0.1	0.1	1%	1%	1%	1%	10.5
Baby	0.0	0.0	0.1	0.1	1%	1%	1%	1%	9.8
Dresses/Skirts	0.0	0.1	0.0	0.0	1%	1%	1%	1%	0.0
Woven Shirts	0.0	0.0	0.1	0.0	2%	1%	1%	1%	-0.9
Bras	0.0	0.0	0.0	0.0	0%	0%	0%	0%	18.1
Top Three	**2.0**	**2.4**	**3.7**	**4.1**	**66%**	**66%**	**68%**	**71%**	**7.1**

Source: UN Comtrade (2002-2016c). Note: Blue shades equal CAGRs > 5%. Red shades equal CAGRs < 1%.

- **The EU-15 has ascended to the position as Pakistan's top export market.** As recently as 2008, the US was Pakistan's largest export market; in that year, 45% of total export value of Pakistan's apparel exports went there compared with 42% to the EU-15. The situation has shifted in recent years. In 2016, the EU-15 received 54% of the value of Pakistan's apparel exports while the US accounted for 24%. The importance of the European market is likely to continue with Europe granting Pakistan preferential access as a trading partner as part of the GSP+ program.

- **The apparel sector has undergone only limited economic upgrading, with 8-10 large companies generating close to one-third of the export revenue.** Most of the companies active in Pakistan's sector moved into apparel only recently after beginning as textile companies. The delayed nature of this integration has resulted in relatively modest product diversity and limited economic upgrading, with the increase in trouser exports and unit values being a prominent exception. By and large, Pakistan's outputs are predominantly men's wear (knit and woven) that is made from cotton fabrics. The value chain is as much as a local one as a global one, with companies active in one geographic area, possessing little in the way of international operations and largely serving the domestic market. There are few OBMs active in the market and only scattered examples of ODMs; most companies are OEMs or second-tier CMTs.

  There are, of course, exceptions. Eight companies had more than US$100 million in exports during the 2016/17 financial year, accounting for 31% of the value of Pakistan's total apparel exports. Nishat Mills, Sapphire Group and US Apparel & Denim are among the country's most prominent exporters; almost all these firms are integrated while some produce both apparel and home textiles. Most focus almost exclusively on the export market. At the other end of the spectrum, close to 90% of the roughly 5,000 businesses that export apparel products earn less than US$1 million annually from international trade.

- **FDI into the T&A sectors has been minimal.** Like the larger economy, Foreign Direct Investment (FDI) has played a minimal role in Pakistan's apparel sector. The textile sector has been more attractive, receiving moderate amounts of inflows in the early 2000s, although that interest has waned in more recent years. Overall, the total size of FDI in the apparel sector has been estimated to be less than 2% (Frederick, 2016). Table 6 below charts FDI inflow into the T&A industries from 2007-17. The apex came in 2011-12, when the sector received 3.6% of all the country's investments.[14]

Table 6: FDI Inflows to Pakistani Textile and Apparel Industry, 2007-16

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Textile & Apparel (US$, million)	30.1	36.9	27.8	25.3	29.8	10	-0.2	43.9	20	15.5
Total FDI (US$, million)	5,409	3,719	2,150	1,634	820	1,456	1,698	987	2,305	2,746
T&A share of total	**0.6%**	**1.0%**	**1.3%**	**1.5%**	**3.6%**	**0.7%**	**0%**	**4.4%**	**0.9%**	**0.6%**

Source: Pakistan BOI (2018). **Note:** Each year represents financial years, beginning in July and ending in June of the following year.

- **Although female participation has increased, labor in the sector still suffers from male overrepresentation. There are also shortages of trained workers**. Both the T&A industries in Pakistan have traditionally been characterized by limited social upgrading. The textile sector employs as much as 40% of the industrial labor force, yet there is also a significant shortage of trained labor, forcing companies to invest resources on internal training (CNV Internationaal, 2017; GoP MoF, 2018). [15] A central characteristic of the workforce is that it has traditionally been skewed heavily toward men, with cultural stereotypes against factory work, the lack of public transportation and insufficient child care all playing key roles in the low female participation rates (Huynh, 2017; Munir et al., 2018). Although male workers still hold approximately two-thirds of all T&A jobs (Huynh, 2017), there has been some evolution in recent years. Significantly, the average annual growth for women in the industry has been 10% over the last four years compared with 4.3% for men.

The following portion of the report analyzes Pakistan's participation in the apparel GVC and examines how it is attempting to spur growth. Its goal is to provide a foundation for the potential upgrading trajectories and recommendations that follow in subsequent sections. Its organization is as follows: first, the country's history and development in the apparel industry and its current participation in the GVC is examined before the organization of the industry is outlined as well as key firms and important institutions. After assessing upgrading steps that have been taken by stakeholders, there is then discussion of the country's human capital before the section concludes with advantages and constraints that will shape future participation in the apparel GVC.

Qualitative and quantitative data presented in this section is based on field research conducted in Pakistan in September of 2018. Duke GVCC spoke with 25 stakeholders active in the apparel GVC

[14] The government has made attempts to attract more investments to Pakistan's broader economy. The China-Pakistan Economic Corridor (CPEC) is perhaps the most prominent example. Published details indicate the project is first focused on infrastructure, although the textile sector has also been linked to Chinese interest, with yarns and cloth being a target, although there could be some spillover into apparel (Husain, 2017).

[15] The annual requirement for trained individuals in the textile sector is estimated to be 135,000 people; the annual supply is closer to 10,000 (CNV Internationaal, 2017).

during three separate week-long trips to Islamabad, Faisalabad, Lahore and Karachi. Individual citations are included when supplemental material was used to support the analysis.

3.1. The Development of the Apparel Industry in Pakistan

Pakistan's long history in textile production has provided a foundation for its apparel industry. With Punjab serving as the primary production region, cotton accounts for 14% of the country's total cropped area and is the leading agricultural output during the rainy season from May until December (Batool & Saeed, 2017). In addition to the local supply, the domestic industry received boosts from the government in the 1950s and 1960s through various government initiatives that attempted to increase exports in the sector. Programs such as the Export Bonus Scheme and the creation of the Pakistan Industrial Credit and Investment Corporation as well as the Investment Development Bank of Pakistan all prioritized moving agricultural workers from traditional industries to the textile sector (McCartney, 2014).[16]

As a result of the government-assisted efforts and the country's natural resources, Pakistan's exports were heavily dominated by cotton-based textiles. In 1979, textile exports accounted for US$991 million and included predominately raw cotton, yarn and fabrics; apparel exports, meanwhile, amounted to only US$79 million (Staritz & Frederick, 2012). Throughout the 1980s and 1990s, the growth of the country's textile capabilities provided some support for the expansion in apparel exports, especially those that were dependent on domestically sourced cotton yarns and fabrics. By comparison, apparel products based on MMFs have historically only accounted for a small share of production and export (Khan, 2003).

The reliance on cotton speaks to a central feature of the industry: it has been slow in moving into apparel production. Although there has been an overall increase in the exports for both textiles and apparel, the performance of the two sectors has been uneven, with textiles dominating for many stretches.[17] By and large, Pakistan continues to produce low-value cotton yarn and cloth and intermediate products for the world market.

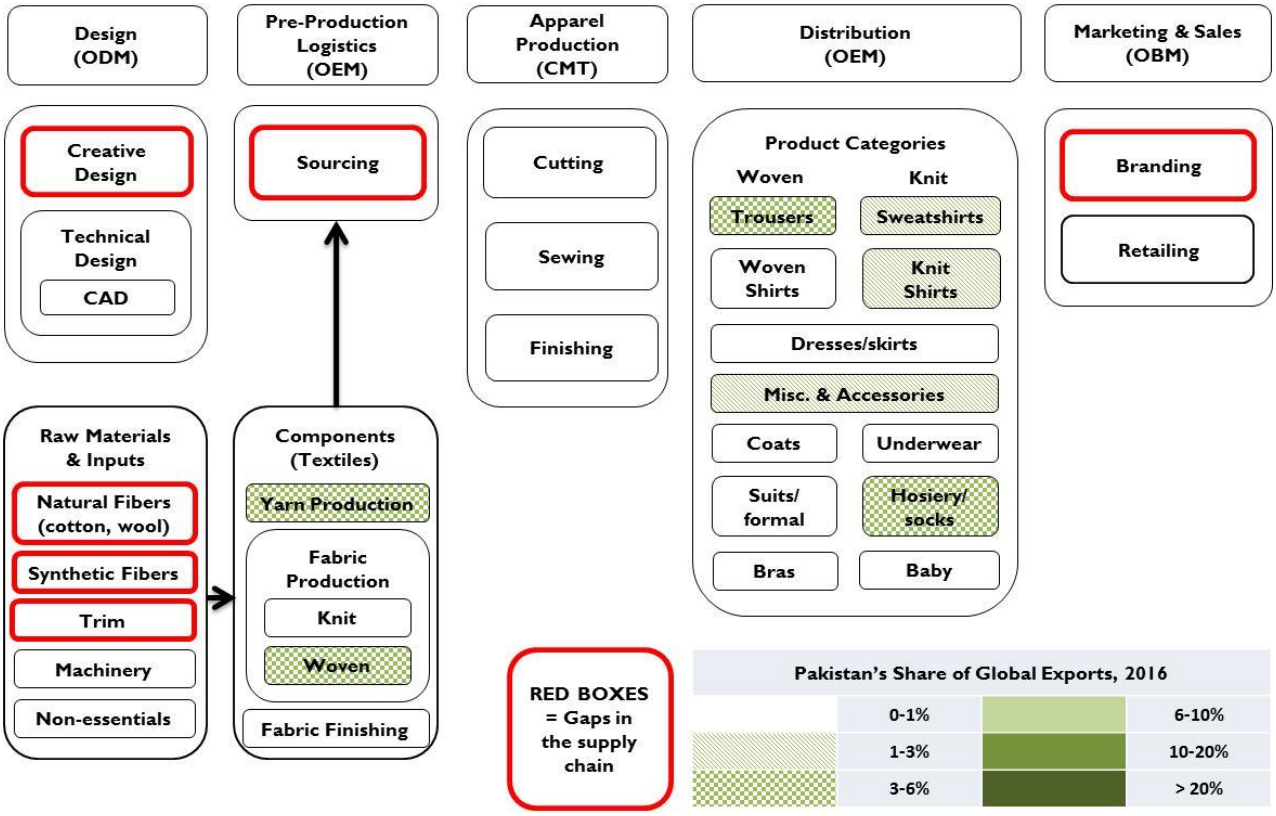
3.2. Pakistan's Current Participation in the Apparel GVC

Pakistan has an established foothold in the apparel GVC, solidifying its place in the last 15 years as an exporter of a handful of outputs. The country uses one of its larger advantages—its expansive base of cotton production—to provide global markets with both intermediate (yarn and fabric) and final products. Led mostly by domestic companies that have not accessed FDI to significant degrees, Pakistan's downstream apparel products are mostly concentrated in three categories: trousers, knit shirts and sweaters/sweatshirts. The US initially served as the country's largest market, although access to European market has increased since the implementation of the GSP+.

[16] The Export Bonus Scheme offered incentives for increasing manufacturing exports; while the development banks offered capital for investments (McCartney, 2014).

[17] Textile exports grew rapidly during the first half of the 1990s but stagnated in the second half and in the early 2000s before surging in 2003 and 2004 in light of increased exports to the EU and the US (Nordas, 2004). Pakistani textile exports increased their share in the world market from 2.8% in 1995 to 3.1% in 2004. Apparel exports grew more steadily from US$530 million in 1991 to US$2.6 billion in 2004, but the country's global share remained between 0.8-1.1% of total exports.

Figure 6: Pakistan in the Apparel GVC



Source: Authors. **Note:** The product categories in the Distribution segment of the value chain are ordered by approximate size of global market. Trousers, shirts (woven & knit) and sweaters/sweatshirts are the apparel products that have the largest worldwide trade.

Figure 6 above offers a visual representation of Pakistan's level of activity in the apparel GVC. Where possible, it has layered in export data available through UN Comtrade.[18] Boxes depicted in green are where the country has the highest shares of the global market; trousers and hosiery/socks are the two final product categories where Pakistan exceeds 3% of exports, although the country does have 3-4% global market share in both yarn and fabric (woven fabric). Sweaters/sweatshirts, knit shirts and accessories are areas where Pakistan holds 1-3% global market share.[19] White boxes signify areas where Pakistan has little to no export activity. Red circles then indicate gaps in the chain. The section that follows analyzes Pakistan's position in the apparel GVC from four perspectives: firms, backward linkages, products and end markets.

3.2.1. Firm Profile

Pakistan's apparel industry is characterized by a small handful of large companies that generate much of the country's exports and then thousands of smaller, local firms that access foreign markets in moderate to minimal volumes. Production is concentrated in or around the major cities of Karachi, Lahore, Faisalabad as well as Multan, Gujranwala, and Sialkot. The entire population of

[18] Shadings and comparisons involving the services performed in the apparel GVC (design, marketing, etc.) are not included because of the lack of available data.

[19] It should be noted that Pakistan accounted for 1.2% market share in athletic apparel products in 2016; however, that category is not included in the GVC diagram because of its small market size.

companies that exported apparel products during the 2016/17 fiscal year included 4,954 businesses (Pakistan Customs Authority, 2018). These firms generated US$4.7 billion in export revenue under the 61 and 62 HS codes.[20]

Table 7: Profile of Pakistani Businesses Exporting Apparel, 2016-17 Fiscal Year

Threshold	Number of Firms (Share)	Export Value (Share)	Top Product Categories (Share)	# of HS codes	Top Markets (Share)	Number of Markets
Over US$100m	8 (0.2%)	US$1.5B (31%)	1. 620322 (59%) 2. 611595 (12%) 3. 610910 (6%)	76	1. United States (31%) 2. Germany (11%) 3. UK (10%)	70
US$10-100m	64 (1.3%)	US$1.6B (34%)	1. 620322 (26%) 2. 620342 (13%) 3. 610590 (8%)	135	1. United States (28%) 2. UK (16%) 3. Spain (14%)	86
US$1-10m	401 (8%)	US$1.2B (25%)	1. 620322 (8%) 2. 610590 (8%) 3. 620342 (6%)	178	1. United States (33%) 2. UK (14%) 3. Germany (11%)	133
Less than US$1m	4,481 (90%)	US$0.5B (10%)	1. 611610 (7%) 2. 610590 (7%) 3. 620349 (5%)	203	1. United States (26%) 2. UK (18%) 3. Germany (9%)	164
TOTAL	4,954	US$4.7B (—)	1. 620322 (30%) 2. 611590 (6%) 3. 620342 (6%)	207	1. United States (30%) 2. UK (14%) 3. Germany (10%)	175

Source: Authors based on Pakistan Customs Authority database. **HS codes:** 620322 = men's or boys' trousers or related products; 611595 = panty hose, tights, stockings, socks and other hosiery; 610910 = cotton T-shirts; 620342 & 620349 = recreational performance outerwear; 610590 = men's or boys' shirts, knitted or crocheted (other textile material): 611610 = gloves.

While the total number of businesses and the average exports suggest an industry that is heavily oriented toward SMEs, the sector is best described as bifurcated. At the top, roughly 10% of businesses account for 90% of exports. In the 2016/17 financial year, that point of delineation was US$1 million in export sales—473 of Pakistan's apparel exporters eclipsed this threshold while 4,481 did not. Table 7 above provides a summary of the general profile of businesses exporting apparel products. It divides companies into four categories based on the value of exports.

Although it is not unusual that a handful of firms account for the majority of exports in a country, it is notable that Pakistan's upper echelon includes many of the country's largest companies across the entire economy. Eight topped US$100 million in apparel exports during the 2016/17 financial year. These companies represented 0.2% of the entire population of apparel exporters but generated 31% of the exports, reinforcing the top-heavy nature of the industry.[21] All are integrated from fabric

[20] The totals described in this subsection differ slightly from the figures outlined in the "Product Profile" subsection for two reasons: 1) They capture the 2016/17 fiscal year instead of the 2016 calendar year; and 2) the firm-level data is based on Pakistan's exports whereas the trade data reflects Pakistani imports reported by trading partners.

[21] This likely understates the concentration at the top. Consolidated data was not available for parent companies that aggregates individual locations or subsidiaries. If it were, the share would be much higher.

to apparel, and many have at least some internal yarn spinning capacity. Only one company exports textiles in significant volume. All concentrate on export markets nearly exclusively.

The largest exporters often concentrate in a narrower range of products. The 620322 HS code (men's or boys' trousers or related products) was especially popular for companies that generated over US$10 million in apparel exports in 2016/17—59% of the exports for the over US$100 million firms fell into this category while 26% of the exports for the US$10-100 million businesses did the same. In fact, six of the largest eight exporters appeared to specialize on individual products, with one HS code that accounted for at least 84% of exports during that financial year.

While the US was still the largest market for many firms that generated more than US$100 million, there is geographic diversity, with few concentrating on any one market (see Table 8 below). The most common import for businesses in this grouping include labels, cotton and narrow woven fabrics; however, the overall import footprint for these firms is light (only US$77 million across the 50-65 HS codes for the 2016/17 financial year) (Pakistan Customs Authority, 2018). Instead, most of these inputs are available on the local market or generated internally by the companies.

Table 8: Apparel Companies in Pakistan with >$100m in Exports, 2016-17

Firm	Exports (US$, millions)	Apparel Share of Exports^	Largest HS Code (Share)	Largest Market (Share)	Largest Import* (Share of Total)
Firm #1	217	100%	620322 (97%)	United States (28%)	Synthetic sewing thread (24%)
Firm #2	211	95%	611595 (84%)	United States (28%)	Labels (44%)
Firm #3	209	84%	620322 (99%)	Spain (22%)	Labels (28%)
Firm #4	195	97%	610510 (26%)	United States (67%)	Narrow woven fabrics (37%)
Firm #5	186	100%	611090 (23%)	United States (24%)	Narrow woven fabrics of other materials (35%)
Firm #6	180	83%	620322 (99%)	United States (43%)	Cotton (81%)
Firm #7	154	67%	620322 (99%)	United States (48%)	Labels (38%)
Firm #8	123	100%	620322 (99%)	Spain (36%)	Labels (38%)

Source: Authors based on Pakistan Customs Authority data. ^ = is compared only against the firm's textile exports and not economic activities that fall outside T&A GVC. * = The firm database only had imports for textile and apparel (HS codes 50-65). A three-year period (2014-17) is used to smooth potential supply chain fluctuations. **HS codes:** 620322 = men's or boys' cotton suits, ensembles, suit-type jackets, blazers, trousers, etc.; 611595 = panty hose, tights, stockings, socks and other hosiery; 610510 = men's or boys' shirts, knitted or crocheted (cotton).

Smaller businesses export similar products in significant volumes, although not to the same narrow degree as the larger firms. There were 401 companies that exported between US$1-10 million worth of apparel during the 2016/17 fiscal year (8% of the total population). Their product distribution was more evenly distributed, with the largest five outputs all having between 5-8% shares of the total market.

In terms of sheer volume, the majority of businesses exporting apparel are SMEs generating less than US$1 million in sales. In total, more than 90% of the firm population (4,481 of 4,954 total firms) falls into this category. These companies export products in at least 203 HS codes, with gloves, mittens and mitts, coated or covered with plastics or rubber (HS code 611610) being the most popular (7% share). While men's or boys' cotton suits, jackets and pants is the largest product HS code for Pakistan's largest exporters, it is only the fourth leading output for the country's smaller companies.

3.2.2. Backward Linkages

Cotton is the most significant import for companies active in Pakistan's apparel value chain, despite the fact the country is one of the world's largest five producers. Three of the largest 10 product categories for imports for firms that specialize in T&A exports from 2014-17 are different cotton varieties or classifications. Together, these three categories account for close to 20% of all imports, with the 5201.0090 HS code (an "other" category that captures cotton products) being the largest. Other prominent categories include artificial fibers, chemical compounds and capital equipment. Table 9 below lists the top imports from the 2014/15 financial year through 2016/17. The largest 10 accounted for 43% of all imports from T&A firms located in Pakistan.

Table 9: Top 10 Inputs Imported by T&A Exporters, 2014/15-16/17

HS Code	Product	Share of Import Value (%)
5201.0090	Cotton, not carded or combed (other category)	14.5
3926.9099	Plastic materials (other category for elastic bands and others)	5.1
5504.1000	Artificial staple fibers (of viscose rayon)	5.1
3902.1000	Polypropylene	3.0
5503.2010	Synthetic staple fibers (of polyesters)	2.8
2905.3100	Ethylene glycol (Ethanediol)	2.8
8446.3000	Weaving machines (for fabrics with width larger than 30 cm)	2.7
5201.0060	Cotton (length exceeding 28.5 mm but not 31 mm)	2.7
5402.3300	Textured yarn of polyesters	2.6
5201.0050	Cotton (length exceeding 24.5 mm but not 28.5 mm)	2.1
—	**Total**	**43.4**

Source: Pakistan Customs Authority (2018).

The inflow of significant volumes of cotton could be considered something of a surprise considering Pakistan's position as a leading cotton producer. The country's total production volume has fluctuated between 7-10.6 million bales since 2008, placing the country in the top five in the world (USDA FAS (2018). Yet output has plummeted in recent years, dropping nearly 34% in 2015/16 before a moderate increase in 2016/17. Quality is also low, which can be tied to a number of factors, including a pricing system that rewards weight, antiquated production and picking technologies as well as a familiarity with low-grade, small staple cotton (Batool & Saeed, 2017). The result is that local apparel producers pursue imports to access higher quality raw materials to blend for textile production that eventually results in apparel (Field Research, 2018).[22]

With the local production at least serving as a backstop, cotton is not the most significant gap in the chain. Instead, the largest demand is for MMFs that are not widely produced in the domestic market (or synthetic fibers, as depicted in the apparel GVC diagrams). If one concentrates more narrowly on the fabric, yarn and fiber inputs that are used to create garments, roughly 64% of Pakistan's aggregated material imports in 2016 were for MMF. In total, Pakistan imported roughly US$1.55 billion in MMF materials in 2016.

[22] The bottom line is that Pakistan is the third-largest cotton consuming nation in the world and the sixth biggest importer (Batool & Saeed, 2017). It is a net cotton importer.

Approximately 82% of the country's US$600 million worth of fabric imports was for MMFs compared with 7% silk and 6% cotton (see Table 10). Most came from China, a share that has increased rapidly in recent years, from 59% in 2006 to 86% in 2016. For yarn, 84% of Pakistan's imports are for MMFs in 2016 as opposed to 13% for cotton. China is the largest source, accounting for 61% of the US$750 million of Pakistan's yarn imports in 2016. The only category where there is relative balance between cotton and MMF imports is in the unfinished fiber segment, which includes raw cotton and reinforces the dynamics described above. Pakistan imported US$1.06 billion worth of unfinished fiber in 2016; 55% was cotton material while 41% was MMF.

Table 10: Pakistan's Fabric, Yarn and Fiber Imports, 2006-16

Material	Import Value (US$, billions)				Share			
	2006	2009	2012	2016	2006	2009	2012	2016
Fabric (Knit, Woven)								
Total	**0.15**	**0.07**	**0.22**	**0.60**	**—**	**—**	**—**	**—**
MMF	0.11	0.05	0.10	0.49	75%	63%	45%	82%
Silk	0.00	0.00	0.02	0.04	2%	6%	8%	7%
Cotton	0.02	0.01	0.08	0.04	16%	15%	37%	6%
Other (wool, vegetable fiber, etc.)	0.01	0.01	0.01	0.02	7%	16%	6%	4%
Yarn (Filament, Staple, Unprocessed)								
Total	**0.26**	**0.36**	**0.61**	**0.75**	**—**	**—**	**—**	**—**
MMF	0.24	0.32	0.55	0.63	90%	89%	90%	84%
Cotton	0.01	0.01	0.04	0.10	4%	2%	7%	13%
Silk	0.01	0.02	0.01	0.01	4%	6%	2%	1%
Wool	0.00	0.01	0.01	0.01	1%	2%	1%	1%
Silk or Vegetable Fiber	0.00	0.00	0.00	0.01	1%	1%	0%	1%
Fiber (Unfinished; Unfinished or Waste; Waste)								
Total	**0.71**	**0.87**	**1.04**	**1.06**	**—**	**—**	**—**	**—**
Cotton*	0.40	0.48	0.57	0.58	56%	56%	54%	55%
MMF	0.25	0.32	0.42	0.43	35%	37%	40%	41%
Silk or Vegetable Fiber	0.05	0.06	0.05	0.04	7%	7%	5%	3%
Wool	0.01	0.01	0.00	0.01	2%	1%	0%	0%
Silk	0.01	0.01	0.00	0.00	1%	1%	0%	0%

Source: UN Comtrade (2002-2016a). Note * = category captures raw or slightly processed cotton.

3.2.3. Product Profile

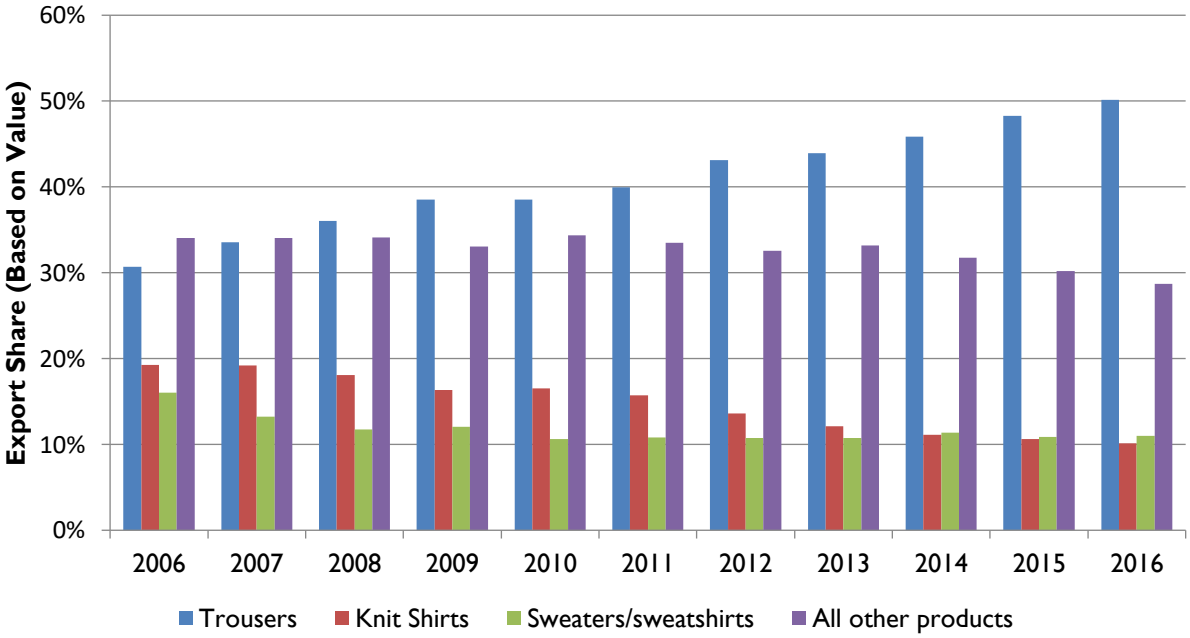
Although it has not enjoyed the dramatic, double-digit growth of regional peers (see Figure 4 in global section), Pakistan's apparel exports have steadily increased in recent years. The country ranked as the world's eighth leading apparel exporter in 2016 with US$5.7 billion in trade, ninth if one considers the EU-15 as an aggregated bloc.[23] Its annual growth rate in the period from 2010 to

[23] The totals described in this subsection differ slightly from the figures outlined in the "Firm Profile" subsection for at least two reasons: 1) They capture the 2016/17 fiscal year instead of the 2016 calendar year; and 2) the firm-level data is based on Pakistan's exports whereas the trade data reflects Pakistani imports reported by trading partners. Exchange rate fluctuations may also play a role.

2016 was 7.5%, which is the fourth highest among the leading 10 exporters, trailing only Cambodia, Vietnam and Bangladesh.

Pakistan's exports are concentrated in three product categories: trousers, knit shirts and sweaters. Together, the trio accounted for 66-71% of the country's exports in the period from 2006 to 2016. Much of the increase has been driven by trousers, which had an annual growth rate of 11.6% during that same span. The growth rates for the other two exports—knit shirts and sweaters—have been more moderate. Figure 7 below charts trousers' overall increase in export share as measured by value; Table 5 that was introduced earlier has individual data points. Of the country's second-tier apparel products, hosiery & socks and accessories are two categories where annual growth exceeded 5% in the period from 2006 to 2016 and total export value was at least US$300 million.

Figure 7: Share of Total Export Value for Leading Apparel Products, Pakistan



Source: Authors based on UN Comtrade (2002-2016).

Trousers' growth comes at a time when Pakistan's jeans manufacturers have enjoyed some success, with denim being identified as a growth opportunity (Mangi, 2018). The value of the country's exports places it sixth individually in the world, trailing China, Bangladesh, Vietnam, Turkey and Cambodia.[24] Pakistan captures a higher unit value for its pants than its regional peers, trailing only the EU-15 and Turkey for highest unit value among the world's 10 largest trouser exporters. The "Upgrading in Pakistan's Apparel GVC" examines this trend in further detail, while Table 14 in the Advantages subsection lists the leading trouser exporters.

Consistent with its profile as a major cotton producer, Pakistani apparel exports skews heavily toward the material. Cotton's share of total apparel exports has been between 82-87% in the

[24] The EU-15 combined had US$9.2 billion of trouser exports in 2016. However, no individual country ranked ahead of Pakistan—Italy was the EU's leader with US$2.2 billion in trouser exports.

decade from 2006 to 2016. MMF exports have comprised 6-9% of the country's total during the same period.

In terms of fabric construction, woven products have become Pakistan's most common, overtaking knitted outputs in 2012 and increasing market share from 41% in 2006 to 53% in 2016. Knitted products still accounted for 47% of Pakistan's apparel exports in 2016. This trend distinguishes Pakistan from the global industry, where knitted products have grown at a faster rate than woven.[25]

3.2.4. End Markets

Pakistan's apparel products are largely exported to one of two destinations: the EU-15 and the US. One of the more prominent developments in the Pakistan apparel industry in recent years is its increased access to European markets. The US had been Pakistan's top trading partner throughout the early 2000s before the EU-15 took over that position in 2009. EU's ascension has continued in the years since—the 15 countries that comprise the EU-15 received 54% of Pakistan's apparel exports compared to 24% for the US. Growth markets include Poland (exports were up 27% on an annual basis in the years between 2012 and 2016) and China (up 39% annually in the same span), although these markets still receive small percentages of final products. Figure 8 below charts the EU-15's and the Rest of World's recent gains as well as the US's decline.[26]

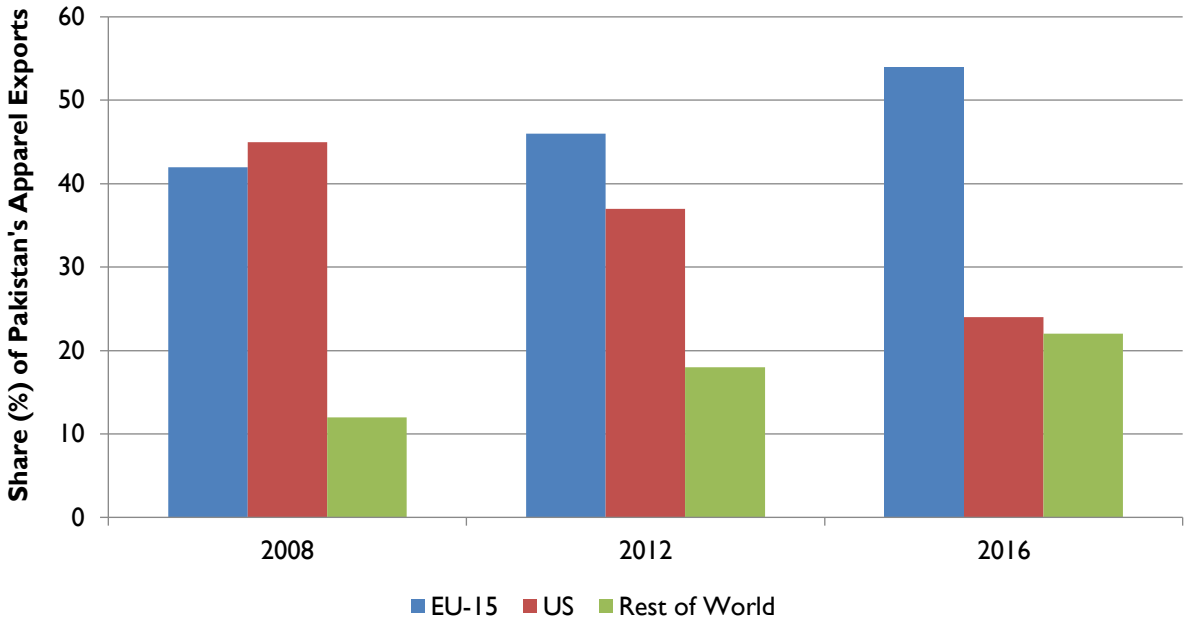
One reason that Pakistan's exports to the EU-15 have surged in recent years is the country's participation in the GSP+ program since 2014. As part of the initiative, the EU provides preferential market access to developing countries in exchange for that country committing to improve both human capital and labor rights. Although Pakistani exports to the EU have been on an upward trajectory for some time, the growth rate has increased in more recent years.

At the same time, exports to the US have declined significantly because of political and security considerations. The US State Department has regularly issued travel advisories against visiting the country since the September 11th terrorist attacks, and the relationship between the two countries has been strained at various points since Osama Bin Laden was killed in Abbottabad in 2011. With the travel restrictions, Pakistani suppliers must travel to the US or nearby countries (Bangladesh, Sri Lanka, the UAE) to meet global buyers or work via intermediaries. The limited access hinders opportunities to engage in product development and design with US buyers and facilitate economic upgrading.

[25] At the same time that it imports fabric, yarn and fiber in significant quantities, Pakistan also regularly exports textile components. In 2015, importers from around the world reported US$2.5 billion in imports of fabric from Pakistan, 98% of which was woven fabric, and US$1.8 billion in yarn (98% staple), for a combined total of US$4.4 billion. Both are primarily cotton-based (87%). The main fabric importer is Bangladesh (19%) and China (68%) for yarn (UN Comtrade, 2002-2016a). The country ranked seventh in global yarn exports and eighth in fabric.

[26] In terms of products and fabric construction, there is only minor variance in terms of destination. The most important products in both the US and EU-15 markets are trousers and sweaters and sweatshirts. In terms of fabric construction, there have been recent changes in the composition of exports to the US compared to the EU-15 countries, with knit exports to the US declining in importance.

Figure 8: Pakistan's Top Apparel Export Destinations, Final Products, 2008-2016



Source: Authors based on UN Comtrade (2002-2016).

3.3. Governance and Industry Organization

A defining characteristic of Pakistan's apparel industry is that it is mostly oriented toward the domestic market, notwithstanding the largest 8-10 companies, which sell almost exclusively to foreign buyers. With limited amounts of FDI and thousands of SMEs that struggle to export to foreign countries in significant volume, there are only limited connections to the global industry. Using the distinctions outlined earlier in the report, there are no OBMs and only scattered examples of ODMs. The majority are either OEMs or second-tier CMT manufacturers.

The companies that have managed to integrate into the supply chain of global buyers generally owe their success to longstanding textile production. The largest firms often were established in the second half of the 20th century and used the country's cotton base as a foundation for entering the industry as yarn manufacturers. With access to cotton inputs as well as country-level supporting features that did not serve as debilitating constraints—Pakistan's labor costs were not exorbitant, human capital was reasonably skilled and the port of Karachi served as an effective point of distribution—a small handful of businesses earned high returns by performing low-value, CMT-like activities. While subsequent economic upgrading has mostly occurred on a delayed basis, the leading firms have managed to diversify to a degree, with the largest performing ODM activities.

There are exceptions to this general narrative. Some companies that started in apparel production have consolidated their position through strategic integration, both backward into textiles and forward into finishing activities. Critically, the firms that followed this path progression made investments in human capital that allowed for the development of higher-value activities such as washing and finishing that have allowed a small number of firms to distinguish themselves for regional competitors and attract the attention of prominent OBMs (Field Research, 2018).

3.3.1. Lead Firms

Major buyers such as Target, the Gap, Levi's, C&A and others have supply chains that extend into Pakistan. These global lead firms typically purchase garments from a small network of Tier 1 suppliers that are located throughout the country. There are 5-10 Pakistani companies that sell to more than one large global buyer while 25-30 more that have assimilated into the supply chain of at least one lead firm (see Table 11). There are still other businesses that either aggregate purchases across many smaller suppliers (intermediaries/agents) or others that have niche product categories and interact more directly with specialty buyers. Three of the largest intermediaries/sourcing agents for the apparel industry in Pakistan are Matrix Sourcing, Li & Fung and Texlynx.

Table 11: Pakistani Tier I Apparel Suppliers of Major Global Buyers

Pakistani Suppliers	Global Buyers	Segment/Products	Location	Workers in Pakistan	Year Est.
Nishat Mills	C&A, New Look, Target, Levi's, Gap	Weaving, dyeing, finishing, woven apparel	Lahore, Faisalabad	1000-5000	1951
Sapphire Group	—	Yarn, Fabric, Knitwear, Woven apparel	Lahore	25,000	1970
Artistic Fabric & Garment	Gap; C&A; New Look; Target; VF	Denim manufacturing/yarn	Karachi	5000-10,000	—
US Apparel & Textile (US Denim)	Tesco, Levi's, C&A	Denim fabric; Jeans	Lahore	18,250 (1,650 denim)	1975
Mahmood Group	—	Yarn, woven	Kabirwala Multan	12,500	1935
Gul Ahmed Textile Mills	M&S, Target	Yarn, stitching	Karachi	10,000+	1953
Interloop Limited	H&M; Tesco; Levi's; Target; C&A	Hosiery	Lahore, Faisalabad	15,000	1992
Masood Textile Mills (MTM)	Levi's, Target	Yarn, knit fabric, knitwear	Faisalabad	22,000	1984
Klash Private Ltd.	Europe	Knit fabric, Knit cotton tops	Faisalabad	10,000	2002
Comfort Knitwear	H&M	Yarn, Dyeing, Knitwear	Lahore	7,500 (5,500 apparel)	1987

Source: Authors based on company websites, LinkedIn profiles.

The largest of these firms generally have established histories as textile producers, with any backward or forward integration most often occurring in the recent past. Nishat Mills, for example, is one of the larger T&A companies in the country. It began in 1951 as a textile manufacturer in Lahore before supplementing with apparel manufacturing in 2007. Smaller numbers of businesses were more proactive in diversifying their product portfolio earlier in their existence. Artistic Denim is an example of an exception to the larger trend of specialization in textiles. The denim producer began manufacturing jeans decades ago, which has allowed it to build expertise that has been identified as a key factor in the company's growth trajectory (Mangi, 2018).

There are many large denim manufacturers that have supported Pakistan's strong trouser exports. Levi's—a leading global brand of jeans—purchases from at least 10 Pakistani suppliers in Karachi, Lahore and Faisalabad: Akhtar Textile Industries, Akhtar Textiles, Combined Fabrics, Cotton Web Limited, Crescent Bahuman, Dynamic Sportswear, Firhaj Footwear, Interloop Limited, Masood Textile Mills, Nishat Mills and US Apparel & Textiles (Levi, 2018).

3.3.2. Institutional Context

There are number of domestic institutions that have helped give Pakistan's T&A industries its shape. Some of these are broad-based organizations that interact with multiple stakeholders across the broader economy. Examples of these groups include the Ministry of Commerce, Ministry of Industry and Production, the Small and Medium Enterprise Development Authority (SMEDA), the National Tariff Commission (NTC), the Engineering Development Board (EDB). There are also export promotion agencies such as the Pakistan Export Processing Zones Authority and the Trade Development Authority of Pakistan. Labor issues are then handled by the Ministry of Human Resource Development and the provincial labor secretaries.

There are then industry-specific actors. Owing to its historical importance of cotton, many of these organizations have a textile focus. At the government level, the most prominent is the Ministry of Textile Industry, which coordinates programs and strategies for the entire sector. It is supported by active industry associations, including the Pakistan Readymade Garment Manufacturer & Exporter Association (PRGMEA), the All Pakistan Textile Mill Association (APTMA) and the Pakistan Textile Exporters Association (PTEA). Table 12 below provides a summary of the key stakeholders.

As the government agency charged with formulating textile policy, the Ministry of Textile Industry plays a significant in shaping strategy. Its most recent policy document is the *Textiles Policy 2014-19* document, which was released in 2016 and replaces the 2009-14 version. The latest edition outlined 15 goals, many of which have quantifiable targets, including doubling textiles exports from US$13 billion to US$26 billion, facilitating new investments of US$5 billion in machinery and technology, boosting the composition of non-cotton materials in fibers from 14% to 30%; and improving the non-cotton mix in garments from 28% to 45% (MOTI, 2015).

To support the broader strategy, the Ministry of Textiles pledged a variety of budgetary support mechanisms through 2019. These include the reduction of local taxes, access to easy finance, a sales tax refund regime, duty-free imports on machinery, and funding for vocational training. Additionally, the document proposed policy interventions to address the following issues or challenges: 1) tariff rationalization; 2) product diversification; 3) funding support for technology upgrades; 4) SME development; 5) establishment of product development centers; 6) OHS audits and trainings;[27] 7) Joint Ventures, mergers or relocation of international manufacturers; 8) strengthening textile firms; 9) electricity and gas; and 10) awareness and information dissemination.

[27] As part of this effort, the government proposed conducting analysis on energy usage and distributing information about best practices related to conserving energy.

Table 12: Textile & Apparel Specific Supporting Stakeholders in Pakistan

Name	Classification	Established	Description
All Pakistan Textile Mills Association (APTMA)	Industry Association	1957	Largest trade association, representing textile spinning, weaving, and composite mills
All Pakistan Textile Processing Mills Association (APTPMA) Faisalabad	Industry Association	1990	Processing of textile products in Dyeing, Bleaching and Printing. 372 members
Karachi Cotton Association (KCA)	Industry Association	1933	Cotton association for the whole of Pakistan.
Ministry of Textile Industry (MOTI)	Government Agency	1973	Formulates programs and strategies to bolster the competitiveness of textile sector
Pakistan Cotton Ginners Association	Industry Association	1958	Industry association for cotton ginners, representing more than 1,200 members
Pakistan Hosiery Manufacturers Association (PHMA)	Industry Association	1960	Represents hosiery and knitwear industry
Pakistan Readymade Garments, Manufacturers & Exporters Association (PRGMEA)	Industry Association	1981	Provides assistance to manufacturers and exporters to promote trade environment
Pakistan Textile Exporters Association (PTEA)	Industry Association	1985	Advocates for textile exporters and communicates with government

Source: Authors.

While the *Textiles Policy 2014-19* document provides some strategic guidance to the sector, there are three regulatory areas that influence Pakistan's participation in the apparel GVC to significant degrees: labor; tax & tariff; and trade & investment. Each is outlined below.

Labor Policies

An important component of the labor environment in Pakistan is the 18th Amendment to the Constitution. Passed in April 2010, it pushed labor as well as 46 other subjects to provincial governments. The result is a patchwork of laws across the country that lack consistency with little harmonization (CNV Internationaal, 2017). The International Labour Organization (ILO) and other NGOs have attempted to provide regulatory foundations to support workplace gains across the whole country, but there is often minimal implementation at the local, provincial or national levels.

The implications for the apparel sector have been pronounced. The most prominent labor issues involve the right to form unions and the ability to earn a minimum wage, although there are also considerations for child workers, workplace safety and limiting excessively long work days. Each is examined below.

- **Freedom of Association:** Unions do not have a strong presence in the T&A industries. This is primarily the result of non-regulatory considerations, although it should be noted that the right to strike is not considered a fundamental right (CNV Internationaal, 2017). Moreover, labor laws do not apply to Pakistan's Export Processing Zones (EPZs), where workers are not allowed to unionize (Richardson et al., 2017). Estimates indicate that 30-40% of all SEZ employees in Pakistan are female textile workers (CNV Internationaal, 2017).

- **Minimum wages:** The governments of Punjab and Sindh provinces set basic wage laws that govern most T&A workers. After variance between regions prevailed in previous years,

all provinces have set the minimum wage for unskilled work to PKR 14,000 (roughly US$115) per month (Wage Indicator, 2018).

- **Workplace safety:** While there are basic protections enshrined into national law, prominent incidents have highlighted their inadequacy.[28] Both the Punjab and Sindh provinces have initiated processes to improve occupational health and safety, although there are hurdles—including an untrained and largely illiterate workforce—preventing progress.

- **Use of child labor:** Child labor is prohibited through Article 11 of the constitution. However, the informal sector is characterized by the employment of children as young as 10, with many working in various segments of the textiles chain (CNV Internationaal, 2017).

Tax and Import Tariff Policies

There are many components of the tariff and tax regime for apparel exporters. Three of the more prominent are the Duty Drawback of Taxes (DDT), the Drawback of Local Taxes and Levies (DLTL) and the Duty and Tax Remission (DTRE).[29] Key features of each are as follows:

- **DDT:** Pakistan's Economic Coordination Committee approved a 50% refund on duties, taxes and fees collected on the importation of textile inputs that are then used for export. Additional drawbacks are possible if companies increase exports by at least 10% or trade with non-traditional markets in Africa, Latin America and the Commonwealth of Independent States (Fibre2Fashion, 2017). Originally offered as a benefit to companies for the 2017 fiscal year, the government extended the benefit in 2018.

- **DLTL:** The DLTL provides textile exporters with refunds for local taxes and levies. Refunds are on values of their enhanced exports on an incremental basis if increased beyond 10% over previous year's exports. The rates vary by stage of the supply chain, with home textiles receiving 6%, apparel earning 7% and components between 3-4% (MOTI, 2015; Observer., 2017).

- **DTRE:** The DTRE allows businesses to import inputs duty free provided they re-export them (i.e., if a firm needed to import synthetic fibers or yarn, the same entity would need to export the product). However, only direct exports receive the benefit, thereby encouraging firms to integrate vertically to be eligible for the program.

The average tariff on cotton imports from Most Favored Nations (MFNs) is 3.8%, with individual rates ranging from 1-10% (WTO, 2015).[30] These rates are subject to fluctuations. In 2017, for instance, the government imposed a 4% tariff and 5% sales tax on imported cotton while excluding local cotton from the tax (USDA, 2018). The government then eliminated the tariff and taxes in

[28] One example is a 2012 fire at a textile complex in Karachi that killed nearly 300 workers. Windows were barred at the site and many of the exits locked (ur-Rehman et al., 2012).

[29] There are other policies designed to offer benefits to exporters, including manufacturing bonds. In the interest of brevity, this report focused on the schemes directly cited during field research. The government announced a plan in 2018 to offer security bonds for tax refunds; however, T&A exporters have expressed concerns about the proposal (The Express Tribune, 2018).

[30] For comparison, Pakistan's average (MFN) tariff on textiles and textile articles is 18.7%, with the individual range between 1-25% (WTO, 2015).

2018 to reduce costs on manufacturers.[31]

The cost and complexity of importing synthetic fibers is also an issue that inhibits product diversification in Pakistan (Kumar et al., 2016). Tariffs on imports of MMF are higher than cotton; the range, depending on the product is 5-16% (Pakistan Federal Board of Revenue). Due to the nature of the DTRE program, if a firm needed to import synthetic fibers or yarn, the same entity would need to export the product. However, given that most companies are structured as independent units—fabric and cut/sew are separate entities—the woven fabric would have to be exported to get the drawback unless the fabric manufacturer and the apparel producer are the same entity.

Trade and Investment Policies

Pakistan's Board of Investments (PBOI) helps coordinate strategies related to FDI while also managing the country's SEZs. The organization released two strategy documents in 2013 to help shape the country's approach to foreign investors: the *2013 Investment Policy* and the *FDI Strategy 2013-17*. Both identified the textile industry as a priority sector; neither includes apparel.

One component of the *2013 Investment Policy* was the Special Economic Zones Act 2012, which allowed for the creation of processing zones in the country. The benefits for businesses located within the 50-acre minimum tracts included: 1) duty-free import of capital goods; 2) income tax exemptions; 3) infrastructure support; 4) allowances for captive power generation; 5) one-window facilities operated by the BOI for administrative and compliance requirements; 6) dry port facilities; and 7) security considerations (Pakistan BOI, 2013). The SEZ regime provides similar services as the country's Export Processing Zones (EPZs), which are managed by the Export Processing Zone Authority, which is also housed under the Pakistani government. EPZs were first established in Pakistan in 1980, and there are eight spread throughout the country. Economic benefits include competitive lease rates on buildings as well as tariff and tax reductions for inputs and exemptions from foreign currency exchange repatriation regulations (EPZA, 2018).

A critical difference between EPZs and SEZs is that EPZs are more oriented toward foreign trade. Businesses in EPZs must export 80% of products, while companies in SEZs can sell in higher volume to the domestic market (Richardson et al., 2017). Another difference is the Export Processing Zone Authority provides more active management of EPZs while private companies or public-private initiatives often govern SEZs (Richardson et al., 2017).

Finally, the award of GSP+ status is one of the more significant recent developments as far as trade. GSP+ status allows more than 76% of Pakistan's T&A exports to enter the EU-15 without duties or quotas (EC, 2018b). To receive GSP+ benefits, products must have undergone double transformation. For apparel, this means the yarn, fabric and final garment must all originate from a beneficiary country. Pakistan is also a beneficiary of preferential market access under GSP to Canada, Japan, New Zealand, Norway, Russia, Switzerland, and Turkey, and it also has signed bilateral Free-Trade Agreements (FTAs) with countries such as Indonesia, Malaysia, Sri Lanka, Iran and Mauritius.

[31] Non-tariff barriers are also a constraint, with the government sometimes raising phytosanitary concerns on imported cotton that arrives on vehicles instead of through the port in Karachi (USDA, 2018).

3.4. Upgrading in Pakistan's Apparel GVC

With its historical roots in cotton and textile production, Pakistan has been primarily active in supporting activities of the apparel GVC. There has been some recent industry evolution, with most of the country's largest exporters adding apparel capacity at different points in the last 10-15 years. However, the delayed nature of the economic upgrading has led to relatively modest product diversity and limited activity in value-generating activities.

The upgrading that can be detected is somewhat limited and has often worked in tandem with each other.[32] For example, **process upgrades** in the form of reduced lead times to important destinations along with investments in human capital have allowed for **product upgrades** in the form of increasing amounts of woven products with more sophisticated washes and finishes. Combined, these factors have allowed the country to access markets that pay high price premiums while also diversifying to new markets **(end market upgrading).**

As highlighted in the "Firm Profile" and "Lead Firms" subsections, the industry is top-heavy. It is notable that the largest companies generally focus on one product, suggesting a sophistication with specialization and scale economies that serves as an advantage. It is these companies that have been most proactive about making progress to improve competitiveness in other respects. The apparel industry's most tangible gains include the following:

Process upgrading: Although it is difficult to quantify gains associated with improvements to Pakistan's production processes, officials from many of Pakistan's leading companies repeatedly highlighted gains in lead times as being critical factors that have allowed some to sell into the supply chains of lead firms such as Levi's and H&M.[33] The exact lead times vary depending on the product and market; however, most businesses reported reductions from 4-6 months to 2-3 months to as little as 35 days to ship products from Karachi to the EU, depending on the buyer (Field Research, 2018). Some firms have also invested in human capital, recruiting textile engineers and other skilled labor from production hubs in Turkey and elsewhere to develop capacity within Pakistan to generate garments with sophisticated washes and finishes.

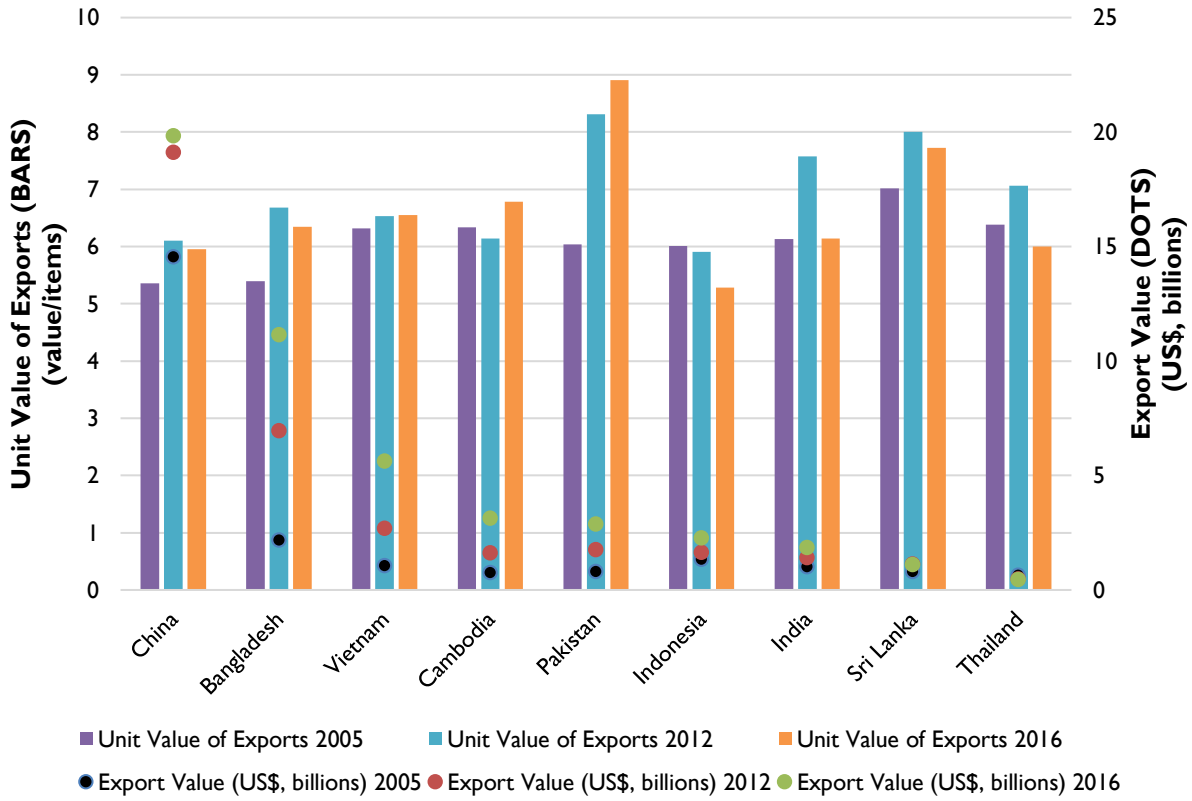
Product upgrading: Pakistan has made some moves into higher-value products in apparel production. Pakistan has a strong presence in denim manufacturing, with at least 10 companies active in Levi's supply chain. Many started selling to the jeans' manufacturer in the last 10 years, with some crediting improvements to their wash and finishing processes described above. During that time, Pakistan's unit value for exports of trousers has climbed to the third highest among the leading 10 global exporters. This has been driven by the country's increasing exports to the EU-15—the share of overall trouser exports to the EU-15 jumped from 55% in 2012 to 61% in 2016, and the unit value of Pakistan's EU-15 trouser exports is higher than its global average (US$9.5 vs. US$8.9). Overall, the unit value of the country's trouser exports increased 48% in the period from 2005 to 2016, giving Pakistan the highest unit value of trousers of anywhere in South and Southeast Asia. Figure 9 below charts the unit value of trouser exports for regional peers.

[32] This section considers only apparel upgrades. There are other examples if one includes textiles. The widespread addition of spinning capacity for textile production is one. A common progression for integration involves adding spinning capabilities followed by weaving, knitting and finishing.

[33] Surveys based on the perceptions of buyers have placed Pakistan with India for having the worst performance on lead times and reliability of eight Asian nations: China, Vietnam, Sri Lanka, Indonesia, Cambodia, Bangladesh, India and Pakistan (Frederick, 2016).

Pakistan's overall shift toward more woven products can also be considered a product upgrade. Woven's share of Pakistan's apparel exports increased from 41% in 2006 to 53% in 2016. This is notable for two reasons: 1) the unit prices associated with woven garments were US$9.8 per unit in 2015 compared with US$4.3 for knitted; and 2) the global industry has moved more toward knitted products.

Figure 9: Unit Value of Trouser Exports, South and Southeast Asia, 2005, 2012, 2016



Source: Authors based on UN Comtrade (2002-2016). **Note:** Bars illustrate unit value of exports while dots indicate the total value of trousers for a given year (US$, billions). As with all UN Comtrade data presented in this report, unit values were calculated using mirror data from importers. Unit value was calculated by dividing the export value into the number of units sold.

End market upgrading (diversification): Most of the apparel from Pakistan is still bound for two large markets: the US and the EU-15. However, there has been diversification in export destinations, with markets outside those locations receiving increasing share. The "Firm Profile" subsection highlighted how apparel companies export to 175 total markets. The aggregated share of Pakistani exports going to countries outside the EU-15 bloc and the US increased from 12% in 2008 to 22% in 2016. The individual percentages are ultimately small, but the growth rates are strong—exports to Poland were up 27% on an annual basis in the years between 2012 and 2016 while China increased 39% annually in the same span.

Industry specialization or intersectoral upgrading: In addition to apparel, Pakistan is also a top exporter of home textiles and textile components (yarn and fabric), which are industries that have substantial overlap with the apparel GVC and make use of local cotton production. Pakistan exported US$777 million of bathroom and kitchen linens in 2016 and US$773 million of cotton bed

linen (WITS, 2018), which would place both items in the top three of product categories if they were considered apparel exports. Moreover, both rank in the top six in analysis of export potential for the country's outputs, with Southeast Asia being targeted as potential growth markets.

3.5. Human Capital

The sizes of apparel workforces are difficult to ascertain. The overlap and inconsistencies in definitions associated with the T&A sectors is one reason for the challenge. Another is the high number of informal workers in developing countries. With respect to Pakistan, recent estimates have suggested there are as many as 2.2 million apparel workers and 4.2 in the greater T&A sectors (Huynh, 2017). However, the authors believe these estimates include home textiles in addition to footwear, neither of which are the focus of this study. Interviews conducted for this report suggest there are 700,000-1 million workers in Pakistan's apparel industry and that the T&A industries employ 2.5 million (Field Research, 2018).

Regardless of the size, there are three features associated with Pakistan's apparel workforce that are worth accentuating: 1) its low wages when compared with larger markets such as China, India, Indonesia and others (but not Bangladesh and Cambodia);[34] 2) its relatively low percentage of female workers; and 3) its shortage of skilled and literate workers in some areas. The first two characteristics are reinforced both through regional analysis as well as discussions with local stakeholders. The third factor—the skills gaps—can be best detected through country-level analysis. The following subsections explore each issue in further detail. Many data sources aggregate both T&A in their surveys; this subsection distinguishes between the two when possible and uses the T&A distinction when it is not.

3.5.1. Wages

The average monthly wage for Pakistani workers across all industries during the 2014/15 financial year was PKR 14,971, which was roughly the equivalent of US$145 at that time (PBS, 2015).[35] Financing, insurance, real estate and business services had the highest monthly salaries (PKR 36,659 or US$360) while agriculture, forestry, hunting and fishing had the lowest (PKR 7,804 or US$76). As was detailed in the Labor Policy subsection, provincial governments are responsible for setting minimum wage guidelines—the current minimum wage is PKR14,000 across all provinces.

Most apparel workers in Pakistan are still paid on a piece-rate basis for each basis of apparel generated (AASR, 2015). There is a wide range of salaries. Interviews with company officials associated with this project indicated that many paid their factory employees roughly US$200 per month (Field Research, 2018). A survey of workers in the Punjab province indicated that the highest paying positions include dyeing managers (average monthly salaries are from PKR180,000-300,000 or US$1,717-2,862), production planning (PKR65,000-90,000), cutting masters (PKR50,000-

[34] It is possible to make a comparison of apparel wages in Asian countries through different sources (see Huynh, 2017; van Klaveren, 2016; van Klaveren & Tijdens, 2018). One can estimate that Pakistan's apparel wages were higher than Bangladesh's and comparable to Cambodia's, while being significantly lower than India, Indonesia and China. However, none of the data points were from within the last three years, and they do not include supplementary features such as pensions and healthcare. Furthermore, the authors' estimates of Pakistani apparel workers' wages (US$200 per month) was higher than external sources.

[35] The last Labor Force Survey published by the Pakistan Bureau of Statistics was after the 2014/15 financial year.

120,000), washing masters (PKR 45,000-100,000), weaving masters (PKR45,000-70,000), knitting masters (PKR40,000-70,000) and industrial engineers (PKR30,000-85,000) (AASR, 2015). Knitting helpers and assistants, stitching helpers, bundle makers, and applique thread cutters are all at the other end of the spectrum, with all paying either minimum wage or just below.

3.5.2. Female Participation

The T&A is slightly more inclusive of female workers than Pakistan's entire economy. Of the 57.4 million total workers active in the country's labor force in 2014/15, 44.1 million were males (nearly 77%) compared with 13.4 million females (PBS, 2015). The share of females in the garment, textile and footwear sectors was 35% (Huynh, 2017). There have been recent increases in the female share, yet Pakistan still trails all its regional peers except for India (24%). Myanmar (95%), Vietnam (79%), Sri Lanka (76%) and China (66%) all have demonstratively higher women participation rates in apparel than Pakistan (van Klaveren & Tijdens, 2018).

Individual estimates highlight the low numbers of female workers across Pakistan's apparel GVC. In Punjab, a survey of garment manufacturers reported that the departments with the highest shares of female employees were Human Resources & administration (17%), finishing (16%), stitching (16%), product development (12%) and embroidery (11%) (AASR, 2015). The least popular divisions for females were logistics (1%), weaving (2%), production planning (2%), dyeing (2%), knitting (3%) and research & development (3%).

The high percentage of male workers has historical roots in many factors, including cultural norms about women's suitability for factory work, perceived security and safety issues, the lack of public transportation and insufficient child care all playing key roles (Huynh, 2017; Munir et al., 2018). Under the old system, males were paid for each unit produced and had independence to work at different locations and determine their own schedule (Munir et al., 2018). With the phaseout of the MFA, Pakistan had to compete with countries in the region that had lower wage rates. That presaged the development of a more structured, salaried system that appealed less to the experienced males and provided increased opportunities for women, who proved to be less resistant to change. Supporting programs initiated by internal and external stakeholders also played critical roles in increasing access for women (Munir et al., 2018). Among the more prominent are the United Nations Development Programme's Gender Promotion in the Garment sector through Skills Development (GENPROM) and the ILO's Gender Equality for Decent Employment (GE4DE).

These changes and programs have led to quantifiable participation gains. The average annual growth rate for women's employment (10%) exceeded men's (4.3%) from 2010/11 to 2014/15 (Huynh, 2017). In textiles, the average annual growth rate for women's employment was nearly 23%. Yet despite these increases, women's pay remains well below men's, with a pay gap of as much as 64% (Richardson et al., 2017). Research into the issue has found that 93% of women apparel workers earn less-than-minimum-wage salaries (Richardson et al., 2017).[36]

[36] It is worth pointing out that women work at smaller businesses to much higher degrees than men. Roughly 69% of men worked at businesses of five or less employees compared to nearly 100% of women (Huynh, 2017).

3.5.3. Skilled workers

A sizeable percentage of Pakistan lacks basic foundational education skills. The literacy rate of the population above 10 years old is 61%: 72% for males and 50% for females (PBS, 2015). The majority of the literate population attended formal schools but did not complete 10 years. Roughly 6% of the literate population completed high school while 5% finished high school and earned a formal degree.[37]

The workforce in the apparel industry is not without its strengths. While wages are higher than low-cost competitors such as Bangladesh, they are lower than many markets, including China, India and others (van Klaveren, 2016). Some companies have invested in human capital in areas such as washing and finishing, and surveys have indicated that at least 25% of the workforce is highly skilled in a number of areas, including stitching, design, production planning, dyeing and merchandising (Field Research, 2018; AASR, 2015).

However, companies also report significant volumes of average or poorly skilled workers (AASR, 2015). The specific gaps often depend on the geographic regions; however, an underlying feature is that training systems are underdeveloped (Field Research, 2018). Only 32% of businesses in Punjab had a formal system to train their employees, while 52% believe it is a waste of resources (AASR, 2015). While there is an established Technical and Vocational Education and Training (TVET) system, there are only limited amounts of spots available for the close to 1 million new labor market entrants each year (Sandhu, 2018). Moreover, only 2.5% of TVET students receive formal, on-the-job training through the program (Sandhu, 2018).

3.5.4. Education and Training

Pakistan offers T&A-specific education and training at all levels—technical/vocational, industry-specific institutes and four-year universities offering B.S., M.S. and PhD programs. This is relatively unique and is often a key bottleneck for countries wishing to upgrade by increasing skills.

- **Universities:** There are two main universities that provide textile and apparel-specific degree programs: National Textile University and the Textile Institute of Pakistan. These institutions offer bachelor's and master's degrees in classes that focus on T&A subjects.

- **Industry-Specific Training Institutes:** The Ministry of Commerce/Ministry of Textiles and the industry association for the different stages of the supply chain in Pakistan have set up a series of technical training institutions in the country. Operational funding is provided by the relevant industry association (via membership dues) with some support from the national or provincial government for consumables. Institutes also receive funding from international NGOs for specific programs or machinery. These relationships are facilitated by the Ministry of Textiles. The main programs include the Pakistan Readymade Garments Technical Training Institutes (located in Lahore and Karachi) and the Pakistan Knitwear Training Institute (located in Lahore).

[37] The Labor Force Survey uses a category labelled "intermediate" to describe students who completed 12 or 13 years of education while "degree and above" includes students who finished 14 or more years of education.

- **Technical and Vocational Programs:** TVET has textile courses. Of the 339,624 graduates from 2009-2018, approximately 7% (23,629) were from textile or apparel-related programs (not including tailoring). Programs with the most graduates are dressmaking, machine embroidery, fashion designing, hand embroidery and stitching operator. Some of the constraints with the program were outlined above, with as little as 2.5% of the program's graduates receiving formal on-the-job trainings (Sandhu, 2018).

3.6. Advantages and Constraints

There are strengths and opportunities associated with the sector, with the country's expansive cotton production, its growing exports in certain product categories and its access to the European market being three of the more prominent. The high rate of domestic ownership also offers potential for future upgrading. Balanced against the reasons for optimism are a number of challenges, both related directly to the industry as well as the country as a whole. Table 13 summarizes both the strengths and weaknesses. The most prominent advantages and constraints are then outlined in the section that follows. The potential upgrading section expounds on possible opportunities.

Table 13: SWOT of Pakistan's Apparel Industry

Strengths	**Weaknesses**
• Status as leading cotton producer has strengthened backward linkages to allow for presence in trousers • Low labor costs distinguish country from some regional peers • GSP+ access to EU-15 markets • High rates of domestic ownership provide familiarity with downstream activities • Supporting environment provides industry with institutional foundation • China-Pakistan Economic Corridor (CPEC) project could improve infrastructure	• Cotton production is declining, and the quality is low • Gaps in the supply chain have limited product diversity and upgrading • Concerns with lead times • The supporting environment is fragmented • Limited amounts of FDI leave parts of domestic sector disconnected from global industry • Skills deficiencies continue to undermine sector's potential • Complicated and inefficient trade and investment regimes • Infrastructure and safety remain leading concerns
Opportunities	**Threats**
• Increased specialization in trousers and denim • Diversification of apparel products or move into related outputs (medical textiles) • ODM and OBM for select products • Boosting share of women workers	• Climate change • Terrorism and political instability

Source: Authors.

3.6.1. Advantages

Many of Pakistan's advantages in the apparel industry can be traced to its historical position as a cotton and textile producer. Enhanced access to European markets, cost-competitive labor and high percentages of domestic ownership are also important considerations. The follow subsection expounds on Pakistan's strengths in further detail.

1. **Status as leading cotton producer has strengthened backward linkages to allow for presence in trousers.** Although its output has been stagnant for the better part of 20 years, Pakistan still ranks in the top five globally in terms of annual cotton production. Access to the material has provided textile manufacturers with a critical input and facilitated the country becoming a top-10 exporter of yarn and fabrics. The backward linkages have also allowed Pakistan to carve out a niche in certain product categories where the country's limited supply of MMF materials does not act as a roadblock.

   Trousers are the most compelling example. If Pakistan is going to have a strong presence in one category, trousers are an advantageous one. Globally, they are the leading apparel export product. In 2014, 69% of all trouser imports around the world were cotton, 23% were MMF, 6% was other material and 2% were wool. That profile has suited Pakistan well. At a time when it has expanded its capacity for denim production, Pakistan ranked as the sixth largest individual trouser exporter in 2016 (seventh if the EU-15 is considered as one bloc), and the value of its exports are the third highest among the leaders. Table 14 below lists the world's top 10 trouser exporters in 2016 and includes each market's unit value.

Table 14: Top 10 Global Trousers Exporters, 2016

Partner	Value (US$, billions)	Volume (items, billions)	Shares (%)		Unit Value
			Value	Volume	
World	**76.3**	**10.5**	**—**	**—**	**7.3**
China	19.8	3.3	26%	32%	6.0
Bangladesh	11.1	1.8	15%	17%	6.3
EU-15	9.2	0.8	12%	7%	12.1
Vietnam	5.6	0.9	7%	8%	6.6
Turkey	4.3	0.4	6%	4%	11.0
Cambodia	3.1	0.5	4%	4%	6.8
Pakistan	***2.9***	***0.3***	***4%***	***3%***	***8.9***
Indonesia	2.3	0.4	3%	4%	5.3
India	1.8	0.3	2%	3%	6.1
Mexico	1.8	0.2	2%	2%	8.7

Source: (UN Comtrade, 2002-2016c). Exports based on world imports from all countries.

2. **Low labor costs distinguish country from some regional peers.** While there are exceptions (Bangladesh is a prominent one), Pakistan's wage rates are lower than many regional competitors (van Klaveren, 2016), especially large economies such as China, India and Indonesia. The relatively cheap labor provides Pakistan with advantages, especially since it can distinguish itself from lower-cost competitors such as Bangladesh with an integrated supply chain as well as capacity to produce export products with sophistication, including finishes on denim and trouser outputs.

3. **GSP+ access to EU-15 markets.** The EU-15 reaffirmed Pakistan's GSP+ status in 2018, providing the country with preferential access to its markets. Under the scheme, 76% of Pakistani T&A exports—including trousers—qualify for duty-free access with as much as 80% receiving preferential rates. As highlighted through the report, the EU-15 has become Pakistan's largest market for apparel products. All told, T&A products account for roughly 80% of all Pakistani exports to the EU-15 markets (EC, 2018a).

4. **High rates of domestic ownership and vertical integration.** Pakistan's low levels of FDI offer both advantages and disadvantages. On the positive side, it affords a familiarity with downstream activities such as marketing and distribution. Whereas branch plants of foreign owned companies usually only engage in assembly, Pakistan's largest exporters are vertically integrated. They also tend to focus on one product, which suggests a sophistication with specialization and scale economies that serves as an advantage. The potential of moving into design and brand development is higher than Southeast Asian competitors such as Vietnam and Cambodia, which represents a significant opportunity since markets outside the US and EU do not have established sourcing relationships with East and Southeast Asian firms (Kumar et al., 2016).

5. **Supporting environment provides industry with institutional foundation.** Pakistan has numerous institutions and organizations specific to the T&A industry. One of the most prominent is the Ministry of Textiles, which sets policies and strategies for the entire sector. There are also a range of industry associations for each stage of the chain as well as an assortment of educational institutions. While each of these groups of stakeholders have shortcomings (see Weaknesses), their presence and engagement provides a foundation that often serves as a key impediment when these groups do not exist.

6. **China-Pakistan Economic Corridor (CPEC) project could improve infrastructure**. China and Pakistan's ambitious CPEC project is slated to improve infrastructure throughout Pakistan, especially in areas that have textile capabilities. Improved roads and electricity facilities are potential benefits, and Chinese officials are reportedly interested in investing in Pakistani yarn and cloth production (Husain, 2017).

3.6.2. Constraints

Despite the country's strengths, Pakistan faces multiple challenges in the apparel industry. Some are sector-specific while others impair the country's larger economy. Most have been entrenched for a long period of time. The most pronounced are explored in the subsection below, with the weaknesses that are unique to the apparel sector presented first before the discussion moves toward weaknesses that inhibit the competitiveness of Pakistan's broader economy.

1. **Cotton production is declining, and the quality is low.** Despite its status as one of the world's largest cotton producers, the country's overall production level has been stagnant for some time, notwithstanding a dramatic plunge in 2015.[38] Beyond the productivity challenges, contamination associated with the cotton is a concern. A number of reasons for the inferior output have been observed, including a pricing system that favors weight over quality, poor seeds and antiquated picking techniques (Batool & Saeed, 2017). Additionally, the government has supported other crops such as sugarcane to a higher degree in recent years, thereby depriving farmers of extension services while also distorting economic returns associated with agricultural activities (Field Research, 2018; (Batool & Saeed, 2017). Aggregated, these factors have pushed exporters to import cotton to meet internal demand, using the higher quality raw materials from other countries to blend for

[38] The drop was the result of a variety of challenges, some of which characterized the global industry and others that were more localized (pests, floods, human capital constraints and sub-standard inputs) (USDA, 2018).

textile production that serves as an input for apparel. Although some of the sourcing from abroad is a means of accessing longer staple varieties that are unavailable domestically, the underdeveloped linkages between upstream and downstream actors serves as a constraint.

2. **Gaps in the supply chain have limited product diversity and upgrading.** Three product categories—trousers, knit shirts and sweaters/sweatshirts—accounted for 71% of Pakistan's exports in 2016. In order to achieve greater product diversity, domestic companies need increased access to a variety of inputs. Apparel companies import cotton, dyes & chemicals, accessories & trim, and elastic in significant volume. The local supply chain also does not generate polyester and other MMFs in bulk. Without access to the MMF materials, apparel exports have largely concentrated on cotton outputs, thereby running against the grain in the global industry. MMF's share of global apparel exports increased from 26% in 2005 to 35% in 2016; MMF apparel was only 9% of Pakistan's exports in 2016. Clothing made from MMF has higher unit values compared to cotton: US$7.3 per unit compared with US$5.2 in 2015.

3. **Concerns with lead times.** The global section emphasized how lead times often determine whether businesses can integrate into the supply chains of lead firms. Previous studies have grouped Pakistan with South Asia's least competitive countries in terms of lead times and reliability, primarily due to import logistics (Lopez-Acevedo & Robertson, 2016) (see Table 15 below). It should be stressed there is anecdotal evidence Pakistan's industry has made improvements in this area, reducing it down from 4-6 months to as little as 35 days (Field Research, 2018). Furthermore, interviews with stakeholders indicated that current lead times do not appear to act as a major constraint for apparel manufacturers based on the country's existing product mix, which does not rely on imported MMF materials to a significant degree.

   Although lead times associated with existing paradigm might not be disqualifying for firms supplying global buyers, if Pakistan looked to diversify its exports, they would likely emerge as a prominent issue. Delays associated with the country's complicated tariff regime could be expected to add time to shipments. Pakistan's apparel production centers are also more inland than competitors and not clustered in EPZs or SEZs. These features, combined with the country's undistinguished road infrastructure, would be likely to act as a roadblock.

Table 15: Hours to Process Import Container Through Customs

Sri Lanka	China	Vietnam	Pakistan	Bangladesh	India
130	158	170	294	327	350

Source: Lopez-Acevedo and Robertson (2016).

4. **The supporting environment is fragmented.** There are at least eight prominent industry associations with ties to Pakistan's apparel industry, with each stage of the broader T&A value chain having its own body. While the Ministry of Textiles is the organization that should provide a holistic direction for the industry, that does not appear to be its focus, instead providing resources to each stage but not an overall direction (Field Research, 2018). With the sheer number of conflicting voices, there is not a body that provides unified direction for the entire chain.

5. **Limited amounts of FDI leave parts of domestic sector disconnected from global industry.** Although there are benefits associated with the limited amount of foreign ownership, there are also costs. Pakistan ranks among the lowest recipients of FDI in the apparel industry, which deprives it of access to new markets and inputs that could facilitate product diversification. Moreover, the limited FDI deprives Pakistani firms of the ability to distinguish themselves in existing markets such as the US, which is potentially debilitating in light of the global trend toward supply chain consolidation. There are other possible benefits of FDI, including access to modern technology and skilled labor that may help local businesses refine internal processes. Table 16 presents a regional comparison on FDI, organized by countries that have the highest local ownership. Pakistan has the third highest share of national ownership (93%), trailing only Turkey and India. On the other end of the spectrum, Cambodia has the highest share of FDI (97%).

Table 16: Foreign vs. National Ownership in Apparel Factories, 2017-18

Country	National	Foreign	Joint Venture	Total Factories
Turkey	99%	1%	0%	695
India	95%	5%	0%	1,001
Pakistan	***93%***	***5%***	***2%***	***134***
South Korea	88%	11%	1%	177
Bangladesh	79%	20%	1%	579
China	79%	20%	1%	3,387
Sri Lanka	78%	17%	5%	202
Mexico	77%	21%	2%	211
Thailand	63%	34%	3%	111
Indonesia	54%	45%	1%	280
Vietnam	46%	54%	0%	628
Myanmar	14%	85%	1%	106
Cambodia	3%	97%	0%	263
Total	**78%**	**21%**	**1%**	**8,110**

Source: van Klaveren and Tijdens (2018). **Note:** Based on a database of apparel factories for 24 lead firms that included 8,110 production sites in 25 countries. While only countries with at least 100 factories were included in this table, the total line includes all locations.

6. **Skills deficiencies continue to undermine sector's potential.** The high numbers of low-skilled workers have been widely identified as a constraint to growth in Pakistan's apparel industry. The specific skills gaps often depend on geographic regions; however, an overarching characteristic is that businesses do not invest in formal training systems while government-run programs do not respond to industry needs or are not effectively implemented (Field Research, 2018; Nabi & Hamid, 2013). Key impediments include lack of coordination between the private sector and educational institutions on curriculum design and job placement, outdated training equipment and unqualified teachers (AASR, 2015). The issues exist throughout the chain, with shortages of candidates who could fill management positions at larger firms or provide leadership at SMEs for logistical and administrative challenges associated with complying with export regulations.

7. **Complicated and inefficient regimes for trade, investment, taxes and tariffs.** A reason for Pakistan's low levels of FDI is its high tariffs and complicated tax regime, which has been widely identified as an impediment to growth and integration into manufacturing and agricultural GVCs (WTO, 2015a). While many of the challenges are systemic and not

unique to apparel, the industry has been impaired by the assortment of taxes, duties and tariffs on a wide range of goods. Technically, SEZ and EPZs programs do exist, although most apparel companies that export from Pakistan are located in neither.[39] Table 17 below lists the factories located in Pakistan that have integrated into the supply chains of selected lead firms; it is instructive how few are located in SEZs or EPZs. Almost all stakeholders interviewed described the administration for these initiatives as weak or complicated (Field Research, 2018).

Table 17: European Lead Firms Sourcing from Pakistan's EPZs and SEZs

Company	Headquarters	Suppliers Operations in Pakistan's EPZs and SEZs
H&M	Sweden	29 manufacturing factories (1 in EPZ); 10 processing factories (1 EPZ)
Inditex	Spain	No information
Marks & Spencer	United Kingdom	3 factories (0 in EPZ or SEZ)
C&A	Belgium & Germany	23 factories (1 in EPZ)
Espirit	Germany	17 factories (0 in EPZ or SEZ)

Source: Richardson et al., 2017; Authors.

The country's tariff and tax programs are instead more important for apparel exporters; however, schemes such as the DDT, DLTL and DTRE are fraught with pitfalls, from complicated administrative requirements to delayed payments of refunds for tariffs on imports and other expenses (Field Research, 2018). The implications are expansive. The cost and complexity of importing synthetic fibers limits product diversification, and with the DDT and DTRE programs only providing rebates for direct exports, many businesses are discouraged from selling to local markets. Furthermore, with the complicated nature of the tariff regime and limited use of SEZs and EPZs, there is little incentive for foreign companies to establish operations in Pakistan.

8. **Infrastructure and safety remain leading concerns.** There are multiple challenges that industry stakeholders face that are beyond their control. Pakistan's infrastructure has long been a concern, with its comprehensive network or roads, ports, railways, airports and electricity ranking 110th out of 137 countries (WEF, 2017). Energy infrastructure ranked 115th in the same surveys, and officials from the country's leading apparel exporters almost universally list it as their top challenge (Field Research, 2018). With the 18th Amendment's provisions that provinces have first right to energy resources, there is sometimes geographic discrepancies to the energy challenges.[40] However, as a general rule, electricity prices threaten Pakistan's competitive position. Estimates suggest that Pakistan's knitwear manufacturers pay PKR 13 per unit for electricity compared to PKR 8-9 in Sri Lanka, India and Bangladesh, while uncertainties about its availability during production lead some buyers to view local suppliers as unreliable (Sandhu, 2018; Shaikh, 2015).

   Security is another example. The Global section of the report highlighted how political considerations can limit buyers' willingness to meet and engage with stakeholders from risk-prone markets. Pakistan's reputation and the corresponding travel advisories that have been

[39] The first EPZ established is located in Karachi and focuses on textiles with 18 garment and clothing factories; it had exports of US$358 million in 2014-15 (Richardson et al., 2017).
[40] In 2012, for instance, businesses in Punjab suffered daily outages of 8-12 hours, which raised costs for companies that could afford to buy generators while slashing production for smaller firms that could not (Shaikh, 2015).

instituted by the US government and others limit networking opportunities for Pakistan exporters. With the challenges, domestic companies must work through intermediaries or fly to nearby locations to meet with global buyers or new clients.

4. Lessons for Pakistan's Upgrading in Apparel GVC from Global Experiences

There are two pathways for upward growth in the apparel GVC. A country can pursue both simultaneously; however, the policies and skillsets needed to achieve these two paths are quite different. Table 18 below provides a summary of the individual economic upgrading trajectories.

The first pathway is focused on expanding exports, particularly in volume and higher-value goods. It most often includes both *product* and *process* upgrading, which describes the following:

- **Product upgrading:** The production of more complex products, which requires increasing the capabilities of the firm. As countries gain experience, they can move from low-cost commodities to higher value-added fashion goods that warrant higher returns as labor rates increase (e.g., progressing from basic to complex products).

- **Process upgrading:** This reduces cost and improves flexibility by improving production methods; it requires capital investment and better worker skills to operate new machinery and/or information and logistics technology.

A subcomponent of this strategy includes supply chain upgrading, which describes increasing backward linkages into textiles.

The second path is towards functional upgrading into related service industries associated with apparel, including sourcing, supply chain management, design, product development, marketing and branding. The four main stages of functional upgrading in the apparel GVC are as follows:

1. **Entry into the chain via Assembly/CMT:** This is the most basic stage of the apparel industry. As outlined in the global section, CMT manufacturers are responsible for cutting, sewing, supplying trim, and/or shipping the ready-made garment. The buyer purchases the fabric and supplies it to the manufacturer, along with detailed manufacturing specifications. The contract manufacturer has a variety of customers and does business on an order-by-order basis. Work is frequently carried out in EPZs or similar geographic areas that offer tariff reductions for export production to the buyer's country.

2. **OEM/Full Package/FOB:** The apparel manufacturer takes responsibility for all production activities, including the CMT activities, as well as finishing and distribution. The firm must have upstream logistics capabilities, including procuring and financing the necessary raw materials, piece goods, and trim needed for production. In some cases, the buyer specifies a set of textile firms from which the garment manufacturer must purchase materials; in other cases, the firm is responsible for establishing its own network of suppliers. The firm is also often responsible for downstream logistics, including packaging for delivery to the retail outlet and shipping the final product to the buyer at an agreed selling price.

3. **ODM/Full Package with Design:** This business model includes design in addition to manufacturing. A garment supplier that does full package with design carries out all steps involved in the production of a finished garment, including design, fabric purchasing, cutting,

sewing, trimming, packaging, and distribution. Typically, the supplier will organize and coordinate the design of the product; approval of samples; selection, purchasing and production of materials; completion of production; and, in some cases, delivery of the finished product to the final customer. Full package with design arrangements is common for private-label retail brands.

4. **OBM:** This is a business model that incorporates branding of products, in addition to or in lieu of design and manufacturing. Many firms in developing countries enter OBM with brand development for products sold on their domestic or neighboring country markets. While the progression from OEM to ODM to OBM is not altogether common, there are prominent examples, including countries such as Turkey.

Table 18: Selected Upgrading Trajectories in the Apparel GVC

Upgrading Trajectories	Description
CHAIN ENTRY (Assembly/CMT)	• Assembly (CMT): The focus of the supplier is on production alone; suppliers assemble inputs, following buyers' specification • Inputs—such as textiles, accessories, and packaging—may be imported due to limited availability and quality concerns over local inputs • Product focus may be relatively narrow
PRODUCT UPGRADING	• Increase unit value by producing more complex products, which requires increasing the capabilities of the firm • Countries must move from low-cost commodities to higher value-added fashion goods that warrant higher returns as labor rates increase
PROCESS UPGRADING	• Machinery: improving productivity through new capital investments • Information and Logistics Technology: improving the way the firm carries out these activities, which benefits both the firm and the chain because it reduces the total time, cost and increases the flexibility of the supply chain process
SUPPLY CHAIN UPGRADING	• Increasing forward and backward integration in production stages
END MARKET UPGRADING	• Diversifying or expanding sales to new geographic locations or types of buyers
CHAIN/ INTERSECTORAL UPGRADING	• Using the skills and knowledge acquired in apparel to move into another GVC.
FUNCTIONAL UPGRADING (Full package/ OEM)	• Firm takes on a broader range of tangible, manufacturing-related functions, such as sourcing inputs and inbound logistics, as well as production. • The supplier may also take on outbound distribution activities related to delivering the final product to the buyer's preferred destination.
FUNCTIONAL UPGRADING (Full package/ ODM)	• Supplier carries out part of the pre-production processes, such as design or product development • Design may be in collaboration with the buyer, or the buyer may attach its brand to a product designed by the supplier • In many cases, ODM firms work with designers from the lead firms to develop new products
FUNCTIONAL UPGRADING	• Supplier acquires post-production capabilities and is able to fully develop products under its brand. There are two options: (1) Supplier maintains a relationship with the buyer and develops brand collaboratively.

(Product Brand/ OBM)	(2) Supplier establishes its own distribution channels by establishing a new market channel that is typically more profitable and allows the firm to expand skills.

Source: Authors; based on Frederick and Staritz (2012)

4.1. Case Studies

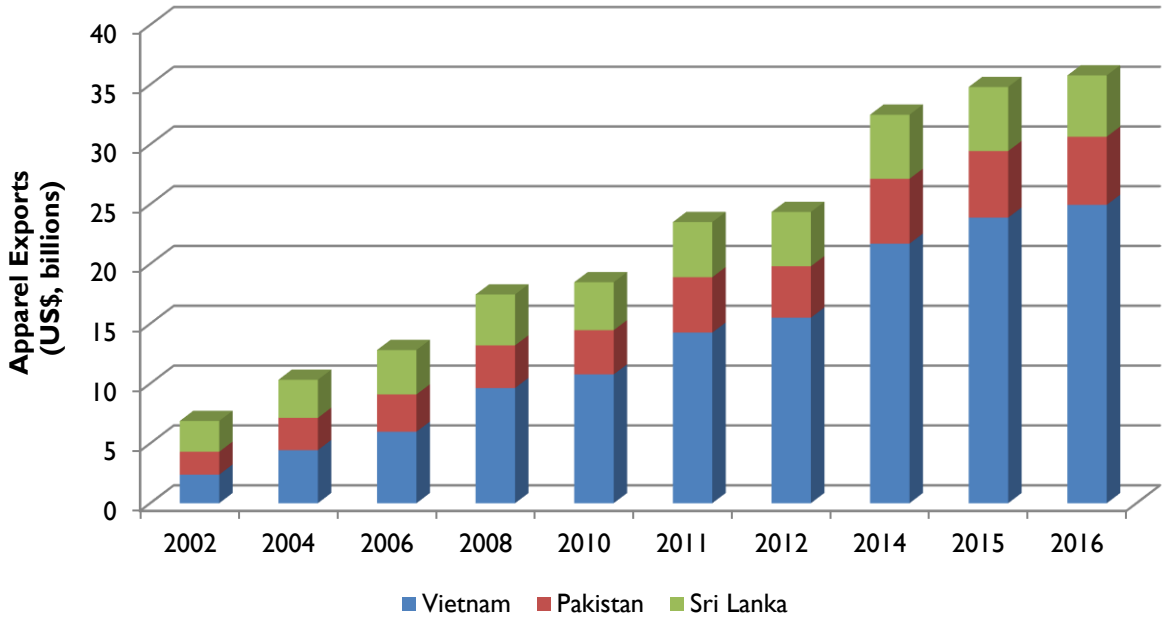
In analyzing different prospective paths for upgrading in the Pakistan apparel industry, it is useful to look more in depth at specific examples from countries that have success in the apparel GVCs with different strategies. Two cases were selected for further examination:

- **Vietnam** is an example of a country that has realized its potential in the apparel GVC. The country's labor force is roughly comparable to Pakistan's (57.4 billion for both; 1.3 million in apparel for Vietnam; 700,000-1 million in apparel for Pakistan), yet it has ascended to the position of the world's fourth leading source of apparel with US$24.9 billion in exports in 2016 (see Figure 10). Its upgrading trajectory is most closely aligned with the first path described above (product and process upgrading). FDI has played a critical role, and export activity is broad based across all product categories. Designated industrial or export zones have played an important role in Vietnam's apparel development.

- **Sri Lanka** is an example of a country that outperforms some of its baseline metrics. The country's apparel workforce and its overall GDP are both dramatically lower than Pakistan.[41] Yet the country's apparel exports are roughly on par with each other (US$5.1 billion in 2016 for Sri Lanka vs. US$5.7 billion for Pakistan). Moreover, Sri Lanka has used strategic JVs to build out its capacity in certain product niches as well as assist in the cultivating its design and branding capabilities (functional upgrading). Given Pakistan's light footprint in the broader apparel industry, it might be an approach to replicate.

[41] Sri Lanka's apparel workforce is 300,000 and its GDP was US$87 billion in 2017 compared to Pakistan's US$305 billion (Sri Lanka EDB, 2016; World Bank database).

Figure 10: Vietnam, Sri Lanka and Pakistan Apparel Exports, 2002-16



Source: Authors based on UN Comtrade (2002-2016).

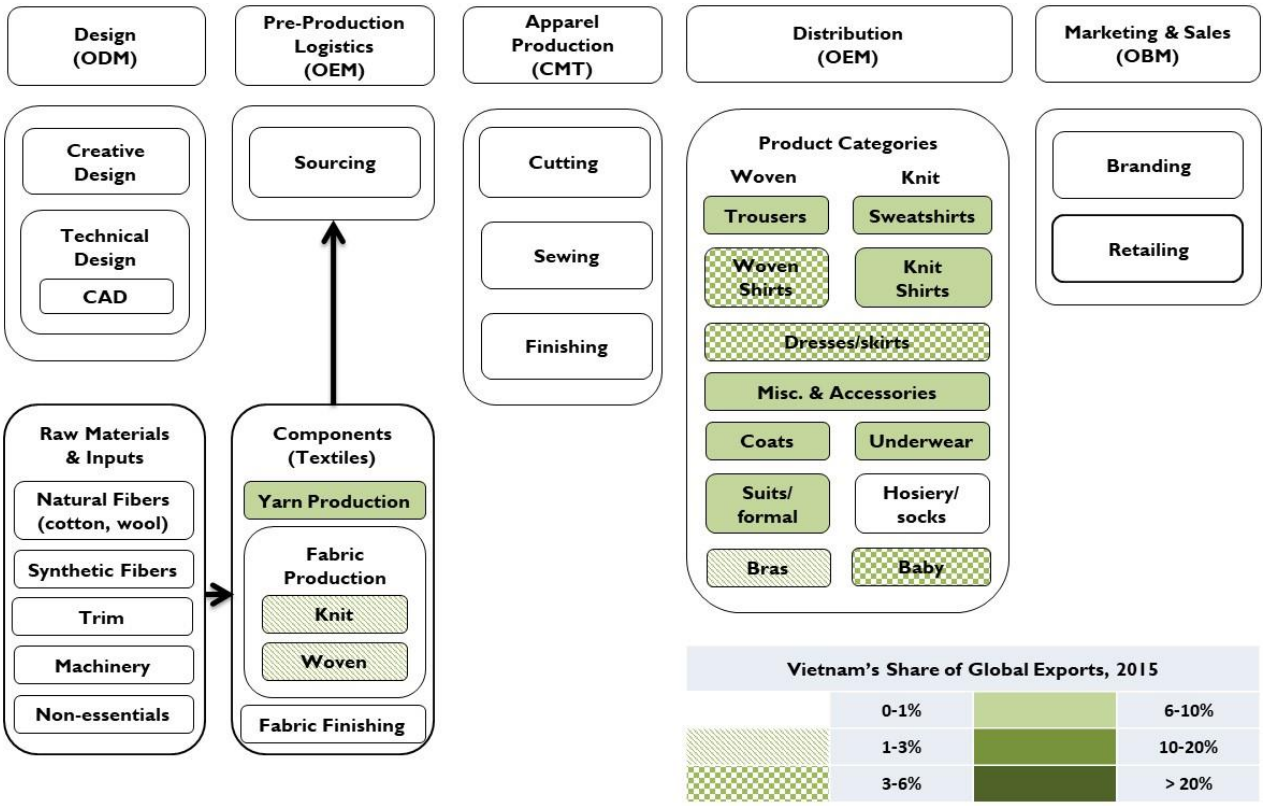
4.1.1. Vietnam

The apparel sector played a key role in Vietnam's export-led development strategy. Other labor-intensive manufacturing industries such as footwear and electronics also became important export sectors during the 1990s, but apparel always played a catalytic role. Exports have then increased at rapid rates in the 2000s. Import data from Vietnam's trading partners show an increase from less than US$6 billion in 2006 to US$24.9 billion in 2016, an annualized growth rate of 15.4%. That jump has allowed Vietnam to climb to the position of world's fourth largest apparel exporter in 2016 while its share of global exports increased from 2% to 6.6% in the same period. Overall, apparel has accounted for between 12-14% of Vietnam's total exports during that time.

The sector is also significant employment generator. Official statistics from Vietnam's General Statistics Office (GSO) report T&A employment of 1.58 million in 2015, with 85 percent of the total in apparel. Unofficial industry estimates typically state employment levels of 2 million or more workers (AFTEX, 2010; Better Work Vietnam, 2011; Saheed, 2012). Collectively the industries accounted for 25% of manufacturing employment in 2015 (GSO Vietnam, 2014b).

A notable feature of Vietnam's growth is that it has been comprehensive across product categories. Vietnam's CAGR between 2005 and 2015 was greater than the world average in every area. Its share is the highest for coats (11% in 2015), but there are six other areas where it has at least 6% share. Figure 11 below presents Vietnam's participation in the apparel GVC.

Figure 11: Vietnam in the Apparel GVC



Source: Authors.

Overall, Vietnam is not necessarily the most cost competitive country, but it is the closest country to matching China in terms of overall capabilities. China and Vietnam both perform better than expected when analyzing the unit values of exports alone. Vietnam's rank by unit value varies across product categories, but it delivers in all other areas important to global buyers when choosing a sourcing partner as the first or second-ranked country. China and Vietnam's ability to deliver in all non-cost related factors important to buyers is a key reason they have been able to continue export growth despite higher unit values (Frederick, 2016).

Upgrading and Importance of FDI in Vietnam's Apparel Industry

Vietnam's upgrading in the apparel GVC has mostly followed the path of increasing exports and backward linkages into textile production. Between 2005 and 2013, Vietnam's average unit value for items increased from US$5.7 per item to US$5.9. The three subsectors in which Vietnam holds the most significant share of world exports are also those in which the country has unit values above the global average (coats, miscellaneous apparel and athletic wear).

A critical feature of Vietnam's apparel industry is the high volume of inflowing FDI. There are three types of firms in the country: state-owned enterprises (SOEs); domestically-owned private firms; and foreign-owned firms (including 100% foreign ownership and joint ventures). SOEs can be entirely funded with national or local capital, or joint stock companies (JSC) with over 50% state capital. Private domestic firms may operate as JSCs or private limited companies or collectives.

FDI in Vietnam's T&A industry was approximately US$4.4 billion from 2000 to 2011, accounting for around 9% of total FDI during that time (see Table 19 below). While domestic private firms historically have accounted for the largest numbers of companies, FDI enterprises generate most exports. Firm-level apparel export data by apparel firms in 2015 indicates that two-thirds of exports were by foreign-owned firms.

Table 19: Vietnam FDI, Total and T&C, 2000-11

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2000-11
FDI Total*	1.3	1.3	1.4	1.4	1.6	1.9	2.4	6.9	9.6	7.6	8.0	7.5	51.1
T&A FDI	111	236	406	386	201	426	617	689	530	185	169	450	4,408
T&A FDI Projects	40	74	149	121	71	109	127	148	111	63	72	80	1,165
T&A Share	**9%**	**18%**	**29%**	**27%**	**13%**	**22%**	**26%**	**10%**	**6%**	**2%**	**2%**	**6%**	**9%**
Average Value	**2.8**	**3.2**	**2.7**	**3.2**	**2.8**	**3.9**	**4.9**	**4.7**	**4.8**	**2.9**	**2.4**	**5.6**	**3.7**

Sources: Frederick (2017). * = US$, billions. All other currencies in US$ millions.

Ownership is dominated by South Korean and Taiwanese firms, with Hong Kong and Japanese businesses also active to a lesser extent. Foreign firms have entered JVs with SOEs and later increasingly set up 100% foreign-owned subsidiaries, which are focused almost exclusively on exports (Huy et al., 2001; Schaumburg-Muller, 2009). Other notable characteristics of FDI firms are its high rate of women employees (67% in 2011 for foreign-owned, compared to 31 and 37 percent for state and non-state) and higher pay than non-state domestic enterprises but less than state-owned (GSO Vietnam, 2014a).

Foreign-owned firms are MNCs that operate in "closed" networks, with raw materials imported from global supply networks and sales coordinated from headquarter locations abroad. Nearly all export-oriented domestic firms are partially-owned by the Vietnam Textile and Garment Group (Vinatex), the former SOE that is now only partially owned by the government. Vinatex has approximately 120 companies in which it either (a) owns entirely, (b) holds partial ownership through JSC arrangements (c) is a partial owner through JVs agreements.

Supportive Policies for FDI

Vietnam has used different strategies to encourage investments. Vinatex played a key role, with its arrangements attracting foreign companies. The Ministry of Planning and Investment (MPI) is the government agency that coordinates specific policies related to FDI, including manufacturing zones that fall under three broad categories: Industrial Zones (IZs); Economic Zones (EZs); and EPZs. IZs and EPZs play an especially important role in attracting investments in Vietnam. Foreign capital is encouraged to locate in these areas through infrastructure and services such as electricity, water and communications.

There are specific benefits associated with each. Industrial zones are designated geographic areas where the manufacture of products occurs. Projects located in the zone receive tax benefits such as 10% corporate income tax rates compared to 20% for other businesses as well exemptions and reductions for 4-9 years (Dezan Shira & Associates, 2013). EPZs are IZs that generate export products. They also receive tax incentives and benefits such as reduced land prices and reduced regulatory oversight. Critically, businesses in EPZs are exempted from tariffs on imports of inputs

provided they are re-exported as apparel products within 90-120 days. They also do not pay export taxes.

Both IZs and SEZs have been used as an industry policy tool to promote inter-enterprise linkages. Several IZs have been planned to create industrial clusters such as T&A industry in Binh Duong and T&A IZs in Hung Yen. The project in Binh Duong featured a US$760 million investment by a Taiwanese company for textile dyeing and chemical fiber facilities (VIR, 2016). Other investments associated with the project included US$274 million yarn facilities.

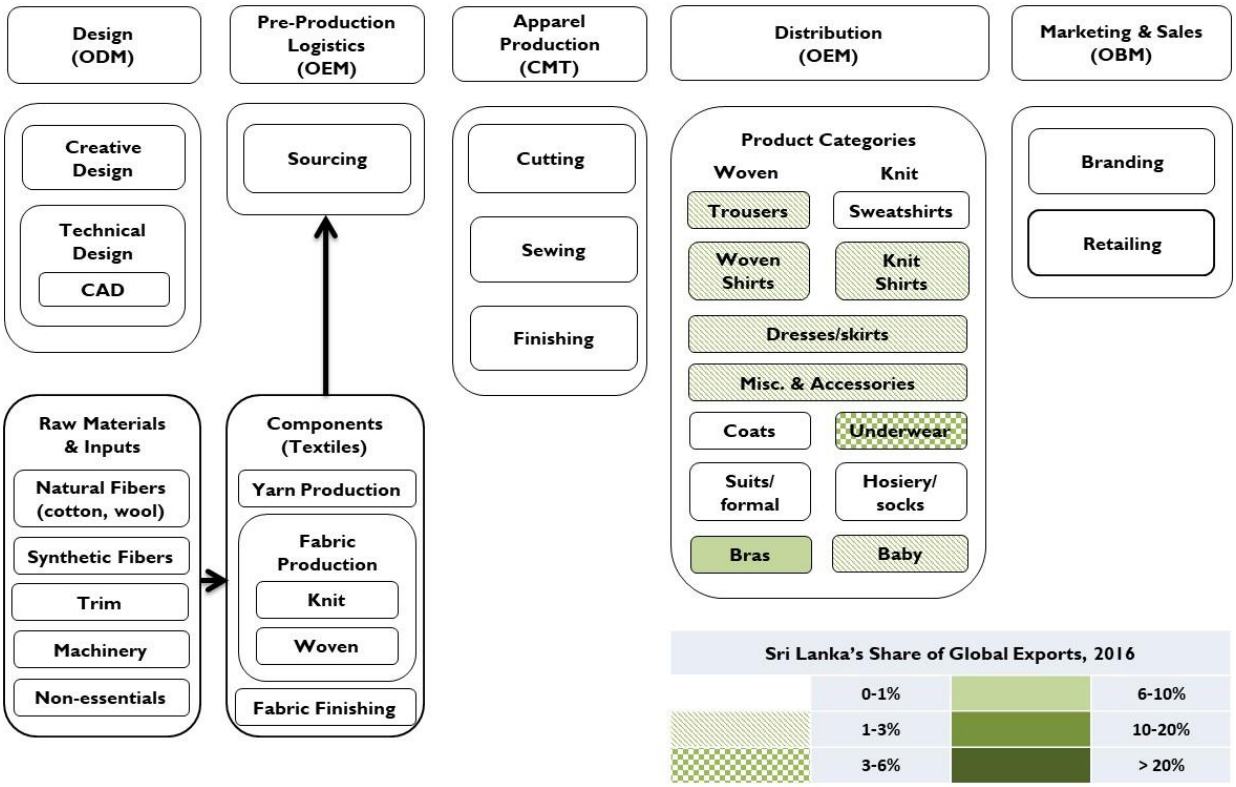
Whereas EPZ/IZs policies provide exporters with tariff and tax exemptions, Vietnam's trade agreements offer preferential access to many markets. Vietnam has enjoyed duty-free market access to Japan since 2009 through the Vietnam-Japan EPA. For the EU market, Vietnam had GSP status, which traditionally reduced tariffs on exports from Vietnam export to the EU to 9.6% on average. In the wake of the US withdrawal from the Trans-Pacific Partnership,[42] Vietnam's government has agreed with the EU on the EU-Vietnam Free Trade Agreement (EVFTA). When it is finalized, tariffs on apparel exports to the EU will be reduced to zero (Fibre2Fashion, 2018).

4.1.2. Sri Lanka

The export-oriented apparel sector has been the main source of growth of exports and formal employment for the last three decades in Sri Lanka. The industry contributes about 40% of total industrial production and directly employs around 300,000 people (Sri Lanka Export Development Board, 2016), which accounts for around 14% of the industrial labor force and 21% of the manufacturing labor force. Indirectly, more than 1.2 million people are dependent on the sector. Sri Lanka's apparel exports were US$5.1 billion in 2016. The annual growth rate for the period from 2006 to 2016 eclipsed the global average (3.3% for Sri Lanka vs. 2.3% for the world). But while Vietnam is an example of a country that has increased its capabilities across almost all product categories and materials, Sri Lanka is more like Pakistan in that focuses on specific niches (see Figure 12 below).

[42] Vietnam's apparel exports to the US—its most important export market—face MFN tariffs.

Figure 12: Sri Lanka in the Apparel GVC



Source: Authors.

Intimate apparel (bras) and underwear/pajamas are the most prominent examples. Sri Lanka's exports in the bras HS category rose from US$200 million in 2006 to US$600 million in 2016, an overall increase of 200% that helped push the country's global share in the category from 2.9% to 6%. Underwear and pajamas—a related product category that features similar materials and companies active in the supply chains—followed a similar trajectory, jumping from US$531 million in 2006 to US$925 million in 2016. Sri Lanka now controls almost 5% of global export market share in that product category. Otherwise, the country has a relatively light market share in other goods, with accessories (2.5%) and baby apparel having the largest presence (2.2%). These are all the HS codes where Sri Lanka's growth has concentrated in the most recent decade where trade data is available.

Process upgrading is something of a prerequisite to be competitive in intimate apparel. The production of bras and swimwear, in particular, are complicated and demand a certain level of skill from suppliers. As a result, there is a degree of stability in the relationship between lead firms and their key suppliers, and the global competition is less cost sensitive. Outputs in these categories have also facilitated a degree of end market diversification. While the US and the EU-15 still receive 78% of Sri Lanka's apparel exports, the share going to other countries increasing from 6% in 2006 to 22% in 2016. China, Russia and Australia have had the largest growth. Table 20 below provides a synopsis of the critical background data associated with Sri Lanka's apparel industry.

Table 20: Sri Lanka's Apparel Exports to the World

	Value (US$, Billions)						Share of Apparel Exports			Change
	2006	2008	2010	2012	2014	2016	2006	2012	2016	2006-16
Trousers	1.0	1.1	1.0	1.1	1.2	1.1	26%	25%	21%	13%
Underwear, Pajamas	0.5	0.6	0.6	0.7	0.9	0.9	14%	15%	18%	74%
Intimate Apparel (Bras)	0.2	0.3	0.4	0.5	0.6	0.6	7%	10%	13%	169%
Knit Shirts	0.5	0.6	0.5	0.5	0.6	0.6	12%	11%	11%	23%
Woven Shirts	0.3	0.3	0.3	0.3	0.4	0.4	7%	7%	7%	33%
Accessories	0.1	0.2	0.2	0.3	0.3	0.3	4%	6%	7%	129%
Sweaters	0.3	0.4	0.3	0.3	0.3	0.3	9%	6%	6%	-3%
Dresses & Skirts	0.2	0.3	0.3	0.3	0.3	0.3	6%	7%	5%	16%
Baby	0.1	0.1	0.1	0.2	0.2	0.2	3%	4%	4%	97%
Athletic	0.1	0.1	0.1	0.1	0.2	0.2	3%	3%	3%	62%
Misc. Apparel	0.1	0.0	0.0	0.1	0.1	0.1	1%	1%	2%	92%
Coats	0.2	0.1	0.1	0.1	0.1	0.1	4%	2%	2%	-47%
Suits/Formalwear	0.1	0.1	0.05	0.05	0.04	0.04	2%	1%	1%	-48%
Hosiery & Socks	0.03	0.04	0.03	0.03	0.03	0.02	1%	1%	0.4%	-33%
Total	**3.7**	**4.3**	**4.0**	**4.5**	**5.4**	**5.1**				**39%**
By Fabric										
Knit (HS61)	1.7	2.2	2.1	2.4	3.0	3.0	47%	53%	59%	73%
Woven (HS62)	2.0	2.1	1.9	2.2	2.3	2.1	53%	47%	41%	8%
Top Five Export Destinations										
USA	1.8	1.6	1.2	1.6	1.9	2.1	48%	35%	40%	15%
EU-15	1.7	2.3	2.2	2.1	2.3	2.0	46%	46%	38%	14%
Russia	0.01	0.03	0.04	0.10	0.12	0.09	0%	2%	2%	625%
China	0.00	0.01	0.01	0.02	0.05	0.09	0%	1%	2%	3403%
Australia	0.01	0.01	0.01	0.03	0.05	0.06	0%	1%	1%	597%

Source: UN Comtrade (2002-2016b)

The role of JVs in Sri Lanka's Apparel Industry

Just as in Vietnam, FDI played a central role in Sri Lanka's upgrading in the apparel industry. There are, however, points of differentiation between the two countries. Specifically, Sri Lanka's gains are primarily the result of JVs between global buyers and large local firms—not direct investment, as in Vietnam. Most partnerships involved buyers that provided access to important markets as well as technology and knowledge transfers.

Two of the larger Sri Lankan firms include MAS Holding and Brandix Lanka. Both are engaged in a variety of JVs. Brandix started in 1972 with the production of casual wear, largely woven bottoms. As part of its development, the company purchased several local firms and engaged in JVs with foreign and local firms. The company entered into at least eight JVs between 1990-2009, pursuing partnerships in the US, Hong Kong and the United Kingdom to expand supply chain linkages. Brandix has been the key domestic investor in the opening of apparel sundries plants in Sri Lanka for thread, buttons, hangers, elastic, and dyeing. The company has also spent money on knit and woven fabric facilities to meet part of its own demand as well as for external customers.[43]

[43] In 2018, Brandix's website said it was a US$750 million business that employs 48,000 people and has 42 production facilities in Sri Lanka, India and Bangladesh.

MAS Holdings started in 1987 and is Sri Lanka's largest intimate apparel manufacturer. JVs have provided the company with critical advantages, including the following: 1) access to major brands and retailers such as Limited and M&S, Bhs, and Next; and 2) world-class apparel manufacturing technology (Barrie 2004). MAS Holdings also has JVs in other countries: India (Intimate Fashions), Maldives (Linea Clothing), Madagascar (Cottonline) and Vietnam (Fashionline). The intimate division produces for buyers such as Victoria's Secret, Gap, Marks & Spencer and Nike (the largest four buyers). The active division produces for buyers such as Nike, Speedo, Adidas, Reebok, Ann Taylor and Columbia and involves mostly swimwear.[44]

The JVs have also indirectly led to other companies building facilities in Sri Lanka. MAS Holdings' expertise in intimate apparel products can be traced to the JV with MAST Industries, which is the US-based sourcing arm for Limited Brands (IFC, 2007). That specialization allowed the company to enter Victoria's Secret supply chain, which is also owned by The Limited. Over time, Victoria's Secret has asked some of their raw material providers to relocate to Sri Lanka, including suppliers of various components that go into making bras and underwear, like lace and pads and also warp knit fabric (just-style.com, 2006).

Advanced Forms of Upgrading in Sri Lanka's Apparel GVC

MAS and Brandix have both helped Sri Lanka's apparel sector move into to higher value products. Lingerie is one example, with the product upgrading driven by the JV arrangements described above. A JV between MAST, MAS and Triumph was instrumental in starting the lingerie business in Sri Lanka in the end of the 1980s/beginning of the 1990s. Unit value analysis shows that Sri Lanka's apparel exports have traditionally had higher unit values than other Asian apparel exporter countries, highlighting some of the country's product upgrades (Tewari, 2008).

While technology levels vary across the sector, the large manufacturers have invested in new technology and workforce development (JAAF, 2002). The Joint Apparel Association Forum launched the Productivity Improvement Program (PIP) in 2004 in the context of the Five-Year Strategy to reduce waste, provide leaner organizations and increase productivity in factories. The large manufacturers in Sri Lanka have been engaged in implementing lean manufacturing methods in their production processes to reduce wastage and lead times and lower production costs. The largest manufacturers have also invested in supply chain enabling technologies such as enterprise resource planning (ERP) systems as the efficient management of supply chains has become increasingly important in the apparel sector (Wijayasiri & Dissanayake, 2008).

More recently, the three largest manufacturers have started to invest into environmentally compliant facilities due to growing concerns regarding the environmental impact of industries and pressure from buyers to adhere to environment-friendly standards. MAS, Brandix and Hirdaramani invested in "green factories" which ensures that environmental impacts are minimized, especially through the reduction of energy and water consumption.[45]

There have also been clear steps toward functional upgrading. An important part of the apparel sector in Sri Lanka today provides full manufacturing services offering input sourcing and at least an understanding of ODM activities. These efforts were driven by large manufactures such as Brandix

[44] In 2018, MAS was a US$1.8 billion business, employs 44,000 people and has over 42 production facilities.

[45] UNIDO recommended Brandix's 'green apparel factory' as a model of sustainable production to manufacturers around the world. The 130,000 square-foot Brandix Eco Centre is the Group's lead manufacturing plant for Marks & Spencer and has been rated Platinum under the Leadership in Energy and Environmental Design (LEED) Green Building Rating System of the US Green Building Council (USGBC) (just-style.com, 2010).

and MAS that started in the early 1990s to increase their capabilities and develop broader services. They established their own design centers with in-house staff that worked closely with the design teams of brand owners. MAS has since established design studios in the UK, the US and Hong Kong to offer design solutions to its main customers Victoria Secret, Gap and Speedo. Brandix has not opened design centers abroad but marketing offices in New York and London to improve links with buyers (Wijayasiri & Dissanayake, 2008).

Some large manufacturers have also established their own brands to move into the OBM segment. MAS developed a range of intimate wear under the brand Amante in 2007, which was a significant innovation as Sri Lanka's apparel industry did not have any brands until that point. Amante was first introduced in Bangalore, Chennai and Hyderabad, but it hopes to expand across India and to the rest of South Asia with further potential in the Middle East. The brand caters to the middle and upper income class and competes with international brands such as Triumph, Etam and La Senza (Wijayasiri & Dissanayake, 2008).

Holistic Government Policies to Attract JVs and FDI

The prevalence of JVs in Sri Lanka's apparel industry can be partially attributed to holistic efforts by the Sri Lankan government and Board of Investment to make the country attractive to outside investors. Beginning with the 200 Garment Factory Programme, which was initiated in 1992 and has been hailed as being a "turning point" for Sri Lanka's apparel industry (Kelegama & Wijayasiri, 2004),[46] the government has attempted to nurture the sector through a comprehensive set of policies designed to make Sri Lanka appealing.[47] Some of the more notable strategies that have been employed include the following:

- **Tax concessions among other fiscal incentives.** Sri Lanka offers a range of fiscal incentives to exporters, including concessions with income taxes, National Building taxes, the Ports and Airports Development Levy and VAT exemptions (WTO, 2016). While many of those benefits are available to all firms, the apparel has lower threshold for some incentives (WTO, 2016). Depending on the size of investments, large enterprises can receive tax holidays and incentives for between 6-12 years.

- **One-stop customs shops helps reduce wait times.** The number of hours it takes Sri Lankan customs to process imports are among the lowest in the region (see Table 15 above). As part of its strategy to encourage investment, Sri Lanka's EPZs offer customs facilities to simplify customs processes. There are 13 EPZs in the country, including two dedicated entirely to apparel manufacturing (WTO, 2016).

- **Duty-free imports of inputs and capital goods.** All imports of textile materials, yarn, and related intermediate and capital goods required for the garment export industry are free of import duty (US Commercial Service, 2017). Table 21 below presents the import tariffs for Sri Lanka, Pakistan and other countries in the region.

[46] The 200 Garment Factory Program set the goal of establishing 200 apparel factories in rural areas to help stimulate Sri Lanka's economic development. It has been credited for increasing female participation in the sector (**social upgrading**). It also showed that female workers benefit from working in factories located close to their villages (Kumar et al., 2016).

[47] It should be noted that not all have succeeded. The WTO noted that the incentive regime was complex and somewhat overlapping, and seems to have fallen short of the goals of expanding the industrial base, both product- and region-wise" (WTO, 2010).

Table 21: Import Tariffs for Inputs in Asian Apparel Industries

Product Category	Sri Lanka	Pakistan	India	Bangladesh	Cambodia	China	Vietnam
Yarn							
Cotton	0%	5-25%	10%	5-10%	0%	5-6%	5%
MMF	0%	0-10%	10%	5-25%	0%	5%	0-5%
Woven Fabric							
Cotton	0%	15-25%	10%	25%	7%	10-14%	12%
MMF	0-15%	15%	10-12.5%	25%	7%	10-18%	12%
Knit Fabric	0%	20-25%	10%	25%	7%	10-12%	12%
MFN Avg. Duties (Textiles)	3.5%	16.6%	12.2%	19.4%	5.5%	9.6%	9.6%

Source: Kumar et al. (2016).

There are other ways the government has boosted the sector, including infrastructure. Sri Lanka's railroad, port and road infrastructure all rank between 55th and 61st in the world (WEF, 2017). In recent years, the government has made improvements to ports in Colombo and Hambanthota, which is on the southern tip of the island. The Hambanthota is a US$1.12 billion project that is part of China's One Belt, One Road Initiative (Sri Lanka EDB, 2018).

4.2. Key Lessons for Pakistan

Vietnam and Sri Lanka both offer lessons for Pakistan as it looks to increase growth in the apparel GVC. While both countries have pursued foreign investment to drive product and process upgrading in the sector, there are nuances that are worth accentuating. These include the following:

- **Vietnam's** growth in the apparel sector over the last 15 years has been dramatic. With annual growth of 15.4% in the period from 2006 to 2016, it has solidified its position as the world's fourth-leading apparel exporter. Significantly, Vietnam's expansion has been broad-based across product categories. Strong backward linkages have provided access to key inputs that support diverse manufacturing activities. Foreign companies generally locate in designated industrial or export zones. These are active components of the government's strategies for attracting investors.

- **Sri Lanka's** participation in the apparel GVC exceeds expectations based on population and GDP figures. Growth in the sector centers on a narrow range of products, including intimate apparel (pajamas, bras and swimwear). JVs between the some of the country's largest manufacturers and global buyers have been common. Foreign companies are willing to locate in Sri Lanka because of a comprehensive suite of strategies enacted by the government, including infrastructure investments, tax concessions, duty-free imports and one-stop customs shop. The supportive environment has helped Sri Lanka initiate more complicated upgrading activities, including functional, environmental and social.

5. Proposed Upgrading Trajectories for Pakistan Apparel GVC

Pakistan has had some moderate success pursuing upgrading in the apparel GVC. The advances that can be quantified the most easily include **product upgrading** within the trouser category—denim manufacturers have moved into the supply chains of leading global brands such as Levi's, and the unit value associated with Pakistan trouser exports increased 48% in the period from 2005 to 2016—**process upgrading** within the entire sector—interviews conducted for this report

indicated that many firms have reduced lead times from 4-6 months to as little as 35 days—and **social upgrading** with the increase of female workers—the average annual growth rate for women's employment from 2010 to 2015 was 10% (Huynh, 2017). However, all these advances come with caveats; since women's participation in the apparel sector is still among the lowest in the world, there are hesitations to even label the gains as social upgrading.

There are plausible paths to generate increasing returns in the form of higher exports and employment opportunities. With its strengths—an integrated industry with high domestic ownership located in a country with a long history of producing cotton and relatively competitive labor prices—there are multiple options. The following section outlines the potential upgrading trajectories. It is loosely ordered by time horizon and complexity.

In terms of greatest likelihood of success, Duke GVCC believes that Pakistan solidifying its position in existing products (the first upgrading trajectory) is the most straight-forward. The Sri Lanka case study highlighted countries in similar positions in the chain who have excelled by concentrating on a narrow sub-set of outputs. If, however, it is a priority for Pakistani stakeholders to increase exports across the board (like Vietnam), then it can pursue steps that will lead to product diversification. Both the long-range trajectories would require sustained vision and implementation strategies. In terms of probability, Pakistan could likely expect results in pursuing increased social upgrading, especially since it is starting at a low base.

1. **Short- to medium-term product and process upgrading to solidify position in existing product categories.** Pakistan's largest category of apparel exports are trousers. Led by a strong cluster of denim manufacturers that have integrated into the supply chains of companies such as Levi's and others, Pakistan is the sixth largest individual trouser exporter in the world, seventh if one considers the EU-15 as one bloc. While Pakistan's annual growth rate in export value in trousers was 11.6% from 2006 to 2016, its global market share (4% by value, 3% by volume) indicates there is still room to grow. To sell more jeans and trousers and other product categories where Pakistan has a presence, stakeholders can concentrate on steps that increase direct connections with buyers. Human capital should also be a focus to increase awareness of fashion trends and brand awareness. Foreign investment would likely be a critical enabling factor. The case study on Sri Lanka offer examples on how it created investment environments that were attractive to global apparel companies and build its presence in intimate apparel.

2. **Short- to medium-term product upgrading (diversification) by increasing backward linkages in supply chain.** A defining feature of Pakistan's apparel industry is the limited expanse of export products by type and material. The result is 71% of the country's exports are concentrated in three product categories: trousers, sweaters/sweatshirts and knit shirts. Gaps in the supply chain with respect to MMF materials is a major reason for this specialization. Pakistan imported US$1.55 billion of MMF fabric, yarn and fibers in 2016. The "Backward Linkages" section of this report detailed other prominent import categories, including cotton, labels, trim and accessories.

   There is certainly reason to emphasize diversification. As detailed in the Global section, buyers are consolidating their supply base and looking for capable Tier I suppliers that can produce a broad range of products to reduce complexity and costs. Pursuit of this upgrading strategy would involve some of the same steps as solidifying positions in individual

products; however, the country's complicated tariff regime should be a focus more so than stabilizing cotton production. FDI attraction can also target specific supply chain gaps, with trim and accessories manufacturers necessary to expand product diversity.

3. **Medium- to long-term functional upgrading by moving into OBM & ODM activities such as design and branding.** Because Pakistani firms are domestically owned and vertically integrated, the potential of moving into design and brand development is much higher than Southeast Asian competitors. In countries such as Vietnam where there are high rates of foreign ownership, the subsidiaries tend to cater to the needs of headquarters. That, in turn, limits the potential for functional upgrading in the country where manufacturing is located since higher-value activities often remain with the overseas headquarters. Strategic JVs in Sri Lanka have allowed major companies in that country—MAS and Brandix—to master skills that have supported moves into branding and design activities. With FDI dynamics less of a factor in the local industry, Pakistan could potentially engage in downstream activities such as design and branding, especially for regional countries where there has been less market penetration by leading global brands.

4. **Medium- to long-term social upgrading by increasing share of women workers in the sector.** As highlighted, the share of women workers in Pakistan's T&A industry (36%) is lower than most peer countries, save for India. There is a myriad of reasons for the low female participation, including cultural norms, poor public transportation and inadequate child care options. While the situation is evolving, with programs sponsored by international aid organizations playing a prominent role, Pakistan's low numbers of female workers is an opportunity to attract additional donor support. That could provide benefits for the sector, including increased productivity, and for the country as a whole, including poverty reduction and health and education outcomes.[48]

   In countries such as Bangladesh and Cambodia where women already account for 80% or more of the apparel workforce, firms are (1) less likely to let workers miss work to advance skills, (2) families are unable to let women stop working for 3-6 months to attend training courses because they are dependent on female wages, and (3) international organizations are not as abundant in countries that already have high female participation rates. Donors are often keen on increasing female participation and are willing to provide funding for training programs to support such efforts. Pakistan's domestic ownership could also prove advantageous since local management, if lobbied, would have the power to attempt to increase female labor force participation.

[48] For an in-depth look at the benefits associated with women's participation in the T&A workforce, see chapter 4 of (Lopez-Acevedo and Robertson (2016).

6. Appendix

Table A-1: Worldwide Cotton Production and Exports, 2014-17

Country	Volume (480-pound bales, 1000s)			Share		
	2014/15	2015/16	2016/17	2014/15	2015/16	2016/17
Top Five Producers (Ranked by 2016/17)						
India	29,500	25,900	27,000	25%	27%	25%
China	30,000	22,000	22,750	25%	23%	21%
United States	16,319	12,888	17,170	14%	13%	16%
Pakistan	10,600	7,000	7,700	9%	7%	7%
Brazil	7,180	5,920	7,020	6%	6%	7%
Top Five Exporters (Ranked by 2016/17)						
United States	11,246	9,153	14,917	32%	26%	40%
India	4,199	5,764	4,550	12%	17%	12%
Australia	2,404	2,828	3,727	7%	8%	10%
Brazil	3,910	4,314	2,789	11%	12%	7%
Uzbekistan	2,600	2,200	1,750	7%	6%	5%

Source: USDA FAS (2018). Note: Each year of production data is from growing seasons that begin each August.

Table A-2: Top 10 Apparel Importers by Year and Value, 2008-16

Partner	Value (US$, billions)					World Share				
	2008	2010	2012	2014	2016	2008	2010	2012	2014	2016
EU-15	153	143	144	165	152	45%	43%	39%	41%	40%
United States	76	73	81	86	84	22%	22%	22%	21%	22%
Japan	24	25	32	29	26	7%	8%	9%	7%	7%
Hong Kong	18	16	15	15	12	5%	5%	4%	4%	3%
Canada	7	8	9	9	9	2%	2%	2%	2%	2%
Rep. of Korea	4	4	5	8	8	1%	1%	2%	2%	2%
China	2	2	4	5	6	1%	1%	1%	1%	2%
Australia	3	3	4	5	6	1%	1%	1%	2%	2%
Switzerland	5	4	5	5	6	1%	2%	1%	1%	1%
Poland	—	—	—	—	6	—	—	—	—	1%
Russia	4	5	8	7	—	1%	2%	2%	2%	—
Top 5	**278**	**264**	**280**	**304**	**284**	**81%**	**80%**	**77%**	**76%**	**75%**

Source: UN Comtrade. **Note:** HS02, 61+62 codes. (—) indicates a country was not in Top 10 in given year.

Table A-3: Apparel Lead Firm Types and Examples

Lead Firm Types and Sub-Types			Description	Examples	
				US	EU
Retailers	**Mixed Retailers/ Mass Merchants**	Hypermarkets, Discount stores	Like department stores, but sell a wider variety of products; rather than private-label, the term "store brand" may be used	Walmart, Target, Kmart	Asda (Walmart), Tesco, Carrefour, Metro
		Department stores	Carry private label, exclusive, or licensed brands only available in the retailers' stores	Sears, Macy's, JC Penney, Dillard's, Kohl's	Marks & Spencer, Karstadt, El Corte Ingles, Harrod's, Debenhams
	Specialty Retailers	Specialty stores	Specialty stores that carry a mix of brand types, including private, exclusive and others	REI, Dick's Sporting Goods	
		Specialty Apparel Stores (Private Label)	Retailer develops & owns private label brands only available in stores	Gap, American Eagle, Abercrombie & Fitch	H&M, Mango, New Look, NEXT, C&A, TopShop
Non-Retailers	**Brand owner**	Brand marketer	Firm owns brand name, but not manufacturing; products are sold at mass merchant stores and often through specialty store.	PVH, Ralph Lauren, Carter's, Nike, Levi's	Espirit, Adidas, Hugo Boss
		Brand manufacturer	Firm owns brand name and manufacturing; more likely to coordinate supply of intermediate inputs	VF, Hanesbrands	Inditex (Zara)

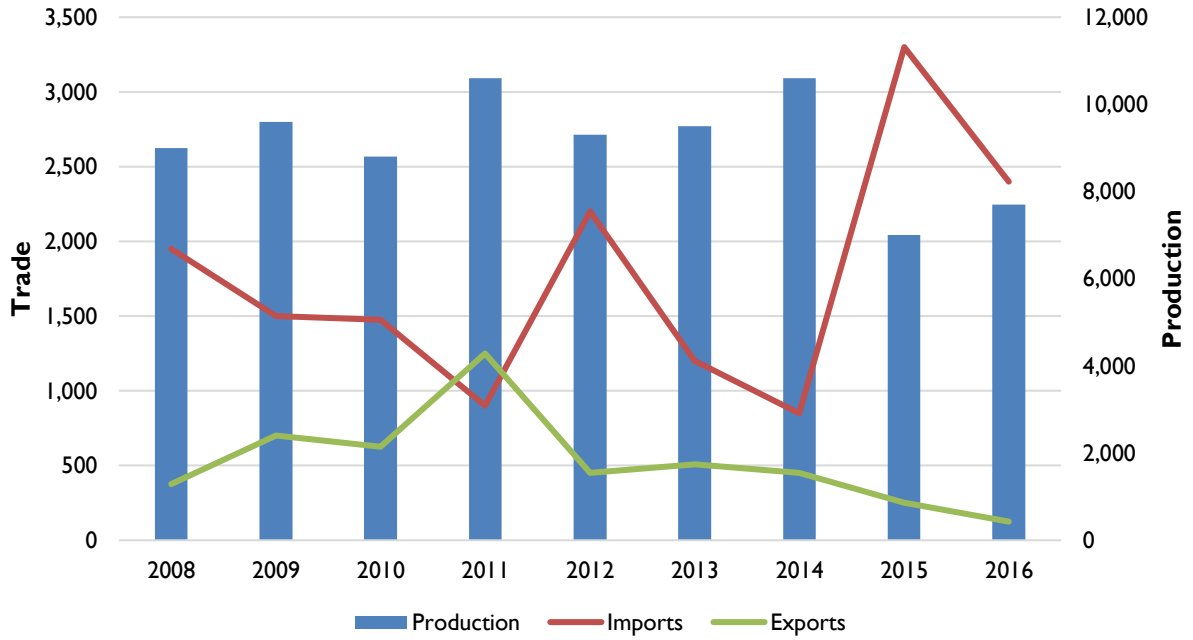
Source: Frederick, 2015.

Table A-4: Selected Apparel-Related Private Labor Standards and Organizations

Name	Members	Funding Model	Scope	Est.	Certified Factories
Global					
Fair Labor Association Workplace	Yes: Buyers, Suppliers, Colleges, Civil Societies	Membership Fees (Annual)	Multi-industry, majority apparel	1999/ 2001	44 companies; 21 suppliers (2013)
Worldwide Responsible Accredited Production (WRAP)	No	Application Fees; Auditor Fees	Multi-industry; majority apparel	2000	1,826 (2013); China (33%), India, BNG, Vietnam (~10% each)
SAI 8000	Yes: Corporate Members	Certification Fees; Donations	Multi-industry; ~25% apparel	1997	3,388/892 (Total/T&A; 2014, June); India (55%); China (21%) of T&A
Regional/National					
Fair Wear Foundation	Yes: EU Buyers (80)	Government, Membership Fees, NGOs	Apparel	1999/ 2001	15 production countries
ILO/IFC Better Work Programs	Buyer Partners (28)	Membership Fees (Annual) + Cost per Factory/Year	Apparel		
	39 (2014)	GMAC, Cambodia Gov., US DOL		2001	Cambodia: 500 factories (government mandatory)
	28 (2013)	US DOL; Jordan MOL		2008	Jordan: 60 factories (government mandatory)
	—	US DOL		2009	Haiti: 29 (all government mandatory)
	43 (2014)	SECO, Irish Aid, NL MOFA, Service Canada		2009	Vietnam: 200 factories
	7 (2014)	US DOL		2010	Lesotho: 23 factories
	9 (2013)	US DOL		2011	Nicaragua: 23 factories
	18 (2014)	NL MOFA, SECO		2011	Indonesia: 100 factories
	—	US DOL, SECO, NL MOFA, Service Canada, DFID, Travail		2014	Bangladesh: n/a
Advocacy Groups/Initiatives					
Clean Clothes Campaign (CCC)	Yes: EU: trade unions, NGOs	Government & Private	Apparel	1989	

Source: Frederick (2015).

Figure A-1: Pakistan's Raw Cotton Production, Imports and Exports, 2008-16



Source: USDA Annual Reports. **Note:** Both trade and production are measured in 480-pound bales (thousands). Each year represents financial years, beginning in July and ending in June of the following year. Thus, the 2016 year depicted above is the 2016-17 financial year.

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