Corporate Governance & Sustainability of the Global Value Chain: Bangladesh Ready-Made Garment Industry Post-Rana Plaza investigation into fairness of value appropriation by global apparel brands, manufacturers and labour

Yoshiteru Uramoto  
Sophia University

Lilac Nachum Prof  
CUNY Bernard M Baruch College

How does access to this work benefit you? Let us know!

Follow this and additional works at: https://academicworks.cuny.edu/bb_pubs

Part of the Fashion Business Commons, International Business Commons, Labor Relations Commons, Operations and Supply Chain Management Commons, and the Public Affairs, Public Policy and Public Administration Commons

Recommended Citation

https://academicworks.cuny.edu/bb_pubs/1093

This Report is brought to you for free and open access by the Baruch College at CUNY Academic Works. It has been accepted for inclusion in Publications and Research by an authorized administrator of CUNY Academic Works. For more information, please contact AcademicWorks@cuny.edu.
Corporate Governance & Sustainability of the Global Value Chain: Bangladesh Ready-Made Garment Industry
Post-Rana Plaza investigation into fairness of value appropriation by global apparel brands, manufacturers and labour

Yoshiteru Uramoto
Distinguished Professor
Centre for Global Discovery, Sophia University, Tokyo

Lilac Nachum
Professor of International Business
Baruch College, City University New York, New York, NY

Sophia University, Tokyo Japan, 2018
Summary

On 24 April 2013 more than 1,100 people died in the Rana Plaza garment factory collapse in Bangladesh. TV cameras focused on the victims of this horror – the garment workers, their unsafe and pitifully low incomes. Improvements were promised, by the factory owners, their international buyer customers, Bangladesh Government and civil society groups. This study sought to examine to what extent these promises had been delivered upon. Bangladesh is the world’s second largest exporter of ready-made garments. The industry has played a central role in the country’s economic development and poverty alleviation. It is widely agreed that labor safety and fair compensation are essential for the long-term sustainability of the industry. A global team of researchers created a framework for evaluating the way value is created and appropriated in the global garment industry, focusing on Bangladesh as the producing countries and the world’s largest global brands. The research team found that in Bangladesh significant value is being created through low production costs but these gains are disproportionately benefiting Bangladeshi manufacturers and Western consumers, rather than Bangladeshi workers. Current Government measures fail to rebalance this inequality, posing a threat to the long-term sustainability of the industry. The study recommends that the Government reviews its policies. It should provide incentives for the manufacturers to shift from low cost production to skill upgrading as part of a long term industrial policy of development and sustained growth. Global apparel brands also have a role to play. They should support the enforcement of unionization rights, prevent union-busting activities and ensure that the factory owners - their suppliers – adhere to international laws and standards.

Key words:

Garment global supply chain, sustainability of global supply chains, Bangladesh, value creation, value appropriation, labour conditions, minimum wage, government policy, work conditions and safety
Table of Contents

Table of contents
List of tables
List of figures
Appendices

Acknowledgements

Rationale for the Study

Executive Summary

Chapter 1  Introduction
   Corporate Governance and Focus of the Study
   Study Contribution to the Implementation of the SDG and CSR in Global Supply Chains
   The Global Garment Supply Chain
   The History of Bangladesh’s Ready-Made Garment Industry and its Current Status

Chapter 2  Conceptual Framework of the Analysis

   2.1 Salient Differences Between Value Creation and Value Appropriation
   2.2 The Participants in Global Supply Chains: Lead Firms and Other Participants

Chapter 3  Findings of the Analysis of the Garment Supply Chains

   3.1 Value creation
      Cotton Growers
      Textile Producers
      Accessories Producers
      Garment manufacturers
         The Nature of the Business
         The Local Value Chains
         The Production Process
         Cost of Value Creating Activities
      Lead firms
         Brand Management
         Demand Forecast
         Management of the Circulation of Merchandise in the Supply Chain
         Sales and Pricing
         Supply Chain Management
         Risk Management
         Corporate Governance of the Supply Chain

   3.2 Value appropriation
      Manufacturers
      Lead firms
      Variations in Value Appropriation
**Case Studies: Successful Garment Producers of Bangladesh**

Lessons learnt:
- Investment in quality of personnel is a key factor for success
- Investment in new technology helped increase productivity
- Investment in research and creativity
- Maintaining quality of product is a key factor
- Bangladesh’s RMG has reached a level where some firms are price-setters, not price takers
- Business relationships with buyers and retailers resembles partnerships
- Factory compliance is a precondition to success

**Case Study: A Successful Global Brand—H&M**

The Choice of H&M

H&M in Bangladesh

**Caveats and limitations**

3.3 Industrial Variations and Value Appropriation by Consumers

3.4 Widening Gaps between Productivity and Wages

Chapter 4 **Recommendations**

4.1 **Recommendations for Bangladesh’s manufacturers**

- Governance and Transparency
- Speed and Flexibility
- State-of-the-Art Technology
- Cost and Efficiency
- Learning

4.2 **Recommendations for Bangladesh’s Policy Makers**

- Differentiate Bangladesh as a Globally Competitive Location for Garment Production
- Seek Low-Cost Access to Export Markets
- Facilitate Consolidation: Differentiate Bangladesh in Size and Scope of Garment Manufacturers
- Facilitate Manufacturers’ Upgrade to Higher Value-Added Activities
- Data and Information

4.3 **Recommendations for Lead Firms**

- Increase Value Creation
- Turn the Supply Chain into a Source of Competitive Advantage
- Develop Close Partnership with Bangladesh’s Manufacturers
- Actively Manage Information Flow in the Supply Chain

Chapter 5 **Conclusions**

5.1 **Future Research**

References

Appendices
List of Tables
Table 1. Growth of Bangladesh’s RMG Export and Market Diversification
Table 2. Employment in Bangladesh’s RMG Industry
Table 3. Value Creation and Value Appropriation: Defining Features
Table 4. Size Differential Among Participants in Global Supply Chains
Table 5. Locally Purchased Fabric by Bangladesh’s Garment Manufacturers
Table 6. Cost Breakdown of Value Creation Activities: Bangladesh Manufacturers
Table 7. Brand Value: World’s Largest (by Brand Value) Apparel Firms
Table 8. Cost Breakdown of Value Creation Activities: Lead Firms
Table 9. Value Creation in the Garment Industry
  9a. Bangladesh’s Manufacturers, Value Added per Establishment
  9b. Value Added by Lead firms
Table 10. Value Appropriation in the Garment Supply Chain: Profit Measures
  10a. Bangladesh’s Manufacturers, Average per Establishment
  10b. Profit Measures of Lead Firms
Table 11. Profile of Case Study Firms: Garment Manufacturers in Bangladesh
Table 12. Value Appropriation in Global Supply Chains: Selected Industries
Table 13. Wages of Garment Workers in Bangladesh
  13a. Statutory Minimum Wage Without Market Adjustments
  13b. Estimates of Prevailing Wages by Grade
Table 14. Value Creation and Value Appropriation in the Garment Supply Chain

List of Figures
Figure 1. Value Creation and Value Appropriation in Supply Chains
Figure 2. Ready-Made Garment Supply Chain
Figure 3. Value Chain of Denim Jeans
Figure 4. Value Chain of Cotton T-Shirt
Figure 5. Value Chain of Woven Shirt
Figure 6. Value Creation Activities of Lead Firms
Figure 7. Consumer Price Index: Apparel versus the Economy as a Whole
  7a. US
  7b. EU
Figure 8. Labour Productivity and Wages
Figure 9. Productivity of Bangladesh’s RMG Manufacturers Productivity, 1983-2015
Figure 10. Bangladesh RMG Industry: Number of Establishments and Establishment Size, 1984-2015

Appendices
Appendix 1. Profile of the World’s Largest Apparel Firms
Appendix 2. US Wages, Selected Fashion and Apparel Occupations
Appendix 3. Custom Clearing Cost for RMG Products
Appendix 4. Size of Lead Firms’ Global Retail Networks
Appendix 5. Retail Rental Prices, World’s Major Cosmopolitan Centres
Appendix 6. Corporate Tax Rate Paid by Lead Firms
Appendix 7. Case Studies of Successful Garment Manufacturers in Bangladesh
Appendix 8. Expenditure on Apparel, % Total Consumers’ Expenditure:
  8a. US
  8b. EU
Acknowledgements

This report was prepared under the leadership of Yoshiteru Uramoto, Distinguished Professor, Centre for Global Discovery, Sophia University, Tokyo Japan and former Regional Director of the ILO Regional Office for Asia and the Pacific. Lilac Nachum, Professor of International Business at City University New York, wrote the report in consultation with Yoshiteru Uramoto. Dr. Nazneen Ahmed, Senior Research Fellow at the Bangladesh Institute of Development Studies (BIDS), provided inputs on Bangladesh garment industry.

The research team acknowledges with deep gratitude illuminating discussions during the course of the work on this project that have been instrumental in deepening the understanding of the garment industry and its supply chain, and that have helped shape the ideas of this study. The Team appreciates the valuable advices given by Mr Kazuo Tase, CEO SDG Partners, Inc. Japan and Ms Mayo Suzuki during the course of the project.

Thanks go to Mr Srinivas Reddy, former ILO Country Director, and the leadership of Bangladesh Garment Manufacturer and Exporter Association (BGMEA) President Siddiqur Rahman and Senior Vice President Faruque Hassan for their support of our work, which was pivotal in introducing us to the Bangladesh garment industry. Mr Nur Mohamman Amin Rasel, Joint Secretary Trade Promotion of the BGMEA, provided indispensable assistance with data collection and interpretation regarding the Bangladesh garment industry. We also thank the participants in the BGMEA and Bangladesh Institute of Development Studies (BIDS) workshops in Dhaka for thoughtful comments on a preliminary draft of the study.

The Research Team acknowledges with gratitude the benefits to the report of the expertise of Elida Behar, Sharon White, Herbert Frichner, and Margaret Bishop, professors at the department of Fashion Business Management of the Fashion Institute of New York. Professor Rubin Sackin, the head of the department, offered generous help in connecting with experts. Very special gratitude goes to Akintola Owolabi, Accounting professor in the Lagos Business School, for excellent guidance on the accounting intricacies of our analyses, as well as to Mr Jordan Pious, manager at A.T. Kearney and a prolific writer for Apparel Magazine, for introducing us to the intricacies of the global garment supply chain and generously sharing his vast knowledge of the industry. Most insightful comments on the study were received at various stages from Frederic Godart, professor of Organizational Behavior at INSEAD and the author of Unveiling Fashion: Business, Culture, and Identity in the Most Glamorous Industry, Palgrave Macmillan; Dr Suresh Gupta, Supply Chain Management professor and consultant; Dr Nobuya Haraguchi, Industrial Development officer at United Nations Industrial Development Organization (UNIDO); Ms Chantal Dupasquier, Chief, Policy Reviews Section, United Nations Conference on Trade and Development (UNCTAD), and Ms Ariel Zborowski, a former financial analyst at the supply chain management department of GAP.
Rationale for the Study

The Rana Plaza tragedy and the subsequent reactions of global brands; Bangladesh’s manufacturers and their associations, such as the Bangladesh Garment Manufacturer and Exporter Association (BGMEA) and Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA); the government of Bangladesh; and the International Labour Organization (ILO); as well as global media and public opinions led many stakeholders to question whether they ought to continue doing business in Bangladesh. Others took the tragedy as a wake-up call and sought to recover the reputational damage to Bangladesh’s garment industry. Few, however, have given thought to the sustainability of the value chain and the extent to which social and governance-related issues in the supply chain were discussed—whether they were deeply explored or put to the scrutiny of vigorous analyses.

Thanks to global expansion of production networks, many developing countries have gained opportunities to participate in global supply chains, which have opened a promising path of development. Bangladesh entered in the global production chains of ready-made garments (RMG) in the late 1970s and according to WTO trade statistics, as of 2014 has grown since to become the second largest manufacturer after China. The Bangladeshi ready-made garment industry has become the driver of the country’s economy, engaging over four million workers, mainly females from impoverished rural areas, contributing 80% of the export and earning over 26 billion US dollars per annum. As the industry gained its foothold, standards within the work environments needed attention as proven by the Rana Plaza tragedy in April 2013 which resulted in 1,129 deaths and more than 2,500 injuries to workers. It is not difficult to find evidence that documents inadequacies in respect to protecting human and labour rights, working conditions, and fairness in wages, even despite improvements following the Rana Plaza incident. For all stakeholders, Rana Plaza was a wake-up call for the need to improve human and labour rights as described in the UN Guiding Principle on Business and Human Rights.

The questions raised by this study are as follows: Is the global supply chain fair and sustainable for Bangladesh? What can global brands do as the major stakeholders? What can main suppliers or manufacturers do in the local supply chains in the country? What is the role of the government? This study was designed to address these questions. It outlines the entire value chain as well as the participants involved and identifies their respective contributions in terms of value creation and appropriation. These theoretical foundations are employed to examine the status of the social and corporate governance aspects of the garment global supply chain and to assess its sustainability. The study examines—with greater precision than has been done previously—the main threats to the existence and future prosperity of the garment supply chain by examining issues such as safety, labour rights, brand image and sustainability of the Bangladesh garment industry.

Is it possible to raise wages of the workers, to improve safety as well as workplace conditions and the environment, and to ensure employees enjoy human and labour rights while Bangladesh maintains the growth of the industry and even enhances its competitiveness in the global market? To answer this question, this study was initiated to construct the global value chain of ready-made garments in its entirety—at the worker, employer/manufacturer, wholesaler and retailer levels—and try to find solutions in its analysis of the chain and to assess capabilities.
We extended the analysis to include the level of consumers at the lower end of the chains. They give the final words on price, which determines the total sales or value created for appropriation. The total value created and how it is distributed amongst the participants demonstrates the fairness of the global chains. The consumer price index of urban apparel in the US market has been constantly falling for the past 20 years (though, at best, remaining flat for the past several years), while that of all consumer items have risen over 50% during the same period. The trend is continuing, and the gap in the price index between the two is widening, with apparel became less than half of the average of all consumer items. We all know that consumers are the big winners as seen in the consumer surplus generated through falling price. Do consumers make independent decisions? To what extent are consumers’ preferences and demands created by retailers or brands?

Will the Bangladesh ready-made garment industry be able to move up the value chain and capture more value? Research consistently shows that firms’ ability to learn and upgrade themselves via participation in global supply chains rests on their own technological resources and capabilities. This study attempts to determine if Bangladesh’s industry would be able to move up the value chain and be sustainable despite studies indicating that a majority of emerging market firms are unable to benefit from this opportunity due to limited capabilities that constrain their learning capacity (Marchi, Giuliani and Rabellotti 2016).

The study also assesses whether the global value chain has a built-in market mechanism that moves towards becoming fair and sustainable in light of the existing economic structures of trade and the industry or if some intervention is required in the global value chains.
Executive Summary

Bangladesh’s garment industry has played a major role in the economic development of the country through job creation and poverty reduction. In recent years, and particularly after the Rana Plaza tragedy, concerns have grown over the plight of workers, safety and labour conditions at their work places, fairness of wage levels and value distribution in global value chains. The Rana Plaza incident required the Bangladesh RMG industry to seize an opportunity to adjust the current policies for the sustainability of the industry.

Concerns regarding value distribution among participants in global supply chains have recently attracted substantial attention and have been subject to heated debate in academia, politics and the media; however, they have been the subject of only limited vigorous research. In this study, we seek to address this gap by examining—theoretically and empirically—the relationships between value creation and value appropriation in global supply chains. The insights gained provide a basis for recommendations for participants and stakeholders in global supply chains regarding the construction of just and fair value distribution, thus ensuring the long-term sustainability of supply chains. The research setting is the global supply chain of garments, and the study focuses on Bangladesh as the producing country and global apparel companies from the US, Europe and Japan.

We develop and evaluate empirically a theoretical framework that treats value creation and value appropriation in a unified manner and establish a means to compare contributions of respective participants\(^1\). Our approach is based on a broad view of value creation and conceptualizes social value and governance issues as intrinsic aspects of value creation on par with the economic, production-related dimensions usually considered to constitute value creation.

Analyses of value creation and value appropriation by the participants in the global garment supply chain, measured respectively by value added and profitability, show some imbalances between value creation and value appropriation in relation to Bangladesh’s manufacturers, whose value appropriation appears substantial when assessed in relation to value creation (see the summary table below).

Value Creation and Value Appropriation, Garment Supply Chain, Average Per Firms

<table>
<thead>
<tr>
<th></th>
<th>Value Creation (Value added % sales)</th>
<th>Value Appropriation (Profit margins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead firms 5 year average</td>
<td>0.85</td>
<td>9.70</td>
</tr>
<tr>
<td>Bangladesh’s manufacturers 4 year average</td>
<td>0.085</td>
<td>11.06</td>
</tr>
<tr>
<td>Bangladesh’s labour % change, 1994-2015</td>
<td>Labour productivity: 391%</td>
<td>Wages: 22%</td>
</tr>
</tbody>
</table>

\(^1\) Value creation is the value-added contribution made by each participant in the chain towards the creation of the final output. Value appropriation is the share of the combined value created by the chain that is captured by each participant. For more elaborated discussion of these concepts and the way they are operationalized, see the theory section ahead.
We extend our theoretical framework to offer some insights regarding value creation and appropriation by labour employed in garment production. As a factor of production in which costs are incorporated in the value creation of production units, labour is not usually incorporated in analyses of this kind on their own. However, garment production is labour intensive, with the labour force made up of mostly low-skilled labour whose limited negotiating power makes them vulnerable to possible violations of labour rights and standards, and is likely to distort an adequate balance of value creation and appropriation. As the summary Table above shows, the contribution of Bangladeshi labour to value creation, measured by a growth of labour productivity, is not matched by a raise in wages. This distortion should be seen in light of the fact that, during the study period, there had been minimal capital investment in productivity-enhancing processes, and the rise in labour productivity is attributed mostly to improvement in labour skills and efficiency.

This distortion suggests a significant market failure and calls for government intervention as market forces alone do not offer sufficient incentives for the manufacturers to correct for it. Regulatory intervention on all manufacturers is needed to ensure change is sustained, lest there is an incentive to avoid compliance in order to gain cost advantage. However, to date, Bangladesh’s government has not displayed the ability to correct for the distortion we document in labour conditions or correct for the market failure that has enabled it. We propose several alternative constituencies that should assume the responsibility for instilling change, namely international organizations—notably the ILO, global brands, social activists and NGOs.

As an international organization with the global mandate for improving labour conditions around the world, the ILO possesses substantial legitimacy and credibility in demanding change and acts itself to bring it about. Absent the political and legal power to enforce change, the ILO should use its soft power and credibility to act as an agent of change, both directly by putting more pressure on Bangladesh government and indirectly by activating other national governments to act towards this goal. For example, the ILO succeeded in improving labour conditions in Swaziland by having the US government remove Swaziland’s preferential access to the US until labour conditions improved. Six months after this intervention, there was considerable noticeable improvement. This suggestion reflects the spirit of the ILO’s revised tripartite declaration of principles concerning multinational enterprises and social policy (MNE Declaration), which will come into effect in November 2017 in commemoration of the 40th anniversary of the original declaration. A major theme of this revision is the role that national governments should assume in improving labour conditions in the host countries in which their firms operate.

The ILO should play a role also in improving data collection, correcting for the information asymmetries that proliferate throughout the local garment industry. The ILO should strengthen its own efforts to collect data and put pressure on Bangladesh’s government to do so as well. More broadly, the ILO must take a leading role in advocating the need for greater transparency and the imperative of placing transparency requirements at the centre of the activities of national bodies overseeing the garment industry.

Global brands possess the ability to impose change by creating market forces that will incentivize Bangladeshi manufacturers to improve labour conditions, thus correcting for the market failures that enable the distortion we found in relation to labour in its garment industry. Global brands
should create a market for social compliance and human rights by placing these issues as a central criterion in selecting manufacturers and rewarding manufacturers that adhere to high standards by giving them work. Anecdotal observations suggest that some brands are already implementing this practice, but so far, this has been the exception rather than the standard. Surveys repeatedly show that the dominant selection criteria are costs and speed, and the sustainability of the supply chain receives only marginal weight (Pious and Burns 2015; Lopez-Acevedo and Robertson 2016).

The Better Work programme and others have demonstrated the power of global brands to improve working conditions. Studies of garment factories show that the presence of global brands have a strong impact on governance and local labour conditions. For instance, in comparison to three 2012/13 fatal incidences in garment factories in Bangladesh with a combined toll of 1,252 deaths, Cambodia—where foreign companies are involved through ownership shares in garment factories—registered a single fatal incident with a death toll of two people (Stephenson 2013). Other studies show that being connected to global networks, via either trade or outsourcing linkages as is the case in Bangladesh, improves labour conditions. Labour employed in factories that produce for major brands were found to have better working conditions than those elsewhere (Berik and Rodgers 2010). Such evidence demonstrates the power that global brands have on local conditions and call for greater involvement by brands operating in Bangladesh towards this end. Improvements in labour conditions serve the interest of the brands by enhancing their global reputation and are fundamental for the sustainability of their global supply chains.

Studies also show the impact that a foreign presence can exercise on labour unionization, pointing to an important direction global brands should seek to make an impact. A total of 300,000 employees serve the largely foreign-owned Cambodian garment factories, a dwarf in comparison to more than four million employees in Bangladesh. Nonetheless, less than 5% of Bangladeshi labour is unionized whereas unionization rates in Cambodia garment industry are among the highest of any major garment-producing country in the world (Stephenson 2013). Cambodian unions give labour power to collectively exercise their voice on a range of issues ranging from failure to raise wages to labour safety. Indeed, average wages in Cambodia garment industry rose by 65% between 2001 and 2011, making garment employees among the highest paid employees in Cambodia’s manufacturing industries, although this pay level is still among the lowest in the Asia Pacific region (Stephenson 2013; Yee 2015).

Bangladesh’s garment workers, in contrast, have found it challenging to organize and bargain collectively. Notwithstanding the commitments made by the Bangladesh government to labour unionization—including the ratification of ILO Conventions on freedom of association and collective bargaining and their incorporation in the Bangladesh Labour Law Act—attempts to form labour unions in Bangladeshi garment factories are being blocked by a myriad of obstacles erected by the government and the factory managers (European Commission 2015; Human Right Watch 2016). In parallel, the BGMEA, the industry association that represents factory owners, enjoys considerable political clout, with its members holding about 10% of the Bangladesh Parliament’s 350 seats and having strong ties with government ministers and other officials. This serves to increase the power imbalance between management and labour and appears to shield owners from much scrutiny, enabling them to keep wage levels among the lowest in the world as well as sustaining lax safety standards in their factories (The Daily Star 2009; Chalmers 2013).
Global apparel brands should support efforts to ease constraints on unions and prevent factory union-busting activities. They should take a vigorous position regarding the enforcement of labour unionization rights and ensure the adherence by all involved to international laws and standards. Properly functioning labour unions offer a means to correct for the unfair treatment of labour in garment factories and correct the dissonance between labour productivity and wages that we document, as well as other dimensions of the working environment. Global brands may also support the training of labour for effective collective bargaining processes to prevent misuse of union power and conflicts with the factory owners.

Acting together, global brands are very powerful in relation to the other constituencies involved with Bangladesh’s garment industry and should assume the lead in instilling change. Global brands have a moral and ethical responsibility to exercise their collective power to that effect and to improve labour conditions and the broader governance of the factories with whom they have commercial relationships. Such actions offer opportunities for global brands to contribute towards the achievement of the broader societal goals summarized in the Sustainable Development Goals (SDG) and to demonstrate commitment to the United Nations Guiding Principles (UNGP). In addition to their moral obligations, global brands are dependent on the long-term sustainability of their supply chains, making their involvement with governance and social issues in their own interest as well. The recent declaration of boycott by leading brands in support of garment workers who have been sacked, hunted or jailed for participating in wage strikes of Bangladesh’s 2017 apparel summit offers a good example of the means the global brands have to enforce change.

The purchasing practices of lead firms should facilitate wage growth through negotiations between employers and workers to ensure adequate living wage. Many lead firm’s CSR statements express such commitments and acknowledge responsibility, but less progress is seen in implementing them. Progress here could be made by following ACT implementation guidelines https://actonlivingwages.com/memorandum-of-understanding/.

There is also a role for social activists and NGOs. These constituencies have focused their attention almost exclusively on global brands, resulting in worthy efforts which have led to some improvements. However, social activists and NGOs ought to target the Bangladesh government as well, even though this task will likely require the development of tactics that differ from those exercised on global brands.

Improving labour conditions and creating positive dialogue between employers and labour would serve the interests of all involved. Estimates by EcoTextile, a magazine of the global textile supply chain, suggest that in 2016 labour unrest in Bangladesh cost the industry US$100 million in lost orders and associated disruption costs (see also Shaheen, Raihan and Islam 2013). Others put a much higher value on the estimated losses. The Bangladesh Garment Manufacturers and Exporters Association (BGMEA) posits that in 2013 strikes and unrest may have cost the country $3 billion worth of potential new business. The prevention of such losses, which are borne by all the participants in the supply chain, should offer incentives for remedy.

Collective action by all involved should be undertaken to pass on the costs of improvement in labour conditions to the consumers. Our findings show that consumers are major beneficiaries of the surplus value created by the chain, enjoying apparel prices that continuously go down, creating
a growing gap with the general consumer price index over time. They are thus the natural candidates to bear the cost of improving labour conditions and wages in Bangladesh’s garment factories. The government should increase minimum wage levels in return for higher pay by global brands, using its bargaining power relative to the global brands to impose this act. As noted earlier, the low costs of labour combined with the size of the local industry affords Bangladesh’s government considerable clout in dealing with global brands. No other country offers similar benefits, making any exit by the global brands costly and unlikely. Bangladesh’s government should use this clout as a strategic tool to increase the value appropriated by the Bangladesh garment industry. For this to succeed, however, regulatory intervention will be needed to enforce equal pay levels across the industry and to prevent individual manufacturers from competing on costs. To absorb the additional costs, the brands would raise the prices to the consumers, using their ethical conduct in their supply chains to justify this move.

We also extend a call for ethical consumption by consumers: to reward in their consumption behaviour brands that follow high governance standards in their supply chains and to express a willingness to pay a premium for such behaviour. Brands should publicise their governance practices and be transparent in relation to their activities in this sphere. National and international governments, as well as NGOs and social activists, have a role to play in encouraging consumers’ awareness of the merits of ethical consumption.

Given limitations of the data and the analyses we were able to conduct based on the data at hand, we offer these conclusions as only suggestive, but we believe they are indicative of overall trends. Furthermore, the magnitude of the differences we find entails a large margin for error, which fosters confidence in the findings. Another caveat of our work that ought to be borne in mind when interpreting our findings is that we have taken a snapshot at a given point in time of the relationships between value creation and appropriation, and we did not account for the long-term nature of these relationships. Notable among these long-term considerations are environmental, social and global issues (ESGs) that are not explicitly accounted for in our study. However, we recognize and support the study of these issues within the framework of value creation and value appropriation as important topics for future research.

Comparisons of value appropriation across several supply chains in other industries show a more balanced distribution of value in the garment chain than in other global chains in which lead firms appropriate much more value than the other participants. We suggest three explanations for this distinctiveness of the garment chain. The first is related to the competitive intensity in the market for the final goods, which puts pressure on prices, making the consumers, rather than the lead firms, major claimants of value generated by the supply chain and eroding lead firms’ revenues. The second explanation refers to the central place of social and governance issues in value creation of garments, in which costs are borne in large part by the lead firms and increase their costs. Both forces reduce lead firms’ profits. In parallel, government support for Bangladesh’s garment manufacturers, part of a policy of export-led economic development, has considerably reduced the

---

2 There are considerable variations among global brands in terms of their commitments to ethical conducts in their supply chains and their investment in improving work conditions. The absence of data on such investments does not enable a systematic view, but anecdotal observations suggest that only a small fraction of global brands adhere to the ILO standards or to any other standards of management of supply chains. It might be that broader change in this regard could only be achieved by regulatory intervention by governments.
costs of doing business for Bangladeshi manufacturers and improved their performance, further eroding the differences between them and the lead firms.

Beyond explaining our findings, we question the continuation of this policy approach at this stage of the development of Bangladesh’s garment industry. Since the emergence of the garment industry in the 1980s, Bangladesh’s main comparative advantage has been its low cost, enabled by low labour cost and government support that had reduced the cost of doing business for Bangladeshi manufacturers. This cost advantage turned Bangladesh into a primary-sourcing destination for companies that compete on price and specialize in low- and mid-market priced apparel that, by their very nature, are highly price sensitive, and created constant pressure on manufacturers’ prices. Government policy has played a major role in supporting this outcome. The gist of its policy—essentially since the emergence of the industry—has been to lower the cost of doing business for the manufacturers, making them more cost competitive. This policy has been instrumental in encouraging the emergence and development of the industry but may no longer be appropriate at the current stage of the industry.

We suggest that, at this stage of its development, the industry will benefit from a change in the policy approach from cost benefits to skills upgrade. Continuing government support in the form of past policies may even arrest a natural upgrade process and harm the future development of the industry. A large body of academic research supports the notion that state-guided policies can be helpful to mobilize resources at the early stages of development but can then become a serious drag on productivity and innovation, which are the very factors needed for the transition to middle income economies. Policy actions should be directed instead to providing the resources required to assist garment manufacturers in upgrading their skills. This in turn will increase their ability to differentiate themselves and increase their ability to appropriate greater value from their participation in the supply chain. As have been observed and described in several cases, some Bangladeshi garment manufacturers have already been investing in human resources, improving workplaces, and raising human resources competencies and manufacturer’s competitiveness and productivity, speaking for the benefits of such initiatives for all involved.

We outline the boundaries, conditions of our findings, and conclusions across supply chains and discuss the industrial characteristics that may limit generalization, notably the factor of intensity in garment production and the diminishing role of labour over time (ILO and Asia Development Bank 2014), as well as differences in skill levels and specializations of participants across supply chains. We also examine the validity of the findings over time and draw attention to the fact that our study was conducted in the aftermath of the Rana Plaza incident, a challenging interval that had direct impact on the issues we studied.
Chapter 1  Introduction

Concerns regarding value distribution among participants in global supply chains have recently attracted substantial attention and have been subject to heated debate in academia, politics and the media (Dedrick, Kraemer and Linden 2009, 2011; Koopman, Powers, Wang and Wei 2010; Powell 2014). The argument has often been encapsulated in a breakdown of the retail price of a piece of output, using it to illustrate the uneven shares that respective participants in the supply chain command. For instance, The Fair Wear Foundation (2012) presents a breakdown of a €29 T-shirt to suggest that the three major players involved in this chain—the manufacturers, the wholesalers and the retailers—get respectively 17%, 24% and 59% of the retail price. D’Arcy, Norman and Shan (2012) demonstrate a similar distribution based on Australian input-output table data. See Moazzem and Basak (2015) for a review and discussion of other studies of the garment supply chain that have reached similar conclusions. Such uneven distribution of value in global supply chains has been noted also in relation to sport shoes (Gerard 2011; Kish 2014), mobile phones (Dedrick et al. 2009, 2011), and telecommunication (Li and Whalley 2002), to name a few.

These findings are used to claim that the low-skilled labour employed in global supply chains does not appropriate fair shares of the combined value it helps create and is being exploited by the large multinational companies who use their global market power to maximize their shares (Anner, Bair and Blasi 2012; Clean Cloth Campaign 2015). Put differently, these critics suggest that value creation and value appropriation are misaligned, corresponding respectively to cells 1 and 3 in Figure 1, and hence are morally distorted and economically unsustainable.

<table>
<thead>
<tr>
<th>Value Appropriation</th>
<th>Value Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>1</td>
<td>[Global firms]</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>[Unskilled labour]</td>
</tr>
</tbody>
</table>

This study is designed to address this issue. Combining positive and normative approaches, we begin with the premise that global supply chains can only succeed in the long run if value is appropriated in an equitable manner among the participants, that is, when value creation and value appropriation are aligned, in correspondence with cells 2 and 4 in Figure 1. Building on these foundations, we have developed and analysed a framework for evaluating value creation and value appropriation and employ it as a means of evaluating value appropriation in relation to value creation.
Presenting value creation and value appropriation in a unified framework enables us to study the relationships between them, and at the same time, to observe their different dynamics and the variety of firm capabilities and policy responses needed for each of them to materialize. The merit of this approach lies in that the two are intrinsically related. Value must be created for it to be appropriated, but anticipated value appropriation affects the participants’ incentives to create value, and might be the major determinant of their contribution to the joint effort that leads to value creation by the entire chain (Adegbesan and Higgins 2011). Therefore, value creation—the overall size of the pie—cannot be treated in separation from how it will be divided among the participants.

We examine this framework with reference to the global supply chain of ready-made garments, focusing on Bangladesh as the producing country and the global apparel companies that operate in Bangladesh, paying specific attention to the US and EU, the two major destination markets of Bangladesh garment export. We articulate in detail the breakdown of the activities that take place in the process of transforming cotton, yarn and wool into apparel goods and selling them on the market, and estimate the value added by various participants. We contrast these estimates with the respective value appropriated by them, as reflected in their profit levels.

We embrace a broad view of value creation to encompass both economic activities and social and governance ones, and view the latter as an intrinsic part of value creation. We further suggest that governance failures represent a major threat for the creation of economic value in supply chains, and should, therefore, occupy a central part in value creation. We examine the value creation activities undertaken by the participants in alignment with social values, such as international labour standards, safety of work environment, and protection of labour, as well as the appropriation of adequate shares of the value created.

Our findings, which are based on a study of two major participants in the global garment supply chain, namely Bangladeshi manufacturers and global apparel companies, do not lend support to the claims that value appropriation in the garment supply chain is distorted and unfair, and suggest instead that the relationships between value creation and value appropriation are more balanced than they are often portrayed. Our analyses show that, after taking account of the value added by the participants in the chain and their costs, including indirect costs as well as costs originating in social and governance activities, value creation is broadly in line with value appropriation. Given the limitations of the data available and the constraints that this imposes on the method of analyses, we offer these conclusions as suggestive and indicative, rather than as firm evidence. Nonetheless we believe that they convey an order of magnitude and overall trend. However, given the magnitude of the differences, there is large margin for error for the overall conclusions to continue to hold.

We extend our theoretical framework beyond the two participants—manufacturers and lead firms—to examine labour creation and appropriation in relation to labour employed in garment production. This addition enables us to contrast and compare these relationships in the global versus local parts of the production chain. The balance between value creation and appropriation in relation to labour is less than clear a priori, with indications of market failures of various types originating in information asymmetries and market power, which may challenge value appropriation by labour. We analyse pay levels to labour in Bangladesh’s garment industry, which we take as an indication of value appropriation by labour, and examine it with reference to labour
productivity that is treated as a broad indication of labour’s contribution to value creation. We find evidence for imbalance between the two, suggesting that labour productivity has increased much faster than pay levels, with the gap particularly evident in more recent years. These findings should be considered in light of the fact that most of the rise in labour productivity is a result of improvement in labour skills and efficiency, as there have been minimal, if any, capital investment in productivity improvement during the period studied. We present these findings as only suggestive, given the limitation of the data, but suggest that they call for policy intervention to secure value appropriation on the part of labour that is aligned with value creation. Specific policy actions that should be taken towards this end include increased minimum wage, particularly to unskilled labour, as well as the formation of labour unions to increase labour’s negotiating power and reducing some of the information asymmetries between them and the other participants in the supply chain.

With the limitations of the analyses in mind, this finding suggests that value appropriation is determined by value creation and the two cannot be discussed in isolation. To further substantiate this suggestion, we conduct a series of case studies of selected firms that appear to appropriate more value from their participation in the garment supply chain than others. These case studies demonstrate that this ability rests on them creating more value in the first place. A manufacturers’ ability to meet the needs of their customers better than other firms and create more value for them determines the amount of value they appropriate. These firms employ a variety of means to enhance value creation and do so in a firm-specific manner that creates a source of differentiation and competitive advantage. This variation is particularly interesting among Bangladesh garment manufacturers who have access to similar resources and opportunities, and operate under similar economic, institutional and competitive conditions, pointing to firm-specific capabilities as a major determinant of the ability to create and, hence, appropriate value. These findings speak to the importance of differentiation and specialization in determining value appropriation in supply chains.

Comparing the garment industry with several other global supply chains demonstrates a more balanced distribution of value in the garment industry among various participants than that observed elsewhere. Specifically, we do not find the pattern documented in relation to other supply chains whereby the lead firms and/or the retailers appropriate much larger shares of the value created, in some cases larger than that of all other participants combined, as measured by respective profitability.

We attribute the distinctiveness of the garment supply chain in this regard to several features of the industry related to the competitive intensity in the market for the final goods and the high value assigned to social and governance issues as intrinsic to value creation. Competitive pressure has pushed prices down and turned consumers—rather than lead firms—into major claimants of the value created by the supply chain. Under these circumstances, most of the cost saving by lead firms appear to be passed on to consumers. The large investment in governance of the supply chain and the creation of social value through means such as investment in building safety and compensation to the victims of Rana Plaza, which has been embraced by lead firms, further reduces their profits. The pressure of both forces on the profitability of lead firms has grown dramatically in recent years. The advent of the internet and social media has equipped consumers with collective and independent power, which is not influenced by publicity from lead firms, to press sellers for price
reductions, and the aftermath of the Rana Plaza collapse has increased the pressure on lead firms to attend to social and governance issues in their supply chains.

In parallel to these, support by Bangladesh’s government has substantially improved the performance of the manufacturers. Since the inception of the industry in the late 1970s, Bangladesh’s government offered generous support for garment manufacturers as part of its export-led development policy. These include cash incentive for export, duty exemption of imported intermediaries, bonded warehouse facility, and low corporate tax rates compared to those imposed on other industries. Although the intensity of the support has been reduced over time, it has played a major role in eroding the performance differential between the manufacturers and the lead firms.

The imbalance we observe between value creation and appropriation might be attributed in part to the scarcity of firm-level data about Bangladeshi manufacturers. Despite differences in ownership and legal requirements in the respective countries, the activities of the brands in Bangladesh and elsewhere are documented in detail and publicly available. Bangladesh’s manufacturers, in contrast, are incorporated as Limited Companies and are privately owned by their founders or their families, and are subject to minimal requirements to share information about their activities. These gaps in transparency, coupled with different ethical norms regarding labour rights and value distribution of local stakeholders, expose the brands to strong societal pressure to conduct their business while adhering to high moral standards, even when it is inconsistent with financial considerations.

Failure to meet these expectations is punished heavily by stakeholders, creating huge reputational risk and acting as effective market mechanisms to correct for any deviations from societal expectations to create value in a fair and sustained manner. No equivalent mechanisms exist in relation to the manufacturers. Lack of transparency shields the manufacturers from accountability and challenges the ability to observe market distortions and correct for them. It also challenges the ability to study it and uncover the actual details of their activities, which calls for greater tolerance for the limitations of our data.

These findings carry important implications to practice and scholarship. We outline the role of policymakers in enhancing national firms’ ability to create value by differentiating their countries as production locations and removing obstacles for national firms to create value. We also spell out major ways in which garment producers can enhance their ability to create value by meeting closely the demand of lead firms. For the lead firms who command value creation through the entirety of the supply chain, the study stresses the creation of synergies across the supply chain to enhance overall value creation, and the development of skills and capabilities required to create value through collaboration rather than on their own.

The study also offers ground for drawing recommendations for various participants to construct sustainable global value chains that are based on principles of social justice and proper governance where value creation and value appropriation are balanced. We suggest that, for all involved,

---

3 It ought to be noted that tax benefits for garment exporters are not uncommon. In many countries, exporters are located in Export Processing Zones (EPZs) and enjoy considerable benefits, including full tax exemption.
deviations from this balance represent ignorance of long-term strategic and sustainability considerations. For the lead firms who construct and manage the chain, failure to address fair value appropriation and exclusion of the social dimension of value creation represents an adverse situation that will jeopardize their relationships with society and damage societal trust in them. Such a situation is undesirable for other participants as well because it is based on a misevaluation of their capabilities and inefficient utilization of their resources.

The study also contributes to academic interest in value creation and appropriation in supply chains (Brandenburger and Stuart 1996; Chatain 2010). Studies that examine value creation and value appropriation in a unified framework do not do so with reference to supply chains, undermining the ability to understand value distribution in this distinctive setting (Bowmen and Ambrosini 2000; Jacobides, Knudsen and Augier 2006; Molloy and Barney 2015). Others focus on external factors, notably the nature of the competition and market failures, as they affect value creation and appropriation (MacDonald and Ryall 2004; Chatain and Zemsky 2011), or else seek to explain variations in value appropriation across supply chains and participants in them (Li and Whalley 2002; Jacobides, Knudsen and Augier 2006; Dedrick et al. 2009, 2011). That research pays less attention to the relationships between value creation and appropriation that are our major interest.

We also contribute to scholarly interest in identifying the claimants of value beyond the firms who generate it (Coff 1999; Molley and Barney 2015). Extant research in this area identifies employees, shareholders and top management as major stakeholders that appropriate stakes of the value created by firms, and attributes this outcome to the knowledge they hold that affords them strong negotiating power vis-à-vis the firm. We contribute to this stream of research by identifying consumers as additional claimants of value (in terms of the lower price) and by outlining the mechanisms that give consumers negotiating power in their dealing with sellers of apparel products.

Furthermore, by studying in a combined framework all the stakeholders involved with the supply chain—including labour, government and consumers—we identify contributors to value creation and appropriation that may have been overlooked by previous research in this area. This also enables us to document imbalances in supply chains beyond those among various producers. The inclusion of governments as an additional relevant stakeholder enables us to suggest that governments wield an additional influence on value creation and appropriation in global supply chains.

**Corporate Governance and the Focus of the Study**

Traditional public governance mechanisms are rooted in national laws and regulations formulated by the ILO. We are conscious of the growing concern and compliance beyond laws but related to human rights and labour in the international community, in particular relating to corporate social responsibility (CSR), business and human rights, and sustainability-related issues of transnational corporations (TNCs).

However, in this study the focus is mainly on the corporate governance of lead firms as they are the primary leader and manager of the global supply chains manufacturers. Due to this role, lead firms have responsibilities, and their “good” governance plays a pivotal role in many aspects of
the global value chains, in particular, sustainability. Without their good leadership and corporate governance, the Bangladesh garment industry will not be able to sustain itself. However, this study does not explore multilateral initiatives such as the UN Guiding Principles on Business and Human Rights (UNGPs), the Guidelines for Multinational Enterprises of the Organization for Economic Co-operation and Development (OECD), the ILO Multinational Enterprises (MNE) Declaration, the UN Global Compact, and several EU initiatives through directives or other policy-making mechanisms due mainly to the abundance of literature on the subject.

Nor does it explore public governance as the state’s duty to promote compliance and enforce national labour laws and regulations, and to ratify and implement international labour standards, such as those defined by the ILO. Primarily the focus of this study is on private governance led by enterprises, employers’ organizations or industry associations. Corporate social responsibility (CSR) and private compliance initiatives (PCIs) are considered as part of the governance and management of the lead firms and manufacturers.

A novelty of the study lies in the perspectives of the lead firms and evidence-based investigation into the fairness of value capture/appropriation and eventually value distribution amongst the major stakeholders—lead firms, manufacturers and labour—and in the explicit global dimension the study brings to the analysis, which we treat as a fundamental part of both value creation and value appropriation. This enables us to examine how differences in the global scope and reach of participants in supply chains affect their ability to create and appropriate value. It also serves to account for the complex managerial task associated with the circulation of products and information along global supply chains, and incorporate it as a critical value-creation activity. The recommendations include those for sustainability and survival of the industry as well as governance of the lead firms, manufacturers and the government towards sustainable industry.

Yet another notable contribution of this study lies in the examination of value creation and value appropriation in the garment supply chain, which to the best of our knowledge is the first study to do so. As our findings and conclusions demonstrate, the focus on garments—an industry with distinctive sources of value creation and varying participants—enables us to uncover aspects of value creation and value appropriation, and the combination of the two on a global scale, which have gone unnoticed by extant research on other industries.

**Study Contribution to the Implementation of the SDG and CSR in Global Supply Chains**

The issues we address in this study are at the centre of broader societal commitments to the improvement of the state of the world, expressed formally in several mandates. Notable among them are the UN Guiding Principles on Business and Human Rights (UNGPs), a set of guidelines for states and companies to prevent, address, and remedy human rights abuses committed in business operations (also known as the Ruggie Principles, after John Ruggie, the UN Special Representative on business and human rights who proposed them), as well as the UN Sustainable Development Goals (SDGs). Adopted by member states in 2015, the SDGs build on the Millennium Development Goals to ‘transform our world for the better by 2030’, with 17 specific goals and 169 associated targets to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda.
Global supply chains are central to the achievements of these goals due to their vast magnitude and impact on production and consumption patterns around the world. By deepening the understanding of the dynamics of global supply chains and the relationships between value creation and appropriation among the various participants in global supply chains, our study makes several notable contributions towards the achievement of the goals stated in the UNGP and the SDG.

A novelty of our study lies in the broad range of stakeholders we examine, an approach that parallels the assumption that underlies the UN initiatives: multi-stakeholder engagement is necessary to achieve the implementation of the principles. These initiatives describe a shared responsibility between states and corporations with respect to the achievement of sustainability and positive human rights standards as a norm in business. We further expand this scope of stakeholders to include labour and consumers as additional stakeholders; they are not usually included in analyses of this kind.

The findings and the recommendations we advance have direct implications for several of the goals stated by the UN initiatives—at the level of the garment industry in Bangladesh, the Bangladeshi economy, and globally. Our call to raise labour wages and improve labour conditions in Bangladesh’s garment factories contributes towards progress in achieving the goals to end poverty, ensure healthy living conditions and promote well-being for all. The large number of women in the garment labour force in Bangladesh and elsewhere imply that the major beneficiaries of these recommendations are women, serving to advance the SDG goal of achieving gender equality and empowering women.

At the level of the economy as a whole, our study contributes to the achievement of sustainable economic growth by demonstrating a path for enhancing the sustainability of the supply chain and its long-term survival. Given the importance of the garment industry for Bangladesh’s economy, it plays a central role in bringing about these outcomes. The match between productivity and wages—the indicators we use to measure value creation and appropriation—is recognized as a condition for economic development and growth. A recent ILO and Asian Development Bank report (ILO and Asian Development Bank 2014) has extended a call for governments to strengthen their wage-setting institutions in order to reach this goal. In support of such calls, studies of garment factories in Sri-Lanka and Cambodia show that improvements in working conditions translate into productivity growth (Stephenson 2013; Jayasinghe 2016). Even though improving working conditions and raising wages increases the overall costs of production, it more than pays off through improvements in labour morale, which translates into greater efficiency and productivity. Our anecdotal observations of the garment industry in Bangladesh similarly suggest that successful manufacturers in Bangladesh who treat their workers better gain considerable economic benefits.

Beyond Bangladesh, global supply chains and their associated actions are major contributors to environmental concerns. Global clothing production doubled between 2000 and 2014, and with it increased environmental costs. From just a few collections a year, fast-fashion brands now offer dozens, with Zara leading with 20 a year, followed by H&M with 16 (The Economist 2017). According to McKinsey estimates, producing 1 kilogram of fabrics generates on average 23 kilograms of greenhouse gases. Because consumers keep most types of apparel only half as long
as they did 15 years ago, these inputs quickly go to waste. Environmental costs are expected to grow dramatically as emerging market consumers develop more Western apparel shopping patterns. Recognizing the fact that this model of clothing production is not sustainable, a few leading global apparel brands such as H&M and Nike have taken actions to make their production more environmentally friendly, for instance, by using renewable energy, cutting water and chemical use, and developing manufacturing processes that reduce inputs. They also encourage brands to recycle old clothes by returning them to the stores; however, shipping these clothing to poor countries generates its own environmental costs and destroys local garment industries (The Economist 2017).

By offering insights regarding their operations, including means to improve efficiency of resource utilization, our study bears some relevance also towards the SDG goals of environmental sustainability and sustainable production and consumption patterns. On the production side, the extensive flow of raw material and intermediaries that is generated by global supply chains creates enormous amounts of trade. The United Nations Conference on Trade and Development (UNCTAD) estimates that such intra-firm trade accounts for about 80% of total global trade (UNCTAD 2013). These flows increase energy consumption for transportation with the resulting air pollution and the exploitation of scarce energy resources. The management of global supply chains and the growing reliance on technology to increase efficiency and shorten delivery time generate considerable e-waste from electronic equipment. On the consumption side, lower costs and rapid fashion changes, in large part enabled by global supply chains, have considerably increased both consumption and the amount of consumption waste. Such is the magnitude of these environmental influences that some have claimed the clothing industry to be the world’s second most polluting business, after oil (Leitch 2017).

Concerns about the environmental impact of clothing have been increasing throughout the fashion industry, leading to the design of so called low environmental-impact clothing, with designers marketing ethics on par with aesthetics and large global brands making efforts to reduce the environmental impact of their business and produce environmentally responsible collections. This has triggered advocates for modest buying and calls for ‘buy better and buy less’. The issue with these attempts is that low-cost, high-volume fashion is inherently wasteful. As a fashion journalist put it recently: ‘Green fashion is a contradiction in terms. Fashion is, after all, about consuming unnecessary things. ... to be really green you have to adopt the ‘buy better and buy less’ mantra’ (Leitch 2017, p. 62).

**The Global Garment Supply Chain**

Different terms are used around the world to describe the fabric people wear. Garment is commonly used in countries such as the UK. In the US, it is referred to as apparel or ready-made garment (RMG). In Germany, it is called clothing. The different names are internationally recognized and are often used interchangeably, as we also do in this study. These names represent garment production in bulk, in which the consumer has no say on the design and patterns, as distinguished from bespoke garments that are tailored and based on individual choice.

Several features of the garment industry make it particularly interesting for the study of value creation and value appropriation in global supply chains. It is one of the most global value chains
in the world. According to WTO trade statistics, in 2015, global apparel trade accounted for more than 11% of the annual growth in world export value, the highest share by any single industry. This activity is taking place in a globally-spread production network that brings together a highly diverse set of players that originate in countries at different levels of economic development and have varying sources of power and means of value creation (Gereffi 1999; Fernandez-Stark, Frederick and Gereffi 2011; Maximilian 2013; Hoque 2013; Elm and Low 2013). The stark differences among the participants—greater than in most other global supply chains (e.g., electronics, cars)—pose a challenge for the negotiations that govern value creation and appropriation, and make the study of these issues in the context of the garment industry of considerable merit.

In addition to and perhaps related to the large variations among the participating countries as noted above, value creation in the garment industry combines economic activities with social and governance ones more than in most other global supply chains. This provides an appropriate setting for the examination of the relationships between these dimensions and their combined impact on the relationships between value creation and value appropriation.

Yet another feature that makes the garment supply chain interesting for our study is its complexity. It connects multiple countries in a complex structure of sourcing interactions and tight interdependencies, interacting with each other through complex sets of trade regulations and agreements. The multiple participants are also guided by different local regulations, employment and environmental protections, including wide-ranging perceptions of social responsibility and moral accountability (Laudel 2010). Such complexity introduces a large scope for gaps between value creation and appropriation, making the study of these issues in this context of particular importance.

Lastly, the garment industry is interesting because it represents a major potential source of growth for emerging economies, making value appropriation from participation in the supply chain vital for economic development. This industry has been instrumental in drawing emerging countries into global supply chains and has acted as a major catalyst for their economic development and industrialization (Fernandez-Stark et al. 2011; Maximilian 2013). In many of the major garment producing countries, garment accounts for the largest shares of exports and is a significant component of GDP and employment. Understanding the dynamics of value creation and appropriation in this industry is thus fundamental for reassuring its continuous contribution to economic development and increasing efficiency where possible.

The History of Bangladesh’s Ready-Made Garment Industry and its Current Status

The focus of this study is on Bangladesh’s garment manufacturers and global brands and retailers from the US, EU and Japan. According to WTO trade statistics, as of 2014 (latest available at the time of writing), Bangladesh is second only to China as the world’s largest exporter of ready-made garments (RMG), accounting for 5% of world RMG export. In 2016, about 200 retailers and brands from more than 20 countries around the world outsourced their garment production to Bangladesh, among them the world’s largest such firms, including H&M, Walmart, Tesco, Uniqlo, C&A, Mango, Carrefour, Kmart, and Li & Fung and Primark.
Bangladesh’s RMG industry has travelled a long way in the last three decades since starting the journey in the late 1970s. Starting with only a few million dollars of export earnings, it is now an industry of more than 25 billion dollars. However, this journey was not always smooth. The sector had to face a range of national and international challenges, even as it has received changing support from the government. At this point of the journey, the RMG sector of Bangladesh has become strong, confident, polished, compliant, technologically advanced and ready for a big jump ahead.

The RMG sector in Bangladesh emerged as a small non-traditional sector of export in late 1970s. In 1978, 130 people, of which 18 were female, were sent to see Daewoo’s state-of-the-art technology in Pusan, South Korea, and acquire the technical and marketing know-how for garment manufacturing and exporting. This initiated the new era of manufacturing industries in Bangladesh. The RMG sector grew fast with young energetic workers, very good support from the government (in terms of bonded warehouse facilities, cash subsidy for export, etc.) and financial institutions (such as revolving letters of credit). Moreover, quotas under the Multi-Fibre Arrangement (MFA) worked as a blessing in disguise for Bangladesh’s RMG, allowing entry into large markets (Ahmed 2009).

Even though it started as a small initiative, over time the RMG sector of Bangladesh has carved its niche in the world market and sourced a big share of the export pie. Garments made the first shipment of garment products worth only $69 to the US in 1978. Within two decades, RMG exports from the country jumped to $4.5 billion in FY2002. Over the last decade, the sector registered a phenomenal growth rate of 15% per annum, which is impressive by any standard. Now, the RMG industry is the only multi-billion-dollar manufacturing and export industry in Bangladesh.

In fact, this was an exceptionally high growth rate for an emerging industry anywhere in the world. The industrial base, which sustained such high growth, also enjoyed a robust expansion, from less than 50 factories in the 1980s to more than 3,400 in 2002, with 4,000 factories currently operating in the industry, employing more than four million workers. More than two-thirds of the workers in the industry are female. Bangladesh is clearly ahead of other Southeast Asian suppliers in terms of capacity in the RMG industry. It also offers satisfactory levels of quality, especially in value and entry-level midmarket products (Ahmed and Peerlings 2009; Ahmed 2015). This growth is documented in Tables 1 and 2 in terms of exports and employment.
Table 1. Growth of Bangladesh’s RMG Export and Market Diversification

<table>
<thead>
<tr>
<th>Bangladesh's RMG Export to World</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Countries</td>
</tr>
<tr>
<td>EU % of World</td>
</tr>
<tr>
<td>Growth%</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>% of USA</td>
</tr>
<tr>
<td>Growth%</td>
</tr>
<tr>
<td>Canada</td>
</tr>
<tr>
<td>% of Canada</td>
</tr>
<tr>
<td>Growth%</td>
</tr>
<tr>
<td>Non-Traditional Markets</td>
</tr>
<tr>
<td>Australia</td>
</tr>
<tr>
<td>Brazil</td>
</tr>
<tr>
<td>Chile</td>
</tr>
<tr>
<td>China</td>
</tr>
<tr>
<td>India</td>
</tr>
<tr>
<td>Japan</td>
</tr>
<tr>
<td>Korea Rep.</td>
</tr>
<tr>
<td>Mexico</td>
</tr>
<tr>
<td>Russia</td>
</tr>
<tr>
<td>South Africa</td>
</tr>
<tr>
<td>Turkey</td>
</tr>
<tr>
<td>Other Countries</td>
</tr>
<tr>
<td>Sub-Total (Non-Trad.)</td>
</tr>
<tr>
<td>% of Non-Traditional</td>
</tr>
<tr>
<td>% Growth of Non- Traditional</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
</tr>
<tr>
<td>% Growth</td>
</tr>
<tr>
<td>Trend Growth rate (2008-2014)</td>
</tr>
</tbody>
</table>

Table 2. Employment in Bangladesh’s RGM Industry

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment (Million Workers)</th>
<th>Year</th>
<th>Employment (Million Workers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984-85</td>
<td>0.12</td>
<td>2000-01</td>
<td>1.80</td>
</tr>
<tr>
<td>1985-86</td>
<td>0.20</td>
<td>2001-02</td>
<td>1.80</td>
</tr>
<tr>
<td>1986-87</td>
<td>0.28</td>
<td>2002-03</td>
<td>2.00</td>
</tr>
<tr>
<td>1987-88</td>
<td>0.31</td>
<td>2003-04</td>
<td>2.00</td>
</tr>
<tr>
<td>1988-89</td>
<td>0.32</td>
<td>2004-05</td>
<td>2.00</td>
</tr>
<tr>
<td>1989-90</td>
<td>0.34</td>
<td>2005-06</td>
<td>2.20</td>
</tr>
<tr>
<td>1990-91</td>
<td>0.40</td>
<td>2006-07</td>
<td>2.40</td>
</tr>
<tr>
<td>1991-92</td>
<td>0.58</td>
<td>2007-08</td>
<td>2.80</td>
</tr>
<tr>
<td>1992-93</td>
<td>0.80</td>
<td>2008-09</td>
<td>3.50</td>
</tr>
<tr>
<td>1993-94</td>
<td>0.83</td>
<td>2009-10</td>
<td>3.60</td>
</tr>
<tr>
<td>1994-95</td>
<td>1.20</td>
<td>2010-11</td>
<td>3.60</td>
</tr>
<tr>
<td>1995-96</td>
<td>1.29</td>
<td>2011-12</td>
<td>4.00</td>
</tr>
<tr>
<td>1996-97</td>
<td>1.30</td>
<td>2012-13</td>
<td>4.00</td>
</tr>
<tr>
<td>1997-98</td>
<td>1.50</td>
<td>2013-14</td>
<td>4.00</td>
</tr>
<tr>
<td>1998-99</td>
<td>1.50</td>
<td>2014-15</td>
<td>4.00</td>
</tr>
<tr>
<td>1999-00</td>
<td>1.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bangladesh Garment Manufacturers and Exporters Association (BGMEA)
http://www.bgmea.com.bd/home/pages/TradeInformation

It is noted that growth in the non-traditional market was very rapid. Among the traditional markets, the share of EU has increased overtime, while the share of US has decreased. Among the non-traditional markets, Japan, Turkey, Australia and China are the most important ones. This trend of market diversification is a good sign for stability of export in the international market.

The world’s largest apparel brands and retailers originate in the US, EU and Japan. All the world’s 20 largest apparel companies by brand value—the focus of the empirical analysis—originate in these three countries and region. A majority of them outsource their production to Bangladesh, such that they are de facto participants in the same value creation chain (Appendix 1).

The US and the EU are the world’s largest importers of garments. In 2014, the US accounted for about a fifth of the estimated $1.11 trillion total global apparel market, and this share is expected to grow in the coming decade (US Congress Joint Economic Committee 2015). Most apparel sold in the US and the EU is produced overseas, mostly in emerging markets, with China being the largest producer, accounting for 35%-40% of imports to these markets. These countries are also the major markets for Bangladesh’s garment exports. According to data by the Central Bank of Bangladesh, The EU takes the largest share of Bangladesh’s exports, with Italy—the largest EU market—accounting for almost 20% of the total. About a fifth of Bangladeshi exports, more than 80% of which are garments, is destined to the US. The US Office of Textile and Apparel (OTEXA), which collects data on apparel import trends to the US, reports that, as of 2015, Bangladesh was the third largest source of apparel imports to the US (after China and Vietnam), with 6.3% of the total and is among the few countries whose shares of US imports have increased in recent years.

---

4 This aggregated level is the only level for which employment data are available at the time of data analysis. These figures are based on BGMEA estimates.
Chapter 2  The Conceptual Framework of the Analysis

Supply chains describe the sequence of activities that firms undertake to create value to their consumers, including the various steps of production and related activities, such as marketing, sales and service (Porter 1980; Hult, Ketchen and Slater 2004). Although it is possible for a single firm to implement the entire supply chain, contemporary chains usually involve complex structures of co-specialized firms with different sources of value creation, each focusing on a single task. In global supply chains, participants are typically located in different countries, and inputs and outputs cross national borders as they are being transferred among the participants (Kleindorfer and Wind 2009; Elm and Low 2013; UNIDO 2015).

Supply chains involve two different yet closely related dynamics: value creation and value appropriation. Although the two are intimately related—value must be created for it to be Appropriated, and the expectation of value appropriation determines the incentives for value creation—they are nonetheless distinct (Adegbesan and Higgins 2011; Molloy and Barney 2015). Value creation describes the input/output processes whereby resources are being transformed: each producer purchases inputs and adds value to create an output that is sold to producers of the successive stage of production. It represents the net value contribution made by each participant towards the combined value creation of the chain as a whole. Each participant in the chain is both a buyer and a seller, and in these roles, participates in two markets that often differ considerably in their competitive structures and sources of competitive power. The aggregated value-added contributions of all the participants form the combined value created by a supply chain. Value appropriation is the share of this value that is captured by individual participants.

As the net addition by a firm, value creation is typically measured by the difference between sales and the purchase of components, materials, and services from other firms. Value appropriation is approximated by profit margins, which reflect the difference between total income and total cost incurred in the production.\(^5\)

Competition in supply chains takes place at two levels. At one level, subgroups specializing in different value-added activities (e.g., raw material producers, manufacturers, global brands, retailers) compete for their collective share of value appropriation. But competition is taking place also within these groups, among firms with similar specializations, which are competing with each other in both the market for resources as they seek to increase their value creation, and in the market for buyers (consumers), which determines their value appropriation vis-à-vis other members of their sub-group.

2.1  Salient Differences Between Value Creation and Value Appropriation

Value creation and value appropriation differ from each other in several important ways. For one, they originate in different sources and are realized in different arenas. Value creation is determined

\(^5\) While value creation and value appropriation are conceptually distinct, their measurement overlaps in part. For instance, the costs of purchases from other firms are included in the calculation of value added (value creation) and in profits (value appropriation). However, profit calculations include, in addition to these costs, other production costs, including labour expense, the cost of capital and depreciation expense.
by the amount and quality of factors of production available to firms and by their ability to utilize them efficiently. Value appropriation, in contrast, is shaped by the value that consumers assign to what firms produce, expressed in purchasing behaviour and willingness to pay. It is determined by the competitive positions that subgroups and individual participants within them hold vis-à-vis other subgroups and peers within them (Porter 1980; Bowman and Ambrosini 2000; Koopman et al. 2010).

The determinants of value creation and value appropriation combine those that are external to firms (and not under their direct control) and others that are internal to them. External determinants of value creation are related to the availability and quality of factors of production that are accessible to firms. With the occasional exception of very large firms that might be able exert influence in certain circumstances, firms are largely dependent on the environmental context in which they are based for the provision of factors of production. Firms’ ability to access these factors of production and to utilize them effectively towards the creation of value depends on their own managerial skills and organizational capabilities.

In relation to value appropriation, industry structures—as they affect the level of concentration, the presence of substitutes, and switching costs—are external determinants of firms’ ability to capture value, in that they determine bargaining power. Firm-level sources of value appropriation relate to the firm’s ability to differentiate itself within its industry from competing alternatives and increase switching costs that are firm-specific. Sources of such differentiation include the possession of specialized knowledge and mutual dependency between buyers and sellers. Bargaining power is determined also by the market scope of participants, which affects the scarcity or abundance of their capabilities in particular locations—what Baldwin (2012) named ‘smile curve economies’ (Brandenburger and Stuart 1996; MacDonald and Ryall 2004; Chatain and Zemsky 2011; Adegbesan and Higgins 2011; Molloy and Barney 2015).

It follows from these differences that value creation and value appropriation require different skills. Value creation is determined by firms’ ability to access factors of production and utilize them effectively. Value appropriation rests on firms’ ability to differentiate themselves by effectively engaging with customers, identifying their value perception (demand) and delivering the products and services that will meet them.

Value creation and value appropriation differ also in terms of the relationships among the participants associated with them. Value is created through collaboration, and it is an activity in which all participants have shared and joint interest—increasing the combined value created, at its essence a win/win situation. Moreover, since value is created jointly and is dependent on the combined characteristics of all the participants, there are reciprocal interdependencies among them, whereby each participant depends on adjoining participants to perform its own role. Value appropriation in contrast represents competing interests, that is, who gets bigger shares of the combined value created and, as such, entails zero-sum solutions, whereby interests of different participants are in competition with each other. Here the outcome is dependent on the strength and negotiating power of various participants relative to each other. Therefore, participants in supply chains are tied up in simultaneous relationships of collaboration and competition (Brandenburger and Stuart 1996, 2006; MacDonald and Ryall 2004; Adegbesan and Higgins 2011).
The challenge in creating sustainable supply chains is striking a balance between the opposing forces of collaboration and competition that underlie the twin dynamics of creating and appropriating value. Striking such a balance is particularly challenging when there are power asymmetries among different participants in the chain, whereby the outcome of the negotiations could be dictated by the powerful participants. Table 3 presents the defining features of value creation and value appropriation and highlights the differences between them.

Table 3. Value Creation and Value Appropriation: Defining Features

<table>
<thead>
<tr>
<th></th>
<th>Value creation</th>
<th>Value appropriation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>Net value added to a production chain</td>
<td>Share of gains of total value created by a production chain</td>
</tr>
<tr>
<td><strong>Measures</strong></td>
<td>(Sales – purchases)</td>
<td>Profits = (total income – total costs)</td>
</tr>
<tr>
<td><strong>Determinants:</strong></td>
<td>Quality and efficient utilization of factors of production</td>
<td>Consumers view of value; negotiating power vis-à-vis consumers</td>
</tr>
<tr>
<td>Internal to firms</td>
<td>Abundance and quality of factors of production in markets accessible to firms</td>
<td>Industry structure: level of concentration</td>
</tr>
<tr>
<td><strong>External to firms</strong></td>
<td><strong>Skills required</strong></td>
<td><strong>Competitive arena</strong></td>
</tr>
<tr>
<td></td>
<td>Production management</td>
<td>Market for factors of production</td>
</tr>
<tr>
<td><strong>Competitive arena</strong></td>
<td>Market for consumers (internal/external to the supply chain)</td>
<td>Market for consumers (internal/external to the supply chain)</td>
</tr>
<tr>
<td><strong>Relationships among participants</strong></td>
<td>Collaborative (win/win); Interdependencies</td>
<td>Competitive (zero sum game)</td>
</tr>
</tbody>
</table>

Total income = sales, income from tangible/intangible assets.  
Total costs = purchases from other firms; cost of production (labour, capital), asset depreciation, inventory.

2.2 The Participants in Global Supply Chains; Lead Firms and Other Participants

Participants in the value chain differ in their ability to create and appropriate value, depending on their sources of strength, position in the supply chain, and bargaining power (Chatain and Zemsky 2011). Particularly notable in this regard is the distinction between what is known as the ‘lead firms’ (Dedrick et al. 2009, 2011) and the other participants.

Lead firms create, coordinate and manage the supply chain, and hold the ultimate responsibility for the final product. They determine what is to be produced, where, by whom and at what price, and they oversee the circulation of intermediaries among the participants along the supply chain. Their financial, organizational and institutional prowess enables them to mobilize resources and absorb the risk inherent in global supply chains. As those at the front end of the chain, they interact directly with the final consumers and act as the guarantor of quality for them. The lead firms are also the ‘market makers’ for the end products and link the other participants to global markets that are external to the chain, thus commanding the ultimate responsibility for the existence and survival of the chain. Their ability to ensure these outcomes depends on their competitive performance in markets that reside outside the chain. Hence, the success of the lead firms is critical.
for the existence of the chain. In parallel, it is also tightly dependent upon the efficient functioning of the supply chain, creating strong interdependencies among the participants (Sturgeon 2002; Jacobides et al. 2006; Wind et al. 2009; Kunreuther 2009; Dedrick et al. 2009, 2011).

Unlike lead firms, who create value through integration and the bringing together of multiple participants into a coordinated flow of inputs and outputs, other participants create value via specialization. They contribute specific output towards the creation of the final product and are distinguished by their distinctive specialization in a single activity along the chain.

Lead firm differ from other participants also in terms of their bargaining power. A notable source of bargaining power of lead firms, and a prominent feature that sets them apart from most other participants, is their global scope and mobility, which extends the scope of the market available for them and affords them considerable flexibility. Other participants in supply chains are often constrained by national borders, and the scope and terms of their market access are dependent on their governments’ cross-border policies. This puts the lead firms in an advantageous position vis-à-vis other participants. This characteristic is almost a given, not something that other participants, who wish to capture more value can easily reach. Lead firms have access to financial markets and an accumulation of knowledge, skills, technologies and managerial capabilities that make it difficult for suppliers and participants below suppliers to match.

Furthermore, as the creators of differentiated, proprietary products, the lead firms compete in oligopolistic industries characterized by high barriers to entry, with relatively small number of large players. This industry structure stands in contrast to those of most other participants who produce less differentiated products and operate in markets that, to a greater extent, resemble competitive markets. In such markets, firms are much smaller and have minimal ability to command prices for their output that are higher than market price. These differences affect the terms of the negotiation between the lead firms and other participants, and afford lead firms strong bargaining power in appropriating value (Chatain and Zemsky 2011). Table 4 illustrates the vast size differential between the lead firms and other participants in the garment industry.

**Table 4. Size Differential Among Participants in Global Supply Chains:**
The Garment Supply Chain, 5-year average (2011-2015)

<table>
<thead>
<tr>
<th></th>
<th>Sales (export)* Mil. US$</th>
<th>Employment N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh’s RMG Manufacturers**</td>
<td>4.65</td>
<td>1,276</td>
</tr>
<tr>
<td>Leading global apparel companies</td>
<td>3,984</td>
<td>30,567</td>
</tr>
</tbody>
</table>

Own calculation based on data in Appendix 1 and Figure 8.

* The entire production of Bangladesh manufacturers is exported; therefore, export figures represent their total sales.
**Data for Bangladesh’s manufacturers are averages across the population of Bangladesh’s RMG manufacturers.
Chapter 3   Findings of the Analyses of the Garment Supply Chain

Figure 2 describes the value chain of garment production, from the cotton fields and the production of yarn where the initial raw material is produced, to the retail stores that bring the products to the final consumers.

Figure 2. Ready-Made Garment Supply Chain

The figure illustrates the variety of the participants involved in garment production and the nature of their activities. These participants differ considerably in terms of their size, resource needs and sources of differentiation. They operate in industries that vary considerably in terms of their competitive dynamics, industrial structure and the number and nature of the firms competing. Due to these disparities, participants hold a range of positions within the supply chain with substantial
power asymmetries among them that affect the terms of their negotiations with other participants and their ability to create and appropriate value (Gereffi and Memedovic 2003; Dedrick et al. 2009, 2011).

Figure 2 shows that the global garment value chain is made up of two sub-chains. At the broad level, garment production is constructed and managed by global brands and retailers who act as the lead firms; however, with a few notable exceptions, they usually do not own the backward value-creation functions. Garment manufacturers are another player in this value chain, who also have their own supply chain, the one that they construct and control which consists of the backward activities required to create garment. Below we describe the value creation activities implemented by the different participants and the benefits that accrue to them via their participation in the supply chain.

3.1 Value Creation

_Cotton Growers_

Cotton growers produce the raw materials, an essentially undifferentiated commodity, distinguished by the type of cotton that grows in different parts of the world and which are suitable for different kinds of garments, and by government policies that determine market access and the terms of trade. Cotton prices are set in the global market, with minimal if any influence and discretion for individual growers. Cotton growing requires specific weather conditions and arable land; therefore, it takes place in only certain parts of the world and is exported from those locations. The top three cotton exporting countries in 2013 were the US, India and Australia—with a combined market share of about 70% of world export. The major cotton importing countries in 2013 were China, which imported about 45% of world cotton, followed by Turkey, Bangladesh, Vietnam and Indonesia. Since cotton growing is highly sensitive to weather conditions, crops and exports fluctuate considerably year by year and with them also world prices of cotton (The Textile Think Tank 2014).

The annual requirement of raw cotton for textile production in Bangladesh is estimated to be around 2.5 million bales. Local production supplies only about 4%-5% of this demand, while the remaining 95%-96% is fulfilled by import. In 1972, Bangladesh established the Cotton Development Board under the Ministry of Agriculture with the mandate of promoting cotton cultivation in Bangladesh. Although the sector had grown, it had not matched the local demand of textile production that has been growing at a more accelerated pace (Mandol 2008).

_Textile Producers_

Spinners purchase cotton in raw form from the growers and turn it into yarn by cleaning and spinning. Yarn is used by textile producers to produce fabric, either grey or finished, through knitting or weaving, dyeing and printing. According to Bangladesh Textile Mills Association (BTMA), as of 2015, 413 textile mills operate in Bangladesh, producing more than 11 million kilograms of fabric. This represents double the size a decade earlier, when 260 mills produced 5.5 million kilograms, but despite of this impressive growth, local production of fabric does not meet the full demand of local production of RMG; therefore, Bangladesh’s garment manufacturers rely in part on imported textile. According to data collected by the Bangladesh Knit Manufacturers and Exporters Association, light knitwear production is based on 80% locally produced fabrics. The
BMGEA estimates that the corresponding figure for woven manufacturers is 35%-40%. Some of Bangladesh’s textile producers are vertically integrated backward and assume internally the spinning.

Accessory Producers
In addition to fabrics and wool, garment producers use various kinds of accessories, including zippers, buttons, labels, hooks, hangers, elastic bands, thread, backboards, butterfly pins, clips, collar stays, collarbones and cartons. Using accessories provides the manufacturers opportunities to add value, differentiate their garment and command high prices. Thus, they regard the value of the accessories to be on par with that of the fabrics and allocate substantial resources to the purchase of accessories. Industry analysts estimate that accessories account for about 35% of the direct purchases of manufacturers towards the production of finished garment (Mirdha 2011).

The growth of garment production in Bangladesh spurred the development of local accessories production, which has accelerated rapidly in recent years and has come to replace most of the imported accessories on which Bangladesh manufacturers relied in earlier years, making Bangladesh almost self-sufficient in accessory manufacturing. According to data from Bangladesh Packaging Manufacturers Association, in 2015, 1,379 packaging and accessories factories operated in Bangladesh, up from 500 in 2000 and 1000 in 2010. About half of these factories produce packaging material (e.g., corrugated cartons). The Association estimates that locally produced accessories account for about 15%-20% of Bangladesh’s garment exports.

Garment Manufacturers

The Nature of the Business
Manufacturers create value by transforming fabric (or wool in the case of sweater producers) purchased from textile and wool producers—in Bangladesh or elsewhere—into ready-made garments. The sources of value creation of the manufacturers lie in generic manufacturing skills that reduce transaction costs and build economies of scale. The value added by the manufacturers is the difference between fabric and other intermediaries (e.g., accessories, packaging), as well as machinery that they purchase and the price at which they sell ready garments to the brands and retailers.

Some manufacturers have expanded through backward integration and internalized the production of fabric and accessories. The production of fabric and garments, however, takes place in different facilities with shared ownership. Bangladesh’s government has actively encouraged local purchasing of fabrics and backward integration by garment manufacturers by offering cash incentives. The intention is to reduce imports and encourage the growth of local industry. The prevalence of the backward integration by garment producers is not known, but industry observers suggest that it is not widely spread and common mostly among the larger garment producers.

The garment industry in Bangladesh has two main sections: knitted garments (e.g., sweaters, T-shirts) and woven garments (e.g., shirts, trousers). The industry started with production of woven garments, carrying out the characteristic cut, make and trim (CMT) segments of work. Over time, however, knitwear has become more important in the product mix, going up from just above a 15% share of exports in 1993 to more than 50% share of exports in 2015 (BGMEA). The knitwear
segment’s rapid growth in recent years could be the result of the ‘China effect’, as higher wages in China have led to the shift of some labour-intensive production segments to other countries (see Chandra et al. 2013 for a comprehensive analysis of this phenomenon; also see Frederick and Staritz 2012 for an analysis vis-à-vis garments). An important factor in the changing composition is the higher local value added in knitwear compared to woven wear. With yarn now produced locally, value added is 75% in the case of knitwear as against 25% in the case of woven wear.

In terms of the production network, RMG firms in Bangladesh can be divided into three tiers. Tier 1 firms are those that secure orders from buyers or intermediaries. They are generally the larger units, usually employing two thousand or more workers. There are about one thousand Tier 1 firms, accounting for some 20% of the total number of garment firms. Tier 2 firms are medium-size units with a few hundred workers. They are sub-contracted by Tier 1 firms and are often used to fill capacity gaps or to produce specific lines. The important characteristic of these firms, however, is that most of them do not get orders directly from buyers. Some medium-size units do get direct orders when the buyers are not able to complete their buying requirements from the larger units. Tier 3 firms are those supplying inputs, various items of trim or accessories. With the growth of Bangladesh’s garment industry, suppliers of various accessories, such as zippers, set up factories within the country using the foreign direct investment (FDI) route.

The Local Value Chains
The local RMG value chain refers to the value created in different stages, starting from primary raw material (which could be cotton, yarn or fabric) to the final RMG product ready to leave the Bangladesh border. This chain presents the share of different costs in the value of a product. The global value chain starts after the product crosses the Bangladesh border and ends at the final consumer of the RMG product. For example, regular denim jeans sold to buyers for the price of $6.5 would have the value chain illustrated in Figure 3. It is noted that 53% of this value is created by the materials (cotton fabric and accessories), 28% value is created by cutting and making and the remaining 19% include transport cost, administrative cost, profit and so forth. In case of cotton T-shirts and woven shirts, the general trend remains the same. The largest cost component is raw materials/inputs (half to three-fourth of the total production value), followed by the cutting-or-making (CM) cost (one-third to one fourth), and administrative and other costs (less than one fifth) as illustrated in Figure 4. Thus, to increase competitiveness, the producers can either reduce material cost or reduce labour cost at a certain level of technology.
Figure 3. Value Chain of Denim Jeans with FOB Price of $6.5

Material (53%)
- Cotton fabric (75%)
- Accessories (25%)

Cutting and Making (28%)
- Design, cutting, sewing and assembling (80%)
- Ironing and finishing (20%)

Others (19%)
- Transport (23%)
- Administrative cost (31%)
- Profit (19%)
- Others (27%)

Authors’ calculations based upon interviews with respective producers in Bangladesh.

Figure 4. Value Chain of Cotton T-Shirt with FOB Price of $2.5 to $3

Material (70%)
- Cotton fabric (94%)
- Accessories (6%)

Cutting and Making (22%)
- Design, cutting, sewing and assembling (80%)
- Ironing and finishing (20%)

Others (8%)
- Transport (27%)
- Administrative cost (26%)
- Profit (16%)
- Others (31%)

Figure 5. Value Chain of Woven Shirt with FOB price of $4.50

Material (54%)
- Cotton fabric (98%)
- Accessories (2%)

Cutting and Making (30%)
- Design, cutting, sewing and assembling (82%)
- Ironing and finishing (18%)

Others (16%)
- Transport (8%)
- Administrative cost (32%)
- Profit (21%)
- Others (39%)

Authors’ calculations based upon interviews with respective producers in Bangladesh.
The international value chain would cover the costs of transporting the goods from the Bangladesh border to the destination port, customs duty, local transport from port to the warehouse, costs added by wholesaler and then by the retailer.

The Production Process

After getting an order settled, manufacturers begin the production process of RMG products by purchasing fabrics, either from local market or through import. The firms who have backward linkages of converting cotton to produce fabrics enjoy cost and time advantages in this regard. Design is provided by the buyer. The buyer sends the technical sheet and artwork of an order. By following technical sheet and artwork, a pattern of each garment item should be made. Then the producers create fit samples following the detailed instruction about the garments style. The next step is to send the fit samples to the buyer for approval.

The manufacturers initiate their RMG production with finished fabrics except those who have internalized the conversion of cotton into fabrics. Finished fabrics have three steps or levels: the first level is for converting cotton to yarns (i.e., spinning), the second level is for converting yarns to grey fabrics (i.e., weaving), and the third level is for converting grey fabrics to dyed, printed, finished fabrics (i.e., dyeing, printing, or finishing).

Fabrics have to be cut according to the garment’s marker—a very thin paper which contains all the parts of a particular garment. Then, all these parts are joined to make a complete product. After completing the sewing process, a garment undergoes inspection to ensure it is fault free. At this stage, the required ironing and finishing steps are performed. The complete garments are then inspected again according to the buyer’s specification. Complete garments are packed in poly bags per the specification of the buyers. To minimize damage, packed garments are cartoned according to buyer’s instructions. After completing all the required processes, finally, garments are shipped to the buyer.

Manufacturers start producing after receiving orders from lead firms so that the largest part of their costs—the purchase of fabrics and other intermediaries—can be made upon securing the order, diminishing and maybe eliminating altogether inventory costs. However, even though the manufacturers produce by orders, buyers may still refuse to take delivery of the final product due to reasons such as failure to meet delivery time (often for reasons that are beyond the control of the manufacturers) or failure to meet the exact specifications (e.g., colours do not match exactly). In such situations, to recuperate some of their losses, manufacturers sell the merchandise in special domestic markets for rejected RMG goods. Estimates by industry practitioners suggest that sales on these markets account for about 1% to 2% of the total garment production in Bangladesh. Prices in these markets vary, depending on the quality of the rejected products, but in general are considerably lower than the tag price.

---

6 There are some exceptions for this when manufacturers use standard fabric in their production. These manufacturers keep stock in bonded warehouse facilities, where garment exporters can store imported raw material without paying duties and taxes.
Cost of value creating activities by manufacturers

In the absence of the firm-level data desired for the analyses, we rely on publicly available aggregated data to outline a picture of the aggregated cost structure of Bangladesh’s garment manufacturers. This exercise naturally hides variations across individual manufacturers, and its results should be interpreted with this feature in mind.

We base the calculation on the Bangladesh Garment Manufacturers and Exporters Association’s (BGMEA) estimate of the cost breakdown of the total FOB cost\(^7\) of Bangladesh manufacturers. According to this estimate, the total cost splits between 75% purchases of raw materials, intermediaries and machinery, with the remaining split between 15% labour costs and 10% tax and overhead costs.

We calculate the cost of purchases based on import and local production data, and extrapolate from these figures the other costs. As noted above, garment production in Bangladesh consists of two major categories: woven and knitwear, with the latter split between heavy knitwear (sweaters) and light knitwear. These categories use different raw materials and intermediaries and have different production processes. The major input used in the production of sweaters is wool (synthetic and fibre). Woven production is based on fabrics and sewing threads. Both products use accessories.

These raw materials and intermediaries are purchased both locally and via imports. All the wool used in the production of sweaters is imported. Fabric and sewing threads are purchased both locally and via imports, in different combinations for different product categories, and accessories are purchased mostly locally.

Imports data are available at a six-digit level and allow the identification of imports related to garment production with precision. Data on local production of fabric are not collected and not known\(^8\). In the absence of hard data, we calculate an industry-average share of locally purchased fabric based on BGMEA estimates of local purchases by different product categories, multiplied by the respective category size (based on export shares) of the shares of locally purchased fabrics (Table 5).

---

\(^7\) FOB (Freight on Board or Free on Board) price is the price paid by a buyer to a manufacture ‘at the factory door’, that is, before shipping and import fees. As such, it is treated as the price for all labour and non-labour production costs.

\(^8\) The industry body overseeing fabric production is Bangladesh Textile Mills Association. It does not collect data on local production.
The production of accessories for garment is categorized by 36 different kinds of accessories including buttons, zippers, poly bags, threads and hangers. Data on local production of these items is collected in the aggregate, known as ‘deemed export’, because it is sold to exporting RMG manufacturers and assembled in a finished product that is exported. These data have been collected annually for the last decade, and we use them to calculate the costs involved in accessories purchases.

In addition to these purchases, which constitute the manufacturers’ variable purchases usually placed upon receiving an order, garment production also requires fixed investment in special machinery. All these machineries are imported, enabling us to measure their costs with precision based on import data.

We have included an additional category for purchases of items such as chemicals (e.g., washing chemicals and others) and dyes, leather patches, different types of embellishments, metal belts, poly bags and other packaging material, price tags and the like, as well as generic machines and parts used for the operation of the garment machinery. It is not possible to identify the precise amounts of these purchases at the aggregate industry level because they constitute small parts of larger categories and the shares that are purchased by garment manufacturers are not known. To account for these purchases, we add 25% of the total of the other purchases as miscellaneous purchases. The sum of the fabrics, accessories, machinery and miscellaneous purchases forms the total purchases.

We have used the BGMEA estimates of the cost structure of garment manufacturers to extrapolate the total costs from these figures. From that we have calculated the cost of labour (15%) and taxes and overheads (10%). We have divided these amounts by the number of establishments to receive average cost per establishment (Table 6). The time window for this analysis is determined by data availability. Harmonized System (HS) codes at the six-digit level, which classify the import data, are only available since 2011-12 fiscal year. Data for previous years are available only at the two-digit level. 2014-15 data were the latest available at the time of collection.

Table 5. Locally Purchased Fabric by Bangladesh’s Garment Manufacturers

<table>
<thead>
<tr>
<th></th>
<th>% total garment exports, 4-year average (2011-2015)</th>
<th>Raw material and intermediaries used in the production</th>
<th>Locally-purchased fabric as % of total purchased fabrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knitwear</td>
<td>49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of which</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light knitwear</td>
<td>37%</td>
<td>Fabrics</td>
<td>80%</td>
</tr>
<tr>
<td>Heavy knitwear</td>
<td>12% (sweaters)</td>
<td>Wool</td>
<td>0</td>
</tr>
<tr>
<td>Woven</td>
<td>51%</td>
<td>Fabrics</td>
<td>35-40%</td>
</tr>
<tr>
<td>Industry average</td>
<td></td>
<td></td>
<td>48%</td>
</tr>
</tbody>
</table>

Table 6. Cost Breakdown of Value Creation Activities: Bangladesh’s Manufacturers, in Mil. US$

<table>
<thead>
<tr>
<th>Purchases</th>
<th>Breakdown of purchases</th>
<th>Labour</th>
<th>Taxes &amp; overheads</th>
<th>Total costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fabrics(^9) (of which imports(^10))</td>
<td>Accessories</td>
<td>Capital machinery for garment(^1)</td>
<td>Misc.</td>
</tr>
<tr>
<td>% total costs</td>
<td>75%</td>
<td>6,569.1 (3,416.0)</td>
<td>3,075.0</td>
<td>541.6</td>
</tr>
<tr>
<td>2011-12</td>
<td>12,732.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012-13</td>
<td>14,488.5</td>
<td>7,059.7 (3,671.0)</td>
<td>4,100.0</td>
<td>431.1</td>
</tr>
<tr>
<td>2013-14</td>
<td>14,214.1</td>
<td>6,098.9 (3,171.4)</td>
<td>4,750.0</td>
<td>522.4</td>
</tr>
<tr>
<td>2014-15</td>
<td>17,783.4</td>
<td>7,976.0 (4,147.5)</td>
<td>5,600.0</td>
<td>650.8</td>
</tr>
<tr>
<td>4-year average</td>
<td>14,804.5</td>
<td>6,925.9 (3,601.5)</td>
<td>4,381.2</td>
<td>536.5</td>
</tr>
</tbody>
</table>

4-year average per establishment\(^12\) (’000 US$)

| | 3,082.4 | | | 616.5 | 411.0 | 4,109.9 |

Memorandum items: Average annual exchange rate taka/US$

| | 2011-12 | 75 |
| | 2012-13 | 81 |
| | 2013-14 | 77 |
| | 2014-15 | 80 |

Own calculations based on import data from Bangladesh Bank, HS 6-digit codes and establishment data from BGMEA. http://www.bgmea.com.bd/home/pages/TradeInformation

The cost estimates in Table 6 might reflect bias on several grounds. For one, parts of the analyses are based on estimated values, including the shares of fabric purchased locally and the quantities of miscellaneous purchases. However, these estimates are well informed, made by the most knowledgeable industry analysts whose expertise offers confidence in the precision of the

---

\(^9\) The ‘textile fabric’ category includes the following HS 6-digit codes: 074015 (Articles of apparel & clothing accessories etc.), 115007 (Woven fabrics silk or silk waste), 115100 (Wool, fine or coarse animal hair), 115204 (Cotton sewing thread), 115207 (Cotton yarn other than sewing thread), 115208, 115209, 115210, 115211, 115212 (Woven fabrics of cotton, various kinds), 115401 (Sewing thread of man-made filaments), 115407 (Woven fabrics of synthetic filament yarn), 115408 (Woven fabrics of art filia yarn), 115500 (Man-made staple fibers), 115600 (Wadding, felt and nonwovens; special yarns etc.), 115804 (Tulles & other net fabrics), 115806 (Narrow woven fabrics), 115807 (Woven fabrics of synthetic filament yarn), 116000 (Knitted or crocheted fabrics), 126603 (Parts, trimmings & accessories), 157319 (Sewing/knitting needles, etc.).

\(^10\) Import figures are fresh Letter of Credit (LC) opening figures.

\(^1\) The ‘capital machinery for garment’ category includes the following HS 6-digit codes: 168445 (machines preparing textile fibers), 168446 (weaving machines, looms), 168447 (knitting machines stitch bonding), 168452 (sewing machines).

\(^12\) When calculating the average per establishment, we use the BGMEA data on the number of establishments in existence every year. However, while these are the numbers of registered establishments, not all of them are necessarily in operation all the time. It is common that establishments, and particularly the smaller ones, cease production temporarily for a variety of reasons. Because of the temporary nature of these closures, such establishments not removed from the list.
estimates and is likely to minimize potential bias. Nonetheless, by their very nature, they can only be treated as estimates and do not match the precision of hard data.

Other potential biases could originate in the inability to identify users of imported and locally produced fabrics and accessories outside garment manufacturers. For instance, fabrics are used also for home textile (e.g., carpets, towels, bed spreads). In the absence of data on the shares consumed by garment producers, we assigned the totals entirely to them. This is likely to bias the purchases upwards. However, there is reason to assume this potential bias is insubstantial because other users are very small in comparison to garment manufacturers.

Some additional costs could have been omitted because they are not systematic and cannot be accounted for. Example include cost incurred as a result of delay in receiving payment. Nor do we account for depreciation costs of machinery that are subject to considerable variations across machines and factories and cannot be incorporated systematically in the analysis. Given the small share of these costs in total costs we assume that a potential bias on this ground would be minimal.

Lastly, fluctuations of the Bangladesh taka in relation to the dollar—the currency which dominates import purchases—may distort comparability over time. We believe this potential bias has little impact because the fluctuations during the study period were very small (Table 6).

**Lead Firms**

At the front end of the garment supply chain are the lead firms—represented by brands and retailers—who engage directly with the final consumers. This diverse group includes firms that vary in terms of their business models, the consumers they seek to reach (e.g., luxury, high street and discounters) and the way they organize their production. A small number of firms control and manage the entire chain, including the production. Notable examples include Zara and, to an extent, Ralph Lauren. These firms have different supply chains with different relationships with suppliers and varying approaches to sourcing (Bruce and Daly 2006), and as an overall group, lead firms may include retailers who sell fashion as well as brands that internalize the retail function, blurring the line between brands and retailers. The value creation activities of the lead firms are diverse, ranging from brand creation to the management of the supply chain, and the retail function (Figure 6).
Figure 6. Value Creation Activities of Lead Firms

<table>
<thead>
<tr>
<th>Functions performed</th>
<th>Value Creation Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand management</td>
<td>Demand forecast</td>
</tr>
<tr>
<td></td>
<td>Management of the global circulation of merchandise</td>
</tr>
<tr>
<td></td>
<td>Sales management</td>
</tr>
<tr>
<td>Design, Marketing</td>
<td>Internal/outsourced forecasting, Big data (social media) analysis, Placing orders</td>
</tr>
<tr>
<td></td>
<td>Purchase garment, Shipping to markets, Custom clearance, Warehouses/distribution centres,</td>
</tr>
<tr>
<td></td>
<td>In-land shipping (to stores/final consumers [e-commerce])</td>
</tr>
<tr>
<td></td>
<td>Select retail space, Management consumers’ sales experience, Pricing strategy, Inventory management</td>
</tr>
</tbody>
</table>

**SUPPLY CHAIN CONSTRUCTION AND MANAGEMENT**
- Manufacturers selection
- Production oversight
- Quality control

**RISK**
- Fixed/variable costs
- Inventory control
- Reputational risk

**GOVERNANCE**
- of the Supply Chain

**Inputs/Resources**
- Design and marketing staff, Marketing expenditure
- Forecasting department
- Local agents/Outsourcing department
- Costs of circulation, Outsourcing department
- Retail rental costs, Costs of sales, Sales staff, Inventory cost

**Brand Management**
One of the most important value creation activities implemented by the lead firms is the creation and maintenance of the brand. Brands embody a promise of value, quality and benefits that differ from those of the competitors and create expectations regarding future performance. As Godart expressed it, they ‘...infuse meaning and symbolic context into garments, turning pieces of apparel into symbols of identities, personalization and expression of individuality via fashion. . . . They shape fashion trends...’ (Godart 2012, p. 12), in essence representing all the things that transform a piece of garment into more than its functional purpose and give it what Professor White of the New York Fashion Institute of Technology describes as ‘the persona of the brands’ (private communication, NYC, April 12, 2016).

Different indicators are used to measure brand value, seeking to quantify the factors that make a brand appeal to consumers such that they are willing to pay a premium to acquire it. These

---

13 The commonly used accounting measures for assets of this kind are goodwill, the difference between a firm’s market value and its book value, and intangible assets. These usually refer to assets such as patents, trademarks, copyrights, formulas, and as such are not applicable to the fashion industry. In addition, differences in accounting standards and reporting procedures across countries, in the context of our study–between the US GAAP and the IFRS–jeopardize the comparability of these measures across global fashion companies that employ different accounting standards. We rely instead on the commonly used indicator in the industry–brand value.
measures rely on different conceptualizations of brand value and employ different methods to measure it (Hague 2010; Seddon 2013). In Table 7 we present the brand value estimates for the world’s largest (by brand value) apparel companies compiled by BrandZ, one of the most prominent such measures. Its evaluation method is based on a quantitative research of two million consumers in 30 countries combined with financial analysis that quantifies asset values. The data show vividly the value of brands to apparel firms—a value greater than all their other assets combined.

Table 7. Brand Value: World’s Largest (by Brand Value) Apparel Companies, 2015

<table>
<thead>
<tr>
<th>Brand</th>
<th>Mil. US$</th>
<th>% Total assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zara [Inditex]</td>
<td>22,036</td>
<td>1,915</td>
</tr>
<tr>
<td>H&amp;M</td>
<td>13,827</td>
<td>145</td>
</tr>
<tr>
<td>Uniqlo</td>
<td>8,074</td>
<td>n.a.</td>
</tr>
<tr>
<td>Next</td>
<td>5,973</td>
<td>129</td>
</tr>
<tr>
<td>Burberry</td>
<td>5,722</td>
<td>278</td>
</tr>
<tr>
<td>Ralph Lauren</td>
<td>5,643</td>
<td>103</td>
</tr>
<tr>
<td>Hugo Boss</td>
<td>4,320</td>
<td>220</td>
</tr>
<tr>
<td>Michael Kors</td>
<td>3,815</td>
<td>333</td>
</tr>
<tr>
<td>Lululemon</td>
<td>2,898</td>
<td>300</td>
</tr>
<tr>
<td>Tommy Hilfiger</td>
<td>2,580</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Millward Brown BrandZ, IQ Capital

A crucial element in the value creation activities of lead firms, and most notable in relation to the creation and maintenance of the brand, is their ability to recruit and keep human capital: highly skilled labour whose creative minds and advanced managerial skills enable them to create and sustain value. These high-skill, high-cost employees, while representing a relatively small part of lead firms’ employees, are nonetheless the major determinants of value creation and account for major part of the resources required to create value. According to data from the US Bureau of Labour Statistics, they account for about one-third of the 1.9 million workers employed in 2015 in the US apparel industry, spread among fashion and graphic designers, market research analysts, marketing specialists, computer professionals, and fabric and apparel patterns makers. The remaining two-thirds are retail employees, a majority of whom are shop-floor, low skilled, relatively low paid employees, but they also include higher skilled ones, such as store managers, accountants, auditors, buyers, purchasing agents, marketing and sales managers.

In Appendix 2, we present the cost of labour in the US for the major professions employed by apparel companies. Similar patterns are apparent among global brands elsewhere. According to Apparel Magazine, the average employment among the world’s largest apparel companies in the 2010s is more than 27,000 employees, spread across these and similar occupations.

**Demand Forecast**

The process that brings a piece of garment to the market realized by lead firms begins with demand forecasting, a challenging task in the fashion industry. Market trends form and change very rapidly and are subject to the vagaries of the weather, films, pop stars and football celebrities. According
to NPD, a US-based market research company, ‘No other industry changes as rapidly as fashion. What’s hot today is blasé tomorrow. Innovation becomes retro. Seasons change. Hemlines rise and fall. . . . A celebrity makes a fashion statement on the red carpet and suddenly your financial statements are covered in red.’ (NPD 2016). Moreover, fashion purchases are often ‘impulse purchasing’, decisions made at the point of purchase, making them difficult to forecast (Birtwistle et al. 2003; Choi and Sethi 2010; Nenni, Giustiniano and Pirolo 2013; Ellis 2013). At the same time, the combination of long lead times (orders are placed between 6 to 12 months and, in some cases, up to 18 months before merchandise arrives in the stores) and short life cycle and short selling seasons make the need for understanding future trends crucial in the fashion industry.

Lead firms allocate substantial resources to demand forecasting. The dominant practice is to rely on specialized forecasting companies that predict the colours, fabrics and styles for upcoming seasons and the likely magnitude of demand. In 2011, the fashion trend-forecasting industry was estimated to have a global market value of $36 billion and was named ‘the new growth business.’ (Birtwistle et al. 2003; Barnett 2011; Nenni et al. 2013).

Getting accurate forecast is critical for firms’ ability to strike the delicate balance between excess inventory, which causes overstock and blocks the space for demanded products on the one hand, and insufficient inventory that results in lost sales and damages the brand reputation on the other hand (Sen 2008). The industry is so occupied with this challenge that Apparel Magazine has recently referred to it as ‘the single worst scenario a retailer can face...’ and as ‘retailer’s biggest fear’ (Apparel Magazine 2015). To minimize the likelihood of such outcomes, firms tend to order slightly more than the anticipated demand and are often left with unsold merchandise at the end of the season.

Management of the Circulation of Merchandise in the Supply Chain
The next step in the management of the supply chain includes selecting the outsourcing strategy and the terms of the engagement with the manufacturers, whether direct or via an agent. The direct model requires identifying and selecting specific manufacturers and for many companies also includes some level of involvement with production in the form of quality control or safety regulations.

As the orchestrators of the supply chain, lead firms bear the costs of the circulation of goods within the supply chain. After purchasing the final goods from the manufacturers, the lead firms ship them (mostly by sea) to the market and oversee custom clearance in the ports of destination. See Appendix 3 for import duty on RMG to the major markets of Bangladesh’s production–Europe, Japan and the US. The rise and fall in the cost of energy as well as regulatory changes that increase the costs of crossing borders cause substantial fluctuations of these costs\(^{14}\). Freight cost from Bangladesh to major destinations is estimated by BGMEA to be in the range of 16% of the price of the merchandise.

Merchandise is then shipped in-land to distribution centres, which might be either wholly-own (most common among the largest lead firms, notably in mature markets) or outsourced to what is

\(^{14}\) The recent introduction of new seaborne shipping rules, which requires shippers to verify container weights prior to loading per revised regulations on Safety of Life at Sea (SOLAS) is a case in point. SOLAS is estimated to raise the cost of trade by approximately 14% (Donaldson 2016b).
known in the industry jargon as Third Party Landers. The cost of establishing a modern, advanced distribution centre of 75,000 square feet is estimated by industry analysts to range between $25-$50 million (Mr Jordan Pious, Private communication, New York/Boston, March 2016). From the distribution centres, the merchandise is shipped to the stores or, in the case of on-line purchases, directly to the consumers. The complexity and cost of this activity has increased considerably with the growth of online shopping and the need to ship individual items to multiple locations. Although, to some extent, this cost increase might be weighted by the reduction in the high costs of brick-and-mortar retail, the predominant tendency appears increasingly to maintain so-called multichannel distribution, whereby consumers can simultaneously shop off and online. The most successful brands, such as Zara and H&M, continuously increase the number of physical stores.

Sales and Pricing
The dominant contemporary trend is for brands to assume the retail function, and most of the largest global brands operate their own stores, seeking to control the entire shopping experience and treating it as an important part of their value creation activities (Sen 2008). In turn, large retailers increasingly develop private label brands which they treat as full-blown brands, to be sold exclusively in their stores, and to support them with marketing programs designed to create clearly defined images. For example, Macy’s and Wal-Mart own, respectively, six and 14 private labels.

Establishing and running a retail network represents a major source of value creation by lead firms. Appendix 4 presents information about the size of these firms’ global retail network. In Appendix 5, we present data on retail rental prices in major metropolitan cities around the world, where global brands operate their stores.

A critical part of the sale is pricing strategy. Selecting the price point that generates the highest sales and is consistent with firms’ objectives and promotion strategy represents a major challenge. Lead firms invest substantial resources in understanding product-price elasticities and closely monitor demand changes and market movement to make informed choices about prices throughout the life cycle of a given item. Prices in the store may change as frequently as once a week and, for some items, even more frequently (NPD 2016; Carroll 2012).

Industry analysts estimate that at most 20%-40% of merchandise is sold for the full price set up at the time of entry to the market. Discounting is vast and has increased in recent years with the fast fashion trend in which rapid turnover of merchandise has become a competitive imperative in and of itself. The spread of online shopping has created a competitive environment in which consumers are more reluctant to pay full prices than ever before (Potts 2016).

Supply Chain Management
Lead firms are crucially dependent on the supply chain for their survival, and the ability to manage it effectively is a major determinant of their competitive performance. An article in The Sourcing Journal, an influential business publication, referred to brands’ and retailers’ supply chains as ‘the lifeblood of their organization’ (Donaldson T. 2016c). As noted, brands express a promise, and firms’ ability to deliver the promise hinges on the quality and efficiency of their supply chains. Such is the importance of the supply chain that the Apparel Magazine, a leading industry magazine, expressed the view that ‘Apparel brands don’t compete—their supply chains compete.’ (Apparel Magazine 2016). Other industry experts concur: ‘...The main competition is not between
companies, but between networks, and the best supply chain will win’ (Wind, Fung and Fung 2009). Indeed, the industry top performers—Zara and H&M—both excel in the management of supply chain (albeit of very different structure). In 2016 H&M and Zara were ranked number five and six respectively in Gartner’s ranking of world’s top 25 companies in terms of supply chain management, the only apparel companies to feature in the list. This speaks for the competitive value of the supply chains.

The value of efficient management of the supply chain has increased considerably with the growing demand for frequent changes of merchandise in the store (Sen 2008; Choi and Sethi 2010). The supply chain plays a key role in enabling firms to achieve this imperative. Speed has become the new competitive edge in the fashion industry, giving rise to what is known as ‘fast fashion’ brands (Zara, H&M, Uniqlo and Primark among others), who attempt to deliver fashion on the basis of ‘real-time’ demand and replace merchandise as frequently as on a weekly basis. These firms are the industry’s top performers, illustrating the premium that consumers put on fast change of merchandise in the stores (Bruce and Daly 2006; Gunasekaran et al. 2008).\footnote{The pace of the industry had further accelerated recently with the spread of the ‘see now buy now’ trend, whereby brands sell their merchandise during fashion shows. In the past, items presented in fashion shows were put for sale in the next season, usually about six months later.}

Lead firms also incur substantial resources in setting up the global supply chain and connecting with the manufacturers. The predominant mode for the implementation of this interaction is through what is known in industry jargon as ‘direct sourcing’, that is, the establishment of wholly-owned local offices in the producing countries. About 70% of Western buyers in Bangladesh surveyed by McKinsey source directly, driven by the intention to establish direct relationships with local manufacturers (McKinsey 2011). Their local agents, known as buyers, implement this function. The buyers represent the brands in the manufacturing countries and, in this capacity, are responsible for selecting the manufacturers and managing the relationships with them, including price- and lead-time setting as well as quality control. Typically, the buyer operations are wholly-owned subsidiaries of the lead firms, employing for the most part expatriates from the parent company or its affiliates elsewhere (Lopez-Acevedo and Robertson 2016).

Our informal interaction with a number of buyers in Bangladesh—among them H&M, that operates the largest buying function by a foreign brand in Bangladesh—offers anecdotal suggestions that buyers are heavily involved with the activities of the manufacturers; they visit factories frequently and maintain a hands-on approach to ensure quality standards and labour conditions. They generally appear committed to Bangladesh, taking a long-term view of their presence in the country and, in most cases, also of their relationships with manufacturers.

\textit{Risk Management}

A major source of value creation by the lead firms is their assumption of the risk associated with the construction and management of the supply chain. Risk confronted by the lead firms originates in various sources. On the supply side, as supply chains have become more complex and geographically spread, the risk associated with the management of such operations and the flow of goods and intermediaries among them has increased considerably (Kunreuther 2009; Bishop 2016). British Standards Institution’s (BSI) Global Supply Chain Intelligence estimates that in 2015 alone, risk cost $56 billion, originating in losses on the ground due to cargo theft, natural
In recent years, the Accord is a five-year legally binding agreement between global brands and retailers and trade unions designed to build a safe and healthy Bangladeshi RMG industry. It has been signed by more than 200 apparel brands, retailers and importers from over 20 countries in Europe, North America, Asia and Australia. Signatories include also two global trade unions, eight Bangladeshi trade unions and four NGO witnesses. Three years on, substantial progress has been reached towards the establishment of safe work conditions in Bangladesh’s factories.  

Moreover, unlike that of other participants in the supply chain, most of the costs of lead firms—including the costs of brand building, retail, and labour—are fixed, at least in the short run, further increasing their risk. Retail leases are typically signed for a period of 10 to 20 years, with severe financial punishment for premature termination. Investment in brand building is by its very nature long term and largely fixed. And with the exception of shop-floor employees in the stores which account for small shares of labour costs, employment by the lead firms, in its various occupations and professions, is permanent. These employment relationships are more permanent than those of other participants in the supply chain. For instance, the employment relationships of Bangladesh’s garment manufacturers with a majority of their labour force are much more flexible and can be adjusted with minimal cost (e.g., personnel could be terminated by paying one to three months of salary) to fluctuations in demand. Following the passage of the 2006 labour law, employment in Bangladesh’s garment sector is more strictly regulated than that in most other sectors of the economy but still highly flexible compared to that in the markets in which global brands operate and recruit their employees.  

On the demand side, the fluctuations of demand for apparel and the challenge of predicting demand, as noted earlier, entail high risk. Unlike other participants in the value chain, who produce by orders, the lead firms assume production with limited ability to anticipate demand.

Corporate Governance of the Supply Chain

Notwithstanding some variations across lead firms, a majority of them—and notably those who seek to establish long-term relationships with their suppliers—typically assume responsibility for governance issues across the supply chain, including of factories to which they have neither ownership ties, and in some cases, nor even permanent contractual relationships. In recent years, particularly after the Rana Plaza tragedy, the governance of the supply chain has become a major source of value creation activity, which consumes considerably more resources.

As part of their efforts to improve labour conditions and safety in garment factories in Bangladesh, global brands and retails created the Accord on Fire and Building Safety. The Accord is a five-year legally binding agreement between global brands and retailers and trade unions designed to build a safe and healthy Bangladeshi RMG industry. It has been signed by more than 200 apparel brands, retailers and importers from over 20 countries in Europe, North America, Asia and Australia. Signatories include also two global trade unions, eight Bangladeshi trade unions and four NGO witnesses. Three years on, substantial progress has been reached towards the establishment of safe work conditions in Bangladesh’s factories.

---

16 This represents an exception in Bangladesh’s labour market, where the share of informal employment was close to 90% in 2010, up from 78% in 2005-6. It is the highest share of informal employment of any country in Southeast Asia (Chalabi 2014).

17 We will return to this issue in the following discussion.
In Table 8, we present a breakdown of the costs incurred by lead firms for their value creating activities. Notable is the very large dispersion around the mean (the large values of the standard deviation [S.D.]) of the cost breakdown, presumably a reflection of the large variations in firms’ business models and competitive strengths. The averages show that the largest share of costs goes to general and administrative costs, which we regard as the overall cost of managing the supply chain, including social costs. This agrees with the critical value of this function for lead firms, as noted earlier. The second most significant element of the costs is inventory. Efficient supply management can assist lead firms in reducing these costs as it enables them to lower the levels of inventory.
Table 8. Cost Breakdown of Value Creation Activities: Lead Firms
World’s Largest (by brand value) Apparel Companies, 5-year Average (2011-2015).
Million US$ (% sales)

<table>
<thead>
<tr>
<th>Brand Building</th>
<th>Selling &amp; Marketing</th>
<th>Supply Chain Management</th>
<th>Distribution and Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advertising</td>
<td>Selling &amp; Staff</td>
<td>Rent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>general &amp; admin.</td>
<td>al</td>
</tr>
<tr>
<td>American Eagle</td>
<td>64 (2.0)</td>
<td>750 (23.2)</td>
<td>277</td>
</tr>
<tr>
<td></td>
<td>83 (2.6)</td>
<td></td>
<td>(8.6)</td>
</tr>
<tr>
<td>Coach</td>
<td>176 (3.8)</td>
<td>1,982 (43.1)</td>
<td>264</td>
</tr>
<tr>
<td></td>
<td>875 (19.0)</td>
<td></td>
<td>(5.7)</td>
</tr>
<tr>
<td>GAP</td>
<td>599 (3.9)</td>
<td>4535 (29.3)</td>
<td>1,22</td>
</tr>
<tr>
<td></td>
<td>599 (3.9)</td>
<td></td>
<td>9 (7.9)</td>
</tr>
<tr>
<td>Levi Strauss</td>
<td>279 (8.7)</td>
<td>1,866 (57.8)</td>
<td>188</td>
</tr>
<tr>
<td></td>
<td>1,002 (31.1)</td>
<td></td>
<td>(5.8)</td>
</tr>
<tr>
<td>Lululemon</td>
<td></td>
<td>379 (8.2)</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.7)</td>
</tr>
<tr>
<td>Michael Kors</td>
<td>20 (0.1)</td>
<td>573 (3.7)</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>42 (0.3)</td>
<td></td>
<td>(0.7)</td>
</tr>
<tr>
<td>Ralph Lauren</td>
<td>220 (4.7)</td>
<td>2,865 (61.5)</td>
<td>419</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(9.0)</td>
</tr>
<tr>
<td>Under Armour</td>
<td>370 (19.5)</td>
<td>886 (46.6)</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2.5)</td>
</tr>
<tr>
<td>Benetton</td>
<td>21 (0.3)</td>
<td>130 (9.7)</td>
<td>264</td>
</tr>
<tr>
<td></td>
<td>142 (2.1)</td>
<td></td>
<td>(3.9)</td>
</tr>
<tr>
<td>Burberry</td>
<td></td>
<td>778 (16.4)</td>
<td>1824</td>
</tr>
<tr>
<td>Hugo Boss</td>
<td>1,086 (42.8)</td>
<td>1,361 (53.6)</td>
<td>452</td>
</tr>
<tr>
<td></td>
<td>563 (15.1)</td>
<td></td>
<td>(17.8)</td>
</tr>
<tr>
<td>Mango</td>
<td></td>
<td>664 (49.6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next</td>
<td>1785 (21.3)</td>
<td>1,102 (23.3)</td>
<td>871</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(23.3)</td>
</tr>
<tr>
<td>Esprit</td>
<td>66 (16.0)</td>
<td>1,075 (28.9)</td>
<td>354</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(9.5)</td>
</tr>
<tr>
<td>Zara</td>
<td></td>
<td>15 (3.7)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.4)</td>
</tr>
</tbody>
</table>

Summary statistics (of the above)

| Costs, Million $: Average | 193 | 491 | 664 | 1,343 | 306 | 525 | 699 |
| S.D.s*                   | 223.05 | 411.20 | 693.17 | 1,165.72 | 362.82 | 416.91 | 967.73 |
| Costs, % sales: Average | 3.1 | 14.0 | 13.1 | 31.2 | 6.0 | 18.2 | 10.8 |
| S.D.s                  | 3.16 | 15.11 | 7.40 | 21.06 | 5.17 | 10.42 | 8.07 |

IQ Capital database
*We use the S.D.s, the method for the calculation of standard deviation of a sample of the population.
Empty cells = n.a.
Based on the cost analyses above, we calculate value creation by Bangladesh’s manufacturers and the lead firms. Value creation is commonly measured by value added, defined as the difference between the value that customers are willing to pay for the finished goods and the cost of purchased goods and services. Subject to data availability, we calculate value added by Bangladesh’s manufacturers as the difference between their total sales and the cost of purchases (Table 9a). The entire sales of Bangladesh manufacturers are generated through export (all their production is exported) and, therefore, we use export figures to calculate value added.

Table 9. Value Creation in the Garment Industry, Million US$

<table>
<thead>
<tr>
<th>Year</th>
<th>Mil. US$</th>
<th>% Sales (exports)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>1.191</td>
<td>0.062</td>
</tr>
<tr>
<td>2012-13</td>
<td>1.379</td>
<td>0.064</td>
</tr>
<tr>
<td>2013-14</td>
<td>3.011</td>
<td>0.123</td>
</tr>
<tr>
<td>2014-15</td>
<td>2.358</td>
<td>0.092</td>
</tr>
<tr>
<td>4-year average</td>
<td>1.985</td>
<td>0.085</td>
</tr>
</tbody>
</table>

Own calculations

Value added by lead firms (see Table 9b) is calculated based on the format for value added statements used in Integrated Reports that is:

\[(\text{Sales of goods} + \text{Income from services}) - (\text{Cost of material} + \text{Cost of service})\]

Although the value added concept originated in the US, the inclusion of value added statements in financial reports is more common in Europe, and particularly in the UK and its former colonies. In 1975, the UK Accounting Standard Steering Committee advanced a formal recommendation for British firms to present value added statements, in addition to the traditional profit and loss accounts, as part of the attempts to present the financial value of sustainability programs (Riahi-Belkaoui 1999).
Table 9b. Value Added by Lead Firms. 5 Year Average, 2011-2015

<table>
<thead>
<tr>
<th></th>
<th>Mil US$</th>
<th>% Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Eagle</td>
<td>1,236.36</td>
<td>0.38</td>
</tr>
<tr>
<td>Coach</td>
<td>1,919.34</td>
<td>0.57</td>
</tr>
<tr>
<td>GAP</td>
<td>3,818.74</td>
<td>0.81</td>
</tr>
<tr>
<td>Levi Strauss</td>
<td>2,473.40</td>
<td>0.66</td>
</tr>
<tr>
<td>Lululemon</td>
<td>-1,178.25</td>
<td>(2.88)</td>
</tr>
<tr>
<td>Michael Kors</td>
<td>6,534.65</td>
<td>0.42</td>
</tr>
<tr>
<td>Ralph Lauren</td>
<td>-5,102.48</td>
<td>(1.97)</td>
</tr>
<tr>
<td>Under Armour</td>
<td>3,079.45</td>
<td>0.81</td>
</tr>
<tr>
<td>Benetton</td>
<td>2,432.32</td>
<td>0.52</td>
</tr>
<tr>
<td>Burberry</td>
<td>717.30</td>
<td>0.55</td>
</tr>
<tr>
<td>Hugo Boss</td>
<td>1,409.43</td>
<td>0.63</td>
</tr>
<tr>
<td>Mango</td>
<td>942.58</td>
<td>0.50</td>
</tr>
<tr>
<td>Next</td>
<td>4,662.31</td>
<td>0.56</td>
</tr>
<tr>
<td>Esprit</td>
<td>3,880.60</td>
<td>0.58</td>
</tr>
<tr>
<td>Zara</td>
<td>1,235.87</td>
<td>0.49</td>
</tr>
<tr>
<td>Average</td>
<td>5,998.19</td>
<td>0.51</td>
</tr>
<tr>
<td>S.D.s</td>
<td>284.59</td>
<td>0.79</td>
</tr>
</tbody>
</table>

IQ Capital database

3.2 Value Appropriation

Value appropriation is commonly measured in this area of research by profits. Below we use the best and latest available data at the time of collection to present the profits of Bangladesh’s manufacturers and lead firms.

Manufacturers
As noted earlier, Bangladesh’s garment manufacturers are privately owned and are not required to disclose accounting information. Thus, their profits are not known. We rely on available industry-level data to estimate average profits per establishment. Total garment exports per establishment are employed as measures of sales. Average cost per establishment were taken from Table 6 above. Based on these data, we calculate average profits and profit margins per establishment (Table 10).
Table 10. Value Appropriation in the Garment Supply Chain. Profit Measures

10a. Bangladesh’s Manufacturers. Average per Establishment

<table>
<thead>
<tr>
<th></th>
<th>Net profits before tax Mil. US$</th>
<th>Net profits after tax(^{18}) Mil. US$</th>
<th>Profit margins % sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>0.391</td>
<td>0.352</td>
<td>9.90</td>
</tr>
<tr>
<td>2012-13</td>
<td>0.374</td>
<td>0.336</td>
<td>9.20</td>
</tr>
<tr>
<td>2013-14</td>
<td>1.312</td>
<td>1.181</td>
<td>20.35</td>
</tr>
<tr>
<td>2014-15</td>
<td>0.414</td>
<td>0.269</td>
<td>4.54</td>
</tr>
<tr>
<td>4-year average</td>
<td>0.623</td>
<td>0.534</td>
<td>11.06</td>
</tr>
</tbody>
</table>

Memorandum items: Average annual exchange rates\(^{19}\).

<table>
<thead>
<tr>
<th></th>
<th>Taka/US$</th>
<th>Taka/EURO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>75</td>
<td>103</td>
</tr>
<tr>
<td>2012-13</td>
<td>81</td>
<td>106</td>
</tr>
<tr>
<td>2013-14</td>
<td>77</td>
<td>104</td>
</tr>
<tr>
<td>2014-15</td>
<td>80</td>
<td>96</td>
</tr>
</tbody>
</table>

Own calculations based on data in Figure 9 and Table 7

---

\(^{18}\) Corporate tax rates for Bangladesh garment manufacturers were 10% for the 2011-12 through 2013-14 FYs, and 35% for 2014-15 FY (Mirdha 2016).

\(^{19}\) With all the revenues and large part of the costs denominated in foreign currencies (mostly the $ and euro), the exposure of Bangladesh’s manufacturers to unfavorable movement of the taka relative to foreign currencies is moderate. The components of their business that take place in taka and expose them to exchange rate risks are local purchases, primarily of textile, accessories and other miscellaneous, wages, taxes, and overhead costs. In the last ten years, the taka depreciated in relation to the dollar by about 20%, and while it has been fluctuating considerably in relation to the euro, by 2016 its value is on par with its value ten years ago.
Lead Firms
In Table 10b we present profit measures of lead firms, globally and in the US.

10b. Profit Measures of Lead Firms

<table>
<thead>
<tr>
<th>World’s largest apparel companies (by brand value), 5-year average (2011-2015)</th>
<th>Operating Profits before tax* Mil. US$</th>
<th>Net Profits after tax20 Mil. US$</th>
<th>Profit Margins % sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Eagle</td>
<td>260.06</td>
<td>137.55</td>
<td>4.80</td>
</tr>
<tr>
<td>Coach</td>
<td>1,215.90</td>
<td>827.56</td>
<td>21.18</td>
</tr>
<tr>
<td>GAP</td>
<td>1,916</td>
<td>1,142</td>
<td>8.21</td>
</tr>
<tr>
<td>Levi Strauss</td>
<td>422.46</td>
<td>163.68</td>
<td>2.89</td>
</tr>
<tr>
<td>Lululemon</td>
<td>222.23</td>
<td>219.43</td>
<td>17.12</td>
</tr>
<tr>
<td>Michael Kors</td>
<td>505.70</td>
<td>432.00</td>
<td>9.02</td>
</tr>
<tr>
<td>Ralph Lauren</td>
<td>1,042.42</td>
<td>695.32</td>
<td>10.03</td>
</tr>
<tr>
<td>Tommy Hilfiger</td>
<td></td>
<td>6.97</td>
<td></td>
</tr>
<tr>
<td>Under Armour</td>
<td>279.81</td>
<td>165.73</td>
<td>6.58</td>
</tr>
<tr>
<td>Benetton**</td>
<td>102.92</td>
<td>3.60</td>
<td></td>
</tr>
<tr>
<td>Burberry</td>
<td>615.80</td>
<td>472.69</td>
<td>13.88</td>
</tr>
<tr>
<td>Hugo Boss</td>
<td></td>
<td>16.2</td>
<td></td>
</tr>
<tr>
<td>Mango</td>
<td>119.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next</td>
<td>1,107.74</td>
<td>782.78</td>
<td>12.16</td>
</tr>
<tr>
<td>Esprit</td>
<td>-27.78</td>
<td>-171.68</td>
<td>0.23</td>
</tr>
<tr>
<td>H&amp;M</td>
<td>3,203.18</td>
<td>2,487.29</td>
<td>14.40</td>
</tr>
<tr>
<td>Uniqlo</td>
<td>1,347.60</td>
<td>857.43</td>
<td>6.62</td>
</tr>
<tr>
<td>Zara</td>
<td></td>
<td>10.04</td>
<td></td>
</tr>
</tbody>
</table>

Summary statistics (of the above)

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>767.50</td>
<td>577.59</td>
</tr>
<tr>
<td>S.D.</td>
<td>856.45</td>
<td>950.95</td>
</tr>
</tbody>
</table>

Top 50 publicly-traded most profitable US apparel companies with at least $100mil. annual sales in 2015

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>5.20</td>
<td></td>
</tr>
<tr>
<td>S.D.</td>
<td>3.34</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>4.90</td>
<td></td>
</tr>
</tbody>
</table>

IQ Capital database, Apparel Magazine 2016

*The desired measure is net profits before tax but these data are available for only a few companies.

** Data for Benetton are 2011 only.

20 The vast differences between the before/after tax profits are indicative of the high tax rates to which lead firms are subject. Appendix 6 shows the effective tax rates paid by them, ranging from about 25% and up to 40% and in one case 50%. The largest global apparel companies are incorporated in countries with high corporate tax rates. Japan and the US, two major home countries of these companies, are ranked respectively as the number one and number two highest corporate tax rate countries in the world. Corporate taxes have gone down in many European countries in recent years but are still high by international standards. Net profit after taxes represents the balance between total revenues and all operating expenses, interest, depreciation, taxes and preferred stock dividends.
Acknowledging the limitations of the data and the suggestive nature of the conclusions we can draw based on them, the marginal profitability of lead firms is below the estimated averages for Bangladesh’s manufacturers.

The comparability between the profits of lead firms and Bangladesh’s manufacturers is tempered by differences in the populations studied. Data for the lead firms refer to the world’s largest and most valued apparel companies (the upper part of Table 11) and the most profitable such companies in the US (the bottom of Table 11). These companies are likely to exhibit above-industry average performance and probably skew the figures upwards. To the best of our knowledge industry averages, globally, in the US or elsewhere, are not available. The data for Bangladesh’s manufacturers, in contrast, represent the averages for the entire populations, and as such, cover the whole performance spectrum.

It should also be noted that most of the lead firms studied outsource from Bangladesh (Appendix 1), such that the lead firms and the manufacturers are de facto participants in the same value chain and create and appropriate value in collaboration. This makes the comparisons between them meaningful.

At the same time, however, the nature of their participation in this supply chain varies, and this may hamper the comparability of their profits as an indicator of value appropriation. The profits of Bangladesh’s manufacturers are generated entirely through their participation in the Bangladesh-cantered segment of the global garment supply chain. The profits of the lead firms, in contrast, are the aggregated values across their activities worldwide. The share of profits that can be attributed specifically to their activities in Bangladesh is not known (and probably cannot be calculated meaningfully). Even H&M, the largest buyer in Bangladesh, outsources production from 700 suppliers worldwide, only a third of which are in Bangladesh (Hoffman 2014). The shares of purchases generated in Bangladesh of other major buyers are smaller.

With these reservations in mind, the analyses reported in Tables 10 and 11 do not lend support to claims about unfair and unjust value distribution among the two major participants in the garment global supply chain—Bangladesh manufacturers and global brands—that motivated this research. If anything, Bangladesh manufactures appear to appropriate value in excess of the value they create. We do no find support for the often claimed misappropriation of value by global brands.

We suggest two somewhat related differences between Bangladesh’s manufacturers and global brands pertaining to levels of transparency and exposure to stakeholder pressure that explain this finding. By virtue of differences in ownership and legal requirements in their respective countries, the activities of the brands, in Bangladesh and elsewhere, are documented with great detail and publicly available. Only a handful of Bangladesh manufacturers are publicly-traded on the Dhaka and Chittagong Stock Exchanges. A majority of these companies are incorporated as Privately Limited Companies under the Companies Act of Bangladesh and are privately owned, mostly by the founder or his family. The incorporating authority in Bangladesh is the Registrar for Joint Stock Companies & Firms. Although required to submit audited accounts to the National Board of

22 http://www.roc.gov.bd/
Revenue and tax returns, Bangladesh’s manufacturers are subject to minimal requirements to share information publicly about their activities.23

These varying levels of transparency, coupled with different ethical norms regarding labour rights and value distribution of local stakeholders, expose the brands to strong societal pressure to conduct their business while adhering to the highest moral standards, even when doing so is inconsistent with financial considerations. Failure to meet these expectations is punished heavily by stakeholders, creating huge reputational risk and acting as effective market mechanisms to correct for any deviations from societal expectations to create value in a fair and sustained manner.

No equivalent mechanisms exist in relation to the manufacturers, creating the imbalance we observe between value creation and appropriation in this part of the supply chain. Lack of transparency shields the manufacturers from accountability and challenges the ability to observe market distortions and correct for them. This situation calls for policy intervention, notably in the form of increased minimum wage, particularly to unskilled labour, to correct for this distortion. It also calls for a different appreciation of the limitation of our data and analysis. As this discussion reveals, a lack of transparency by the manufacturers is at the root of the problem we are trying to explore, but at the same time it also challenges the ability to study it and uncover the reality of their activities, calling for greater tolerance for the limitations of our data.

To gain additional insight into the relationships between value creation and value appropriation we conducted a series of case studies with selected garment manufacturers and brands that appear to appropriate greater value from their participation in the garment supply chain. We sought to examine the reasons for this outcome and the extent to which their high value appropriation is related to their value creation activities.

Variations in Value Appropriation

Case Studies: Successful Garment Producers of Bangladesh

The RMG industry in Bangladesh has been established for almost four decades. By now a good number of highly successful firms exist, with stable market access and business relations. Entrepreneurs of three such firms were interviewed to gain an understanding of the factors behind their success. To consider an enterprise successful, the study team requested BGMEA to identify some manufacturers whom they consider to be successful in this business and who were in operation at least before the abolition of the Multi Fibre Agreement (MFA) quota in 2005.24 The successful manufacturers were then interviewed25 with a checklist to reveal how they sustained in the business by overcoming various obstacles and grew over time. A summary of the findings is presented in Table 11. Details on the case study firms are provided in Appendix 7.

---

23 The only firm-level data that are systematically collected about Bangladesh’s manufacturers that we are aware of are export data.
24 2005 was a crucial period when the RMG manufacturers in Bangladesh had to change many issues related to their businesses as the quota granted to Bangladesh’s RMG under the Multi Fibre Arrangement was abolished according to the WTO rules.
25 Mainly the owners were interviewed, while data were supplied by senior officials in the respective firms.
Table 11. Profile of the Case Study Firms: Successful Garment Manufacturers in Bangladesh

<table>
<thead>
<tr>
<th>Name of the firm</th>
<th>Tusuka Garments limited</th>
<th>Pacific Jeans Limited</th>
<th>Misami Garments Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment year</td>
<td>1997</td>
<td>1984</td>
<td>1984</td>
</tr>
<tr>
<td>Employment, 2016</td>
<td>14,000</td>
<td>22,000</td>
<td>11,616</td>
</tr>
<tr>
<td>Employment 2007</td>
<td></td>
<td></td>
<td>4250</td>
</tr>
<tr>
<td>Production volume (annual average, recent years, number of pieces)</td>
<td>22 million sewing and washing of denim jeans</td>
<td>30 million denim jeans</td>
<td>24 million denim and non-denim, 6 million outerwear</td>
</tr>
<tr>
<td>Type of operations when started business</td>
<td>Started as a buying house named &quot;Texel&quot;, focusing only the woven market</td>
<td>Denim jeans producer</td>
<td>Denim jeans producer</td>
</tr>
<tr>
<td>Types of operations currently performed</td>
<td>Production and washing of denim jeans</td>
<td>Production and washing of denim jeans</td>
<td>Both production and washing of denim and non-denim bottoms in three wholly owned factories</td>
</tr>
<tr>
<td>Factors behind the success (according to the founder)</td>
<td>Better technical know-how of management personnel in the production process; product and market specialization; quality and commitment; compliant working condition; investment in research and development and efficient marketing team</td>
<td>Investment in developing new processes (including upgrading of technology); own sample development/collection capability; excellence in quality assurance and maintaining appropriate working standard facility; investment in quality development of the mid-management level</td>
<td>Risk-taking capability; quality of products; sound organization structure and investment in technology</td>
</tr>
<tr>
<td>Setting of prices</td>
<td>Price taker for regular items; price setter for high value-adding items</td>
<td>Price taker for regular items; price setter for high value-adding items</td>
<td>Price is mainly determined by the buyers</td>
</tr>
<tr>
<td>Issues of concerns for future sustainability</td>
<td>Market fluctuations like currency exchange rate, wage increases, etc.</td>
<td>Instability in price, currency fluctuations in destination market</td>
<td></td>
</tr>
</tbody>
</table>

26 Washing is an important part of denim jeans production. At this stage, the look of the jeans are adjusted according to the demand of customers (e.g., whether jeans are faded or not, the appearance of the color, whether or not to have creases on the jeans, the softness of the jeans etc.)
From the discussion with case study manufacturers, the following lessons were learnt.

*Investment in quality of personnel is a key factor for success:*
These firms have invested in the skill improvement of the people working with them. This includes efforts to increase efficiency of mid-level management, developing efficient management structure for the whole enterprise, increasing the technical skill of the management personnel in the production process and so on. These firms appear to have adopted this notion quite early. As a result, they not only could assure better quality production but fewer turnovers of employees.

*Investment in new technology helped increase productivity:*
All the case study manufacturers expressed that they continuously invest in new technology. This has helped them to improve efficiency and product quality as well as create variety in their products.

*Investment in research and creativity is widespread:*
The case study manufacturers have invested in research on the markets of their products, the trends in design and so forth. They have attracted talented people for market research and design innovation.

*Maintaining quality of product is a key factor:*
The case study manufacturers place high importance on the quality of the product. To ensure the quality, some of them rely not only on high-tech machines but also on dedicated quality teams for individual buyers/brand.

*Bangladesh’s RMG has reached a level where some firms are price-setters, not price-takers:*
It is noted that two of the three case study manufacturers have reached the level of price setters, at least for some products, despite the usual notion that Bangladesh produces low-end products and is a price taker. According to Pacific Jeans, their investment in design development has played a big role in establishing their strength as a price setter. “Pacific Jeans Innovation Centre” is continuously experimenting on innovative fits, finishes, fabrics and design development in denim. Their collaboration with highly regarded designers from US, EU and Japanese brands has contributed in a special way to establish them not only as a world-class manufacturer but also as a supreme denim and casual design solution company.

*Business relationships with buyers and retailers resemble partnerships:*
For most of the products, these manufacturers deal directly with the retailers or large buyers. As they have been in business for a long time, they have developed a close relationship with many buyers and retailers. This relationship is considered by them as a partnership in business due to establishing long-run trust and dependency. This trust also reduces the risk of losing buyers in difficult times like that following the Rana Plaza disaster.

*Factory compliance is a precondition for success:*
A good working environment and positive relationships with workers are considered preconditions of success for these manufacturers. According to them, factory compliance plays a crucial role in attracting and retaining experienced workers. The case study manufacturers pay salaries to the workers on time; they provide the workers with holidays according to labour law and also facilities
like day-care services for children of workers or medical care for workers. Regular payment of salary and bonuses as well as the availability of various benefits improve relationships with management and workers.

**Case Study: A Successful Global Brand—H&M**

**The Choice of H&M**

H&M is the world’s second largest company by brand value, after Zara (see Table 7). As other leading fashion companies struggle, these two companies have reported double-digit sales growth. In comparison, GAP shares have declined by 50% over the past year; Michael Kors’ net income fell by 16% in 2016/5, and Ralph Lauren reported a $22 million loss in the first months of 2016 (Kapner 2016).

The vertically integrated business model of Zara excludes it as a candidate for this analysis. H&M, in contrast, outsources its entire production and keeps in-house only the higher value added activities—including design, brand building and retail—making it an interesting case for the study of value creation and appropriation in the garment supply chain.

As noted above, in 2016 H&M was ranked number five in the Gartner global ranking of 25 firms selected globally across industries based on their supply chain management, up from number seven in 2015, and ahead of Zara at number six. The ranking is based on a combined measure of economic performance (i.e., return on assets and revenue growth), as well as CSR and sustainability measures. H&M and Zara are the only apparel companies to be included in the 2016 list.

**H&M in Bangladesh**

H&M is also suitable for our study because of the magnitude of its activities in Bangladesh. It has been outsourcing from Bangladesh for more than three decades, and it is currently Bangladesh’s biggest buyer, and has announced plans to further increase the scope of its activities in Bangladesh (Donaldson 2016). Bangladesh is one of H&M’s most important production markets as 255 of its 700 suppliers worldwide are from Bangladesh (Hoffman 2014).

H&M is also strongly committed to sustainability of its supply chain—globally and in Bangladesh. It views itself as a leader in sustainability and takes pride in its heavy investment in this area. As documented in H&M 2012 Sustainability Report, H&M sustainability record in Bangladesh stood out even before the Rana Plaza collapse, and it advocated higher minimum wages, regular wage adjustments and fire safety in the garment factories in Bangladesh. It also offered fire safety training for three million employees in Bangladeshi factories. In the aftermath of the Rana Plaza collapse, H&M was the first signatory to the Accord on Fire and Building Safety in Bangladesh and has been active and influential in instilling change in labour conditions and safety standards in Bangladesh’s garment factories. It thus serves as a good illustration of our conceptualization of value creation as encompassing, in addition to economic activities, also social and governance issues.

---

27 This commitment is thoroughly documented in H&M’s annual Sustainability Reports

http://sustainability.hm.com/en/sustainability.html#cm-menu
H&M’s impressive growth and performance suggests that it appropriates considerable value from its global supply chain. The supply chain is at the centre of H&M’s low-cost, fast-fashion business model and is essential for H&M’s ability to meet these goals. Indeed, H&M is opening 425 new stores around the world in 2016, after opening 413 new stores in 2015 (Donaldson 2016f). Appendix 1 shows that during 2011-2015 it was the fastest growing company among the world’s largest apparel companies.

The case studies support our contention that value appropriation is determined by value creation and cannot be discussed in isolation from value creation. The firms studied have developed firm-specific means to create more value, which in turn has led to greater value appropriation compared to other participants in their subgroups.

**Caveats and Limitations**

The findings and the conclusions we draw based on them should be interpreted in consideration of caveats of the method and analyses. Notable among these are the limitations of the data. Although we relied on the most comprehensive and detailed data available, these may not always allow observing the relationships of interest at the level of detail and vigour desired. These limitations are most notable in relation to the data on Bangladesh’s garment manufacturers, which, as noted above, are subject to minimal formal requirements of data collection and publicity. Given the scarcity of firm-level data, we used the totals to calculate averages per establishment and based the analyses on these figures. Averages naturally hide variations across establishments.

While data are far richer for the global brands, they are not always publicly available in a format needed for our study. The data available are aggregates across items and geographies, and as such, do not enable study of relationships between value creation and appropriation at the adequate level, that is, of an individual product. Data are also limited for brands that are part of other corporations (Appendix 1), where data might be available only for the corporation as a whole.

Data availability has also imposed constraints on the methods of calculating value creation and value appropriation and their comparability across different participants, which is fundamental for our study.

Furthermore, subject to data availability, we employed revenues to calculate value creation and value appropriation. While commonly used in academic research in this area, revenues are affected by market forces that set up market prices, such as competitive pressure and bargaining power between sellers and buyers. The export value of Bangladeshi manufacturers captures not only the value they create but also their negotiating power vis-à-vis the brands. Sales of the brands are similarly affected by the competitive intensity in the market for the final goods, and other factors that affect demand (e.g., weather conditions), as well as the cost of production, for instance the impact of the end of the Fibre Quota in 2005. Our interest is in the balance between value creation and value appropriation, which minimizes this potential bias because revenues are used in the measures of both value creation and value appropriation. Furthermore, the same method is

---

28 Primark, owned by Associated British Foods, was excluded from the study on this ground.
employed in relation to both global brands and the manufacturers, so to the extent that there is a bias, it affects both of them. Since our interest is in the comparison between manufacturers and global brands, the bias is likely to be minimal.

In addition, as is common in research in this area, we employed profits as indicators of value appropriation. Profits can be manipulated in a variety of ways. For instance, high wages for top management and leading designers of global brands reduce profits and lower value appropriation.

Another limitation of profits as a measure of value appropriation is that they represent only one dimension of value and may not necessarily be the most important one for all the stakeholders involved in the supply chain. Value created by supply chains is broader than what performance indicators alone could capture (UNIDO 2015). The profit measure could also be biased as a result of trade-offs firms make between profitability and growth. Competitive pressures may incentivize firms along the supply chain to reduce prices as a way of differentiating themselves.

Yet another concern is that our measurement method entails that value creation and appropriation of different participants in the value chain are interdependent on each other—violating a major requirement of the analysis we seek to conduct. Thus, when the global brands pay less to manufacturers, it appears as if their value creation (revenues) is diminished, whereas the value appropriation by the global brands increases (i.e., lower pay reduces cost of purchases and positively affect profits).

Moreover, some of the most important elements of value creation and value appropriation are difficult to measure and express in the economically meaningful terms needed for the analyses. The challenge is further exacerbated because often these difficult-to-measure elements are the most essential parts of what is being measured. Examples include brand value, social costs, opportunity cost, and the like.

Lastly, the impact of exchange rates may bias the comparability of the results—among lead firms, between them and Bangladesh manufacturers, and over time. The analyses were conducted in US dollars but eight of the 20 lead firms studied report financial data in non-dollar currencies, including the euro, Japanese yen, Swedish krona, Jordanian dinar, and Hong Kong dollar (Appendix 1). The dollar fluctuated at different rates in relation to these currencies during the period studied. As noted above, the currency exposure of Bangladesh’s garment manufacturers is mostly to the dollar and euro, and their costs and income are affected by the fluctuations of these currencies in relation to Bangladesh taka.

Considering these caveats, our findings and conclusions should be taken as suggestive and indicative rather than as formal evidence. Notwithstanding these limitations, however, we believe that the study makes a most important contribution in elucidating the sources of value creation and value appropriation in the global garment industry, and deepening the understanding of the relationships between them.
3.3 Industrial Variations and Value Appropriation by Consumers—Consumer Surplus

The balance we document in the garment industry between value creation and value appropriation differs considerably from what has been observed in other global supply chains (Table 12). Notwithstanding differences in methods of analyses that may derail the vigour of the comparison, lead firms in the supply chains presented in Table 12 appropriate far greater shares of value than the other participants, and in some cases, bigger than that of all of them combined.

Table 12. Value Appropriation in Global Supply Chains, Selected Industries

<table>
<thead>
<tr>
<th>Industry/Product</th>
<th>Value Appropriation (Profit margins)</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>iPod</td>
<td>Apple 40%, Distributors 10%, Retailers 15%</td>
<td>Dedrick et al. 2009</td>
</tr>
<tr>
<td>Notebook PC</td>
<td>HP 28%, Microsoft and Intel 18%, Taiwan, Korea, Japan suppliers combined 10%</td>
<td>Dedrick et al. 2009</td>
</tr>
<tr>
<td>V3-RAZR Mobile phone</td>
<td>Motorola 50%; all suppliers combined 22%</td>
<td>Dedrick et al. 2011</td>
</tr>
<tr>
<td>iPhone</td>
<td>Apple 58%, Korea, Japan, Taiwan, EU suppliers combined 6.6%, Foxconn &lt;3%</td>
<td>Kraemer et al. 2011</td>
</tr>
<tr>
<td>95N smartphone</td>
<td>Nokia 50%, All suppliers combined 11%</td>
<td>Ali-Yrkko et al. 2011</td>
</tr>
<tr>
<td>iPad</td>
<td>Apple 30%, Korea, Japan, Taiwan suppliers combined 10%</td>
<td>Kraemer et al. 2011</td>
</tr>
<tr>
<td>Food</td>
<td>Kraft 10%, Nestle 9%, Olam (world’s largest supplier of food ingredients) 2%</td>
<td>Own calculations based on company reports, 2015</td>
</tr>
<tr>
<td>Diamonds</td>
<td>Pre-tax profits of retailers &gt; all other participants combined (rough diamonds producers, brokers, dealers, jewellery manufacturers, wholesalers)</td>
<td>Spar 2002; The Mining Journal 2006</td>
</tr>
<tr>
<td>Sport shoes</td>
<td>Retailers 33%, Brands 22%, Manufacturers 12%</td>
<td>Gerard 2011; Kish 2014</td>
</tr>
</tbody>
</table>

Theory suggests that in the absence of market failures that distort the dynamics of competition, value appropriation is determined by value creation. The dual levels of competition taking place within supply chains—among subgroups specializing in different parts of the chain, and within these groups among firms with similar specializations—impose this outcome. If the two are not aligned, buyers will turn to other competing alternatives. Value creation thus becomes the upper bound on the amount of value a player can appropriate (Brandenburger and Stuart 1996; Chatain 2010; Chatain and Zemsky 2011).
Research that seeks explanation for the variations in value appropriation common in supply chains indeed attributes them to various types of market failures, originating in industry structure and firms’ market power. Industrial organization-based explanations advance the argument that distortions related to market structure and their competitive dynamics imply that firms competing in less competitive markets appropriate more value than those in competitive markets (Porter 1980). Explanations based on the resource-based view (RBV) of firms pose that market failure that introduce variations in firms’ capabilities and their rarity in the market afford some firms stronger negotiating power, and enables them to claim larger shares of value (Adegbesan 2009; Adegbesan and Higgins 2011).

Both types of market failure exist in the garment supply chain, as has been documented extensively in the previous discussions, but as our findings suggest, the outcome in terms of value appropriation across the participants is different. We propose explanations for the distinctiveness of the garment industry related to two features of this supply chain that constrain the ability of lead firms to appropriate value. These are related to competitive pressures in the market for the final goods that erode the revenues of lead firms, and to the large investments undertaken by lead firms in social value and governance of the supply chain that increase their costs. We also suggest that government support for Bangladesh’s garment manufacturers had been instrumental in narrowing the performance gap between them and the lead firms.

Global prices of apparel have been declining continuously for decades. Analysis by EuroMonitor International shows that the average global apparel unit price declined from $18 in 2005 to $12 in 2015. DynamicAction’s Retail Index, an index that benchmarks retail trends in key categories based on more than $5 billion in consumer transactions, shows an increase of more than 60% in discounted apparel items in 2015 alone, indicating the growing pressure on price.

Figures 7a and 7b show changes in the consumer price index of apparel relative to all items in the US and the EU. In both economies, the apparel price index has remained constant during the periods analysed while the price indices of all items have risen continuously. Appendices 8a and 8b present data that show continuous decline in consumer expenditure on apparel in the total consumption basket in the US and the EU. These trends have reduced the revenues of lead firms and diminished their profits.

29 In addition to competitive pressure, price reduction has also probably been influenced by the termination of the Fibre Quota in 2005 that reduced the cost of production.
Figure 7. Consumer Price Index: Apparel versus the Economy as a Whole

7a. US


7b. EU


Research in the resource-based view of the firm offers theoretical underpinning to the suggestion that the brands do not appropriate disproportionate shares of value in relation to their value creation. This research shows that rent does not always lead to superior performance for the firm that generated it, and instead might be appropriated by different stakeