

# Economic Upgrading in Bangladesh's Apparel Value Chain during the Post-MFA Period: An Exploratory Analysis

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## Abstract

Bangladesh's success in the global apparel value chain following the expiration of the Multi-Fibre Arrangement in 2005 deserves study to understand how a least developed country can become a major source of apparels within a short period of time. This article shows that even under a quasi-hierarchical governance structure, suppliers in Bangladesh have made significant progress in economic upgrading, particularly process and product upgrading. Competitive pressure linked to the 'open sourcing' of apparels has caused leading firms to ease conditionalities on the production process. Preferential access to major markets, timely responses to buyers' changing demands, favourable policies related to the import of raw materials, production and export of apparels and new labour-related policies have facilitated economic upgrading. Suppliers have accordingly benefited from substantial investment in productive capacity, technological know-how and workers' skills. Further upgrading would require more investment in firm-level productivity and improvement in physical and social compliance.

JEL: L22, L23, F1

## Keywords

Economic upgrading, product upgrading, process upgrading, competitiveness, Multi-Fibre Arrangement, productivity, global value chain

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## Introduction

With the expiration of the Multi-Fibre Arrangement (MFA) in 2005, the global apparel value chain entered into an era of open sourcing that has changed the competitiveness of major supplying countries. Despite much apprehension about the loss of competitiveness due to the withdrawal of quota facility, Bangladesh has been able to improve its competitiveness and become the second largest source of apparels after China.

Bangladesh's success as a major supplier during the post-MFA period has been researched from different perspectives. Initially, open sourcing was considered to be a challenge to the survival of Bangladesh's apparels sector, given its low level of competitiveness based on quota facility for exports to major markets (Gereffi & Frederick, 2010; Gherzi Textile Organization, 2002; Spinanger & Verma, 2003; Spinanger & Wogart, 2001). Bangladesh overcame its limitations by gradually improving competitiveness through investment in technology, productive capacity, human resources, management and operations (Rahman, Bhattacharya & Moazzem, 2008; te Velde, 2014).

Economic upgrading is a key means of success for actors in global value chains. It largely depends on the nature of the governance structure for the production process of a particular industry.<sup>1</sup> Governance structures include hierarchical, quasi-hierarchical, network-based and market-driven structures, with the global apparel value chain largely depending on the first two types (Gereffi, 1994; Gereffi, Humphrey & Sturgeon, 2005; Humphrey & Schmitz, 2000, 2002). Under hierarchical and quasi-hierarchical governance, the apparel value chain has been experiencing different kinds of economic upgrading such as product, process and functional upgrading (Gereffi & Lee, 2012; Gereffi & Memedovic, 2003). Each of these kinds of upgrading takes place at a certain stage of the production process including assembly, original equipment manufacturing and original brand-name manufacturing. Process upgrading refers to increasing the efficiency of the transformation of inputs into outputs by reorganizing the production method or adopting better technology. Product upgrading refers to improving the sophistication of product lines, so that the marketability of the product is enhanced and the producer gets a premium price for the product. Functional upgrading refers to increasing the overall skill content of value chain activities by acquiring new functions in the chain or abandoning existing functions (Neilson & Pritchard, 2009).

According to Humphrey and Schmitz (2000, 2002), firms in a quasi-hierarchical value chain could upgrade their processes and products at a faster pace, but such a governance structure is unfavourable for functional upgrading. In contrast, a market-driven value chain usually facilitates functional upgrading but may not sufficiently facilitate process and product upgrading.

Since a production process combines a number of specialized services, firms' upgrading occurs when improvement in most of the specialized services takes place in an integrated manner.<sup>2</sup> Most upgrading activities are complicated and require investment in machinery and equipment as well as skill enhancement. Without ensuring the availability of technically skilled and efficient workers, investing in machinery and equipment would not constitute upgrading.

Economic upgrading of Bangladesh's apparel value chain needs to be examined according to two interrelated dimensions—the nature of economic upgrading under existing governance practices and domestic preparedness to sustain the upgrading process.

The rest of the article is organized as follows. The second section discusses the objective of the study and the methodological approaches. The third section gives an overview of Bangladesh apparel sector. The analysis of economic upgradation in apparel sector is described in the fourth section. The fifth section identifies the factors responsible for economic upgrading. The sixth section concludes the article.

## Objectives and Methodology

This article analyzes the nature and extent of the dynamics and changes in economic upgrading in Bangladesh's apparel value chain during the post-MFA period. It identifies the factors responsible for such changes. It is an exploratory analysis, since the issues related to economic upgrading are examined based on data and information collected from a limited number of leading apparel suppliers.

The article is based on primary and secondary data on Bangladesh's apparels sector. A comparative analysis using secondary data on the performance of the apparels sector, mainly on changes in the production process, is presented in the next section. The section highlights changes from 2005 to 2013 with regard to the use of raw materials and intermediate products (HS codes 50–60), machinery (84) and finished products (61–62). To discuss changes at the firm level, the article employs a sample survey of a limited number of firms, carried out in 2011.<sup>3</sup> Using the purposive sampling method, 21 large firms were identified for the survey. Since significant upgrading in an industry is usually led by large firms with greater financial capacity, better networking skills and the ability to take risks in the face of market-related uncertainties and information asymmetries, large firms were chosen to form the sample for the survey (Table 1). The survey was carried out by using a structured questionnaire to understand the changes in process, product and functional upgrading between 2005 and 2011 and identify the reasons behind upgrading.

Out of the 21 firms in the sample, 15 are woven wear firms and six are knitwear firms. Firm-level analysis considers the nature and extent of different kinds of

**Table 1.** Change in Numbers of Workers, 2005 and 2011

Type of Firm	Number of Firms Under Different Size of Workers					
	2005			2011		
	>1,000	1,000–2,000	<2,000	>1,000	1,000–2000	<2,000
Knit (6)	1	2	3	0	2	4
Woven (13)	7	4	2	2	8	3

**Source:** CPD RMG Survey (2011).

**Note:** Numbers in parentheses refer to sample sizes.

changes in terms of product, process and functional upgrading in the apparel value chain over the 2005–11 period. The fourth section presents a detailed firm-level analysis of economic upgrading. Factors likely responsible for firm-level changes in upgrading are briefly examined in the fifth section. Based on the analysis, the sixth section provides possible future directions for upgrading in the value chain.

## Dynamics and Changes in Bangladesh's Apparel Value Chain: An Overview

### *Change in Market Shares of Leading Apparel Suppliers*

Since the expiration of the MFA, sources of apparels have been consolidated, which has increased the market shares of major supplying countries. The share of the top seven supplying countries increased from about 33 per cent in 2004 to 50 per cent in 2013. Bangladesh has had to strive to maintain its competitiveness against China, India, Sri Lanka, Vietnam and Indonesia (Table 2). In less than a decade, Bangladesh raised its market share from 2.5 per cent of total global supply in 2004 to 6 per cent in 2013.

Moreover, Bangladesh's exports of apparels more than tripled from US\$ 6 billion in 2004 to US\$ 26 billion in 2013, a result of increasing imports by buyers for the major markets of the United States, European Union and Canada. During this period, export growth to the United States experienced deceleration from 15.2 per cent and 44.2 per cent in 2005 to 9.3 per cent and 29.2 per cent in 2013 in the cases of knitwear and woven wear products, respectively. On the other hand, the growth of exports to the European Union experienced significant acceleration from 0.39 per cent and –14.2 per cent in 2005 to 12.9 per cent and 19.7 per cent

**Table 2.** Change in the Market Shares of Major Suppliers, 2004 and 2013

Country	Knit		Woven	
	2004	2013	2004	2013
World exports (US\$ billion)	114.8	223.4	134.5	202.1
Market share of major suppliers (% of world exports)				
China	22.5	43.3	21.6	33.8
Bangladesh	2.6	5.9	2.4	6.5
Vietnam	1.4	3.8	1.9	4.9
Indonesia	1.3	1.6	2.1	1.9
India	2.3	3.1	2.8	4.3
Pakistan	1.5	0.9	1.3	0.9
Sri Lanka	0.8	1.1	0.7	0.9
Share of selected suppliers	32.4	59.7	32.8	53.2

**Source:** Trade Statistics for International Business Development (2015).

**Table 3.** Change in Bangladesh's Exports to Major Markets

Importing Country	Knit				Woven			
	Exports (US\$ Million)		Share of Total Exports to World (%)		Exports (US\$ Million)		Share of Total Exports to World (%)	
	FY04	FY14	FY04	FY14	FY04	FY14	FY04	FY14
United States	236.5	1,197.90	11	9.9	1,391.60	3,943.50	39.3	31.7
EU-27	611	8,672.50	28.4	72	1,878.50	6,072.90	53.1	48.8
Canada	70.8	445.1	3.3	3.7	185.9	556.9	5.3	4.5
Others	1,229.60	3,377.30	57.2	14.4	82	1,868.80	2.3	15
Total	2,148	13,693	100	100	3,538	12,442	100	100

**Source:** Bangladesh Export Promotion Bureau (<http://www.epb.gov.bd/>).

**Note:** FY stands for fiscal year which starts at July and ends in June in the following year.

in 2013 for knit and woven products, respectively. The relatively higher growth of Bangladesh's apparels exports to the European Union may be due to differences in market access arrangements for Bangladeshi products, as European Union provides duty-free market access for Bangladeshi products (Haider, 2007; Mohiuddin, 2008). A significant rise in exports was also noticed in Canada, particularly after the announcement of preferential market access for least developed country (LDC) products in 2001 (Table 3).

Competitiveness in the apparel value chain relies on suppliers' abilities to provide 'full-package' supplies to fulfil buyers' orders as per specifications. Enhanced domestic capacity to supply textiles in particular has created an advantage for Bangladesh's apparel manufacturers by reducing lead time at the processing stage. With the rise in demand for apparels, the domestic backward linkage textiles sector has flourished, given its relatively higher capacity to supply yarn and fabrics. Between 2004 and 2013, the production capacity for yarn increased from about 460 million kg to 1.1 billion kg, while that for fabrics increased from 3.1 billion m to 7.3 billion m (Table 4). Such development in backward linkage textiles has contributed to increasing local value addition in the apparels sector, particularly

**Table 4.** Domestic Capacity to Supply Backward Linkage Textiles

Item	2004	2013
Production of yarn (millions of kilograms)	459.5	1,107.40
Production of fabrics (millions of metres)	3,100	7,300
Local value addition of knit (% of gross value)	60*	70*
Local value addition of woven (% of gross value)	35–40*	N/A

**Source:** Bangladesh Economic Review ([http://www.mof.gov.bd/en/index.php?option=com\\_content&view=article&id=327&Itemid=1](http://www.mof.gov.bd/en/index.php?option=com_content&view=article&id=327&Itemid=1)) and Bangladesh Textile Mills Association (<http://examresultbd.com/bangladesh-textile-mills-association-job-circular/>).

**Note:** \* indicates data from 2011.

by knitwear firms. Economic upgrading, especially product upgrading, would likely benefit from increasing domestic capacity for yarn and fabrics required for manufacturing products as per buyers' specific demands. The fourth section provides a detailed analysis of this issue.

### *Changes in Composition of Apparels Exports*

Bangladesh's export basket has experienced a number of changes since 2005 (Table 5). Although the number of exported products (Harmonized System 6 digit level) has decreased, the addition of new products has reshuffled the export basket. About half of the products experienced average yearly growth of over 10 per cent between 2004 and 2013—these can be termed 'dynamic' export products. Among the rest of the products, about 38 per cent experienced decline during the same period. Due to firms' limited capacities and other constraints, these products did not survive for a long time in the international market. Like other LDCs, Bangladesh faces the challenge of having only a limited number of export products in the international market due to the lack of competitiveness.<sup>4</sup> With the rise in demand and increase in production capacity, new products have been added to the top 10 list.<sup>5</sup> Needless to say, such changes in product composition indicate improving domestic capacity to offer new products based on newly available raw materials and machinery and better production processes.

Changes in product composition also appeared in the product diversification index estimated for Bangladesh's knit and woven products (Table 6). Since 2005, exports of knitwear products have become more diversified, while those of woven wear products have become further concentrated. Better export diversification by other supplying countries means that Bangladesh has yet to become competitive with a diversified export basket.

Bangladeshi suppliers specialize in manufacturing cotton-based apparels. Traditional domestic cotton-based textiles manufacturing capacity was the initial

**Table 5.** Change in the Composition of Products

Total Number of Products (Harmonized System 6 Digit Level)	Knit	Woven	Knit and Woven
Number of products traded in 2004	113	117	230
Number of products Traded in 2013	110	113	223
Number of Products added in 2013 vis-à-vis 2004	11	19	30
Number of Products dropped in 2013 vis-à-vis 2004	2	6	8
<b>Average yearly growth, 2004–2013</b>			
Above 10%	56	47	103
5–10%	7	11	18
0–5%	6	16	24
Negative growth	44	43	87

**Source:** Trade Statistics for International Business Development (2015).

**Table 6.** Product Diversification Index of Bangladesh's Apparels

Year	Knit	Woven
2004	0.4808	0.4189
2013	0.4006	0.4335

**Source:** Authors' calculations based on International Trade Centre (2015).

base for developing backward linkage textiles for the export-oriented apparels sector. The textiles sector has further strengthened under the conditionality of minimum domestic value addition to avail duty-free market access in major markets. As a result, the share of exports of cotton-based apparels has increased over the years from 60 per cent in 2004 to 79 per cent in 2013. Major cotton products include different kinds of men's/boys' and women's/girls' top and bottom items of apparel. Limited capacity to manufacture non-cotton apparels is a weakness for the apparels sector. However, exports of non-cotton apparels have been increasing in recent years.

Overall, macroeconomic data indicate that Bangladesh's apparels sector has been prepared for necessary changes in economic upgrading during the post-MFA period. A detailed analysis of firm-level data provides insight into the nature and extent of upgrading during this period.

## Analysis of Economic Upgrading in the Apparel Value Chain: Findings from the Sample Survey

### *Export Performance of Sample Firms during 2005 and 2011*

Since 2005, sample firms in Bangladesh's apparel value chain have experienced a significant rise in exports, which corroborates with national data on exports of apparels. The increase in the volume of exports over time indicates that sample firms' productive capacities and competitiveness have improved, which is reflected in their larger floor spaces and higher number of production lines, machines and workers on production lines. Both knitwear and woven wear firms have experienced similar kinds of changes in most relevant indicators (Table 7). Machinery use has significantly increased, particularly in knitwear firms, while in

**Table 7.** Change in Factory Ergonomics in Sample Firms, 2005 and 2011

Type of Firms	Average Floor Space in a Factory (Square Feet)			Average Number of Lines in a Factory			Average Number of Workers in a Factory		
	2005	2011	Yearly % Change	2005	2011	Yearly % Change	2005	2011	Yearly % Change
Knit	1,12,167	1,79,111	9.9	26	34	5.8	2,384	3,080	4.9
Woven	70,985	1,03,385	5.1	9	15	11.1	3,553	4,672	5.3

**Source:** CPD RMG Survey (2011).

**Table 8.** Shares of Exports under Different Types of Dealings with Buyers, 2005 and 2011

Type of Buyer	Knit (6)		Woven (13)	
	2005 (% of Total Exports)	2011 (% of Total Imports)	2005 (% of Total Exports)	2011 (% of Total Imports)
Retailers	35.8	56	56.5	62.2
Local buying houses	30	6.3	20	15.8
International buying houses	44.2	49.2	25	23.2
Total	100	100	100	100

**Source:** CPD RMG Survey (2011).

**Note:** Numbers in parentheses indicate sample sizes.

woven wear firms, it has increased at a slower pace. Such differences in machinery use will likely have implications for the patterns of product and process upgrading between the two types of firms. Dynamics and changes in machinery use, technology use, skill composition and domestic capacity to supply raw materials result in differences in firms' productivity and efficiency.

Dynamics and changes in sample firms have taken place under a quasi-hierarchical governance structure. Improvements in productive capacities and competitiveness have changed the nature of governing the value chain. A considerable share of Bangladeshi firms operates as Tier 1 firms with international retailers and brands. As a result, these suppliers' share of the volume of exports has further increased, while that of local buying houses has significantly decreased (Table 8). Such changes in the composition of export orders reflect a rise in the confidence of retailers and brands in Bangladeshi suppliers. In turn, this confidence has facilitated dealings between suppliers and buyers at lower transaction costs.

### *Process Upgrading Experiences in Sample Firms*

Process upgrading in the apparel value chain refers to improvement in the production process. Improvement can be achieved by undertaking changes in the use of machinery and workers by introducing new technologies, operational modalities and management techniques. The data on sample firms show different kinds of changes in related indicators during 2005–11. There has been significant improvement in the use of machinery and workers in production lines—the numbers of machines and workers per line as well as the machine-worker ratio decreased in most factories during the period (Table 9).

These reductions in machines and workers per line did not reduce production per line, which indicates rises in capital and labour productivity (Table 10). In fact, the rise in productivity of woven wear firms is considerably high as compared to that of knitwear firms. Such improvement in productivity through process upgrading has been possible due to substantial investments in technology



**Table 9.** State of Process Upgrading in Selected Apparels Firms (Technology Related)

Indicators	Type of Product	2005	2011	Yearly Change (%)
Machine/line	Knit	24	25	0.69
	Woven	72	70.9	-0.25
Machine/worker	Knit	1.6	1.2	-4.2
	Woven	1.74	1.4	-3.3
Average number of workers per line	Knit	83	73	-11.8
	Woven	222.8	192.6	-13.6

**Source:** CPD\_RMG Survey (2011).

**Table 10.** State of Process Upgrading in Selected Apparels Firms: Change in Machinery Use

Indicator	Type of Product	2005	2011	Percentage Change between 2005 and 2011
Average amount of output per line per hour	Knit	172	175	1.74
	Woven	715	804	12.45
Average amount of output per worker per day	Knit	14.6	17.9	22.6
	Woven	4.6	5.8	26.1
Output per machine per hour	Knit	6.5	6.9	6.15
	Woven	1.3	1.5	15.4

**Source:** CPD\_RMG Survey (2011).

**Table 11.** State of Process Upgrading in Selected Apparels Firms: Changes in Method of Production and Management System (%)

Variable	Knit		Woven	
	2005	2011	2005	2011
% of firms that changed mode of production between 2005 and 2011	NA	17	NA	23
% of firms with a human resource department	100	100	77	100
% of firms with a grievance officer	100	100	77	92

**Source:** CPD\_RMG Survey (2011).

**Notes:** 1. % refers to the share of respondents among total respondents in the survey.  
2. NA stands for not available.

and machinery. Firms have introduced new line technologies to reduce the number of workers per line, replaced low-speed and semi-automated machinery with high-speed and automated machines and introduced new industrial engineering departments to reduce inefficient allocations of resources in the production process (Table 11). Such changes in the production process have been carried out alongside improvements in workers' skills to adapt them to the new technologies. Human resource management in sample firms improved during

the period. The introduction of new departments, such as human resource departments, and increase in the number of grievance officers at woven wear firms have been mainly to improve workplace safety and security as well as industrial relations.

Process upgrading has helped firms to reduce wastage of resources and other unwanted expenses. All firms use automated computer-aided design machines and other sophisticated machines that significantly reduce wastage. Reduction in the share of rejected goods (often called ‘stock lot’) is an indication of less wastage. The introduction of industrial engineering departments at the factory level has reduced operational costs by reducing the unnecessary use of machinery and workers. Investment in the capacity utilization improvement of machines and workers has also contributed to improved efficiency in the use of machines. Factories have benefited from positive externalities such as the overall improvement in workers’ skills due to work experience and entry-level workers’ skill levels.

During this period, the method of communication between suppliers and buyers has been further improved. All firms use high-speed internet for different kinds of communication with buyers including taking orders, sourcing, sample confirmation, inspection, export confirmation and overall communication (Table 12). The use of webcams for long-distance communication and meetings has significantly reduced communication time. Almost every supplier maintains a corporate website that is easily accessible.

Process upgrading in the apparel value chain has been made possible due to public sector initiatives. Improvement in trade logistics due to continued public investment has facilitated the production process. As a result, trade costs have been reduced gradually. For example, better physical infrastructure has reduced transportation time between factories and the sea port located in Chittagong. Similarly, the introduction of the Automated System for Customs Data (ASYCUDA) has improved the customs automation process by reducing paper-based formalities in export and import activities. Overall lead time has been reduced significantly from 88 to 44 days in knitwear firms and from 98 to 60 days

**Table 12.** State of Process Upgrading in Selected Apparels Firms: Changes in Internet Use (%)

Variable	Knit		Woven	
	2005	2011	2005	2011
% of firms using internet to take orders	50	100	69	100
% of firms using internet in sourcing	67	100	62	100
% of firms using internet in sample confirmation	50	100	62	100
% of firms using internet during inspection	100	100	69	100
% of firms using internet in export confirmation	50	100	54	100
% of firms using internet in overall communication	100	100	100	100

**Source:** CPD RMG Survey (2011).

**Note:** % refers to the share of respondents among total respondents in the survey.

**Table 13.** Change in Logistical Issues between 2005 and 2011

Indicators	Knit		Woven	
	2005	2011	2005	2011
Average number of days as lead time	88	44	98	60
Average number of days to import raw materials	60	55	38	25
Air shipments (% of total exports)	7.5	7.2	5.9	1.8

**Source:** CPD RMG Survey (2011).

**Note:** % refers to share of respondents among total respondents in the survey.

**Table 14.** Change in Buyers' Guidelines

Type of Firm	Variable	% of Firms that Mentioned a 'Decrease/Increase' in Buyers' Guidelines with Regard to the Production Process between 2004 and 2011		
		Source	Quality	Specification
Knit	Fabrics	No change	Increase by 33%	No change
	Machinery	No change	No change	No change
	Accessories	No change	Decrease by 33%	No change
Woven	Fabrics	No change	Decrease by 38%	No change
	Machinery	No change	No change	No change
	Accessories	No change	Decrease by 15%	Decrease by 15% and increase by 15%

**Source:** CPD RMG Survey (2011).

**Note:** % refers to share of respondents among total respondents in the survey.

in woven wear firms, which has improved the operational efficiency of firms as well (Table 13).

Process upgrading has taken place under a quasi-hierarchical governance structure. Over time, buyers' guidelines for providing work orders have been shortened particularly with regard to sources of, quality of and specifications for fabrics, machinery and accessories (Table 14). Specification requirements for fabrics, machinery and accessories in knitwear firms have become flexible, perhaps due to the development of backward linkage textiles that improved buyers' confidence in suppliers' capacities.

## Product Upgrading Experiences in Sample Firms

Product upgrading usually refers to the introduction of new products, changes in product design and improvements in quality and capacity to manufacture more sophisticated output. Sample firms specialize in manufacturing bottom items of apparel, such as trousers, which corroborates with national-level data (Table 15). But both knitwear and woven wear firms have reduced their production shares of trousers and other bottom items. Product composition in sample firms has changed

**Table 15.** Change in the Product Composition of the Ready-made Garment Sector

Type of Firms	Year	Shares of Products by Type						
		T-shirt	Polo Shirt	Trousers	Shirt	Babies Garments	Bottom/Top Apparels	Jacket
Knit (6)	2005	10.9	12.7	10.6	4.1	18.2	37	3.7
	2011	11.6	13.6	3.9	4.1	21.5	37	3.7
Woven (13)	2005	-NA	NA	43.1	42.8	13.7	30	1.8
	2011	NA	NA	32.2	43.9	12.1	26.5	1.7

**Source:** CPD RMG Survey (2011).

**Table 16.** Modernization in Design and Quality of Knit and Woven Products

Variable	Knit (6)		Woven (13)	
	2005	2011	2005	2011
Design	Simple and basic	Significant upgrading and variety in design, including some fancy items	Simple and basic	Significant upgrading and variety in design, including some fancy items
Quality of fabrics	Average and simple	Innovation and good quality	Average and Simple	Better quality

**Source:** CPD RMG Survey (2011).

**Note:** Numbers in parentheses refer to sample sizes.

where various kinds of top items, such as shirts, T-shirts and polo shirts, have been introduced in successive years, which reflects firms' improving capacities to diversify manufacturing bases.

Despite the relatively limited level of change in product composition, sample firms have slowly shifted their manufacturing bases from traditional low-end basic items towards more value-added items. In 2005, a major share of sample firms' manufactured items comprised of 'simple' and 'basic' design items using 'average' quality fabrics. In 2011, products were comprised of 'fancy' items with variety in design using good quality fabrics (Table 16). Such changes were more observed in knitwear firms where domestic backward linkage textiles offer different categories of fabrics as per buyers' requirements in the shortest lead time. In order to maintain product quality, both knitwear and woven wear firms have increased the numbers of workers in quality control sections since sales have increased over the years. Product development reflects firms' growing capacities to produce various products that are upgraded in terms of design, printing and quality.

### *Functional Upgrading Experiences in Sample Firms*

Functional upgrading involves moving towards becoming new links of the value chain, usually with higher margins and difficult-to-replicate activities such as original design, branding and marketing. Compared to process and product upgrading, little improvement can be discerned in functional upgrading in sample firms.

Despite changes in processes and products, most of the sample firms have fully relied on buyers for research and development, design as well as product marketing. Suppliers offered very few designs that could be considered ‘new’—only 2 per cent of firms offered their own designs, but only for a few products. Because of domestic backward linkage textiles, knitwear firms have relatively better capacity to offer variation in fabrics. There have been no considerable developments related to research and development, specifically design and the recruitment of highly qualified international designers.

### **Factors Responsible for Economic Upgrading in Bangladesh’s Apparel Value Chain**

Economic upgrading in a value chain takes place according to a gradual process with the participation of key players towards achieving the objective of improvement in technology, quality of products and diversity of product composition. The dynamics and changes in economic upgrading in Bangladesh’s apparel value chain experienced over the past decade have been possible because of the fulfilment of necessary and sufficient conditions. A number of domestic and external factors have been responsible for achieving upgrading.

#### *Preferential Market Access to Developed and Developing Countries*

LDCs have been enjoying preferential market access to developed and developing countries for a long time. The quota facility provided to LDCs’ apparels exports to major markets under the MFA was the single most important multilateral market access initiative until 2005 (Bhattacharya & Rahman, 2000; Nicita, Ognitsev & Shirotori, 2013; Rahman & Anwar, 2006). Since the expiration of the MFA, LDC products have been enjoying preferential market access to a number of developed and developing countries, according to unilateral preferential arrangements. Among them, the European Union’s ‘Everything but Arms (EU-EBA)’ scheme, established in 2001 and renewed with changed rules of origin criteria in 2011, is the most important market access initiative for Bangladesh. Over the years, Bangladeshi suppliers have been significantly utilizing the market access facility—about 92 per cent of the exports of knit products and 28 per cent of the exports of woven products have utilized it (Rahman, 2013). High utilization of duty-free, quota-free market access under the EU-EBA scheme demonstrates its importance for enhancing Bangladesh’s exports. Knitwear firms with backward linkage textiles have been able to gain more benefits.<sup>6</sup> As a result, process and product upgrading among knitwear firms accelerated after the expiration of the MFA.

Under the renewed EU-EBA scheme, the rules of origin criteria have been relaxed where duty-free access is provided for complying only with ‘single stage’ criteria.<sup>7</sup> This relaxation of criteria has opened up opportunities for increasing utilization of the EU-EBA facility for woven products, which had suffered due to limited capacity to comply with ‘double stage’ rules of origin criteria.<sup>8</sup> The implication

of the change for process and product upgrading is still unclear since it is still too early to assess the net impact on Bangladesh's apparels sector.

Bangladesh's exports to Canada have significantly improved since the country was granted duty-free market access in 2001. With the provision of 25 per cent local value addition, both knitwear and woven wear exports to Canada have significantly improved in terms of share and value. Almost all exports to Canada now utilize the preferential market access facility. Similarly, exports to a number of non-traditional markets including Japan, China, India, Turkey and South Korea have been increasing due to preferential market access facilities. For example, Bangladesh's exports to Japan increased from US\$ 22.4 million in 2005 to US\$ 56.5 million in FY14, exports to India from US\$ 1.12 million in 2005 to US\$ 86.6 million in 2013 and exports to Turkey from US\$ 39.8 million in 2005 to US\$ 780.2 million in 2013.

During the last three decades, Bangladeshi firms have strengthened their export competitiveness by developing the backward linkage textiles sector, upgrading technological bases and improving workers' skills (Bhattacharya, 1997; Bhattacharya, Rahman & Raihan, 2002; Mottaleb & Sonobe, 2011; Rahman, Bhattacharya & Moazzem, 2008). Preferential market access to major markets ensures comparative advantages to Bangladeshi products. Such access provides long-term predictability to suppliers, which enables large-scale investments in technologies and human resources. As a result, Bangladesh's apparels sector has experienced process and product upgrading in the apparel value chain.

### *Development of Domestic Supply Capacity along with Changes in Global Demand*

The ability to respond to changing global demand in a timely manner is considered to be a major strength of Bangladeshi suppliers. They have successfully responded to changing demand for apparels in major global markets, including the United States and Canada. This has been possible given domestic capacity to supply required fabrics and accessories for apparels exports. In accordance with their understanding of changing global demand, Bangladeshi suppliers matched patterns of growth in exports of major categories of Bangladeshi products with those in imports of key developed countries (Table 17). Development of backward linkage textiles with significant investment by domestic and foreign investors provides an opportunity to support knitwear firms as per buyers' requirements. Various kinds of incentives and support provided by the Government of Bangladesh to encourage private investment have contributed to this upgrading.

### *Specific Provisions under Different National Policies and Measures Facilitate Economic Upgrading*

The domestic regulatory regime has facilitated economic upgrading of the apparel value chain in Bangladesh. Major national policies such as the Industrial Policy, Import Policy Order, Export Policy, SME Policy, Foreign Investment Act of 1980

**Table 17.** Products Matching with Similar Levels of Growth in Imports and Exports

	Growth (Compound Annual Growth Rate)	Bangladesh's Exports to United States (Number of Products)				
		>20%	10–20%	5–10%	0–5%	Negative Growth
US imports from world	>20%	0	0	0	0	1
	10–20%	6	3	2	3	0
	5–10%	8	8	7	3	7
	0–5%	2	9	10	11	16
	Less than 0%	2	0	5	10	43
Bangladesh's Exports to Canada (Number of Products)						
Canadian imports from world	>20%	0	0	0	0	0
	10–20%	24	14	2	1	3
	5–10%	14	12	3	3	2
	0–5%	5	7	0	6	5
	Less than 0%	3	2	3	1	8

**Source:** Authors' calculations based on International Trade Centre (2015).

and Bangladesh Export Processing Zones Authority Act of 1980 place special focus on the development of the manufacturing and export bases of the apparels sector. Economic upgrading is mainly facilitated by specific provisions under those policies, rules and orders.

The apparels sector has enjoyed various incentives and facilities under different policies and measures that favour economic upgrading in the value chain. These include: the import of raw materials under a back-to-back letter of credit facility and duty-free import of capital machinery, raw materials and intermediate products used in export-oriented industries; a 50 per cent tax exemption on the export income of all the exporters (except those that are unregistered) and concessionary duty as per statutory regulatory order (SRO) on the import of capital machinery and spare parts for setting up export-oriented industries and manufacturers of indigenous fabrics (such as woven, knit, hosiery, grey, printed, dyed, garment check, hand loom, silk and specialized fabrics) supplying their products to 100 per cent export-oriented garment industries are entitled to avail a cash subsidy equivalent to 5 per cent of the value of the fabrics.<sup>9</sup> Various kinds of financial support provided to the sector include the provision of up to 30 per cent credit against a non-negotiable letter of credit, subsidized credit under the Export Promotion Fund and a special bonded warehouse against back-to-back letters of credit provided to exporters to invest in technology, machinery and products.

In the export processing zones (EPZs), firms have enjoyed a number of special facilities such as the tax holiday facility of 10 years for newly established industrial firms. Firms set up after 31 December 2011 enjoy the following facilities: 100 per cent tax exemption for the first two years, 50 per cent for the third and fourth years and 25 per cent for the fifth year. Notably, firms are allowed to import

construction materials, machinery, office equipment and spare parts without any duty. Further, relief from double taxation is likely to save investors from extra tax burdens. Secured and protected bonded areas, off-shore banking, back-to-back letters of credit, customs clearance at factory sites and simplified sanction procedures can ease the production and export processes. Import on documentary acceptance basis helps investors to import easily. Finally, a subcontracting facility with export-oriented industries inside and outside EPZs helps investors to produce their products with flexibility.

Public investment for the development of trade infrastructure and trade logistics has also made significant contributions to economic upgrading. Development of the Chittagong sea port, improvement of major roads including the Dhaka–Chittagong highway, investment in the development of the power and gas sectors, introduction of ASYCUDA and reduction of the number of documents and signatures for import and export have reduced trade costs and improved efficiency in trade-related services, thereby contributing to upgrading.

### *Foreign Direct Investment in the Apparels Sector Contributes to Economic Upgrading*

The strong competitiveness of Bangladesh's apparels sector has attracted foreign investors to invest in the textiles and apparels sectors (Table 18). The inflow of foreign direct investment (FDI) consistently rose over the years from US\$ 32.3 million in FY04 to US\$ 432 million in FY14, which helped to raise the share of FDI in the textiles sector.<sup>10</sup> FDI stock in the textiles and apparels sectors comprised about 21 per cent as of April 2014, amounting to US\$ 1.72 billion. Foreign investors who invested in the textiles sector applied state-of-the-art production processes, advanced technologies and safe workplace, which contributed to increased productivity and efficiency (Kee, 2005). FDI in the textiles and apparels sectors is confined to major EPZs (i.e., Dhaka, Chittagong and Adamjee EPZs). Given the huge demand for backward linkage textiles for specialized yarn and fabrics, FDI should be encouraged outside of EPZs.

### *Changes in Labour Regulations Improve Compliance Standards*

Economic upgrading is facilitated by changes in labour-related rules and regulations. The amended Bangladesh Labour Act of 2013 focuses on workers' rights and entitlements to wages, safety and security in the workplace and compensation due to work-related accidents. Laid-off compensation is made mandatory in the labour law for workers whose names appear in the master rolls and who have worked more than one year. Employers' liability for compensation is made stringent for any worker's casualty during his or her service. A worker must be examined free of cost by a registered medical practitioner within three days of notification of an accident made by the worker. The labour law includes ensuring the safety of the working environment. The safety of buildings and machinery



**Table 18. FDI Inflow to Bangladesh's Textiles Sector, FY2004–2014**

Year	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
FDI inflow to Bangladesh's textiles and apparels sector (US\$ million)	32.3	75	73.5	105.4	93.4	130.4	157.9	225.2	241.4	412.4	432
Total FDI inflow to Bangladesh (US\$ millions)	284.2	803.8	744.6	792.7	768.7	960.6	913	799	1,194.90	1,730.60	1,495.50
FDI inflow to Bangladesh's textiles and apparels sector as a share of total FDI inflow to Bangladesh (%)	11.4	9.3	9.9	13.3	12.2	13.6	17.3	28.2	20.2	23.8	28.9

**Source:** Bangladesh Bank website (<https://www.bb.org.bd/>).

**Note:** FY stands for fiscal year which starts at July and ends in June in the following year.

must be confirmed by an inspector, an alternative exit must be available on each floor to avoid fire casualties and cleanliness of establishments is required to keep them free of effluvia. The improvement of workers' facilities has encouraged workers to engage more in changes in the production process and technologies that facilitate process upgrading.

However, social upgrading in the apparels sector has not advanced as fast as economic upgrading. The monitoring and inspection of physical and social compliance and their maintenance at the firm level have often been found to be weak (see CPD, 2014). Even buyers' monitoring of physical and social compliance has not been adequate to ensure workplace safety and security and workers' rights, although their monitoring has improved. In recent years, the enforcement of major social compliance indicators such as minimum wage as well as child labour and health-related issues has been stricter. After the tragic incidents of the Rana Plaza collapse in 2013 and Tazreen Fashions fire in 2012, monitoring and inspection of physical and social compliance standards have increased significantly. Such changes are likely to contribute to the improvement of workers' efficiency and productivity.

## Concluding Remarks

Over the last three decades and particularly during the post-MFA period, the competitiveness of Bangladesh's apparels sector has significantly increased through economic upgrading in the value chain. Under a quasi-hierarchical governance structure, Bangladeshi suppliers have tried to build their capacity towards process and product upgrading. Taking into account the growing consumer demand, retailers and buyers have expanded their networks with these suppliers and increased sourcing from Bangladesh. A number of domestic and external policies have played favourable roles in achieving changes in the value chain.

Economic upgrading in the value chain is resource-intensive and not without risks. Bangladeshi suppliers have positively responded to the opportunities and challenges of such upgrading during the post-MFA period. Investment required for changes in technology, machinery and human resource development has been provided by suppliers. Long-term predictability of market competitiveness has encouraged them to undertake large-scale investment for process and product upgrading. As a result, sample firms have made significant improvements in productivity, particularly in terms of output per line per hour, output per worker per day and output per machine per hour. Diversified products have been offered to buyers both in terms of quality of fabrics and diversity in design of top and bottom items of apparel. Despite such development, Bangladesh's export basket is narrow and needs to be further diversified. There is ample scope to diversify it through further improvement in product and process upgrading.

The factors that have thus far contributed to product and process upgrading may not be adequate for further upgrading in the value chain. Preferential market access, policy support by the Government of Bangladesh and improvement in social and physical compliance may be considered 'sufficient' for limited-scale

economic upgrading. However, such factors may not be sufficient to move suppliers from the low-end to medium- and high-end segments of the value chain. Suppliers need to make substantial investments in the productivity of the production process of the value chain. Skills development for workers and mid-level management should be a special priority in human resource development. Further investment is required for quality control in order to ensure better quality of products. Physical and social compliance, which ensure workers' safety and security in the workplace, better living standards and workers' rights, are important areas for investment on suppliers' ends. Economic upgrading in the future may not necessarily be achieved only by investing in better technologies and improvement of workers' skills—it appears that investment in ensuring physical and social compliance must play a larger part.

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### Notes

1. Usually two kinds of value chains are found in the production process, such as buyer-driven and supplier-driven value chains.
2. For example, process and product upgrading depend on greater capability in garment preproduction, including preparation of samples, pattern grading and marker making as well as improved capability in fabric finishing (dyeing and printing) and garment finishing (e.g., washing, distressing and embroidery; Minor, 2008).
3. The objective of the survey was to identify the nature and extent of dynamics and changes in upgrading in Bangladesh's apparel value chain. This article does not analyze firms' financial stability or balance sheets, since balance sheets are not published on firms' websites, given that they are confidential.
4. According to UNCTAD (2013), 41 per cent of LDC products could not survive more than one year on the international market. The survival rate for Bangladeshi products is the highest among LDCs—only 29 per cent of Bangladeshi products could not survive more than one year, with the average survival period being 2.4 years.
5. Three knitwear items—women's/girls' trousers, babies' garments and men's underpants/briefs—and five woven wear items—babies' garments, men's shirts and anoraks, and women's anoraks and brassieres—were included as new items in the product list. Products could be adjusted either by firms' low profit margins or increases in firm productivity. Such issues are examined in detail through analysis of firm-level data in the following sections.
6. The Generalized System of Preferences utilization rate for knitwear products was almost double compared to that of woven wear products—from 70 per cent to 90 per cent in the case of knitwear during 2007–10 and from 30 per cent to 50 per cent in the case of woven wear during 2007–11.
7. Under the new rules of origin, woven wear apparels manufactured with imported fabrics will get duty-free market access in the European Union.
8. Bangladesh may face rising competition in the European Union because relaxation of the rules of origin criteria has opened up opportunities for other LDCs, such as Cambodia.

9. Provided that the manufacturers of the fabrics do not enjoy duty drawback schemes or duty-free bonded warehouses.
10. However, foreign investment is mainly in the form of reinvestment, which indicates less Greenfield investment in this sector. Despite having a favourable policy environment, new investment is hampered by a poor business climate.

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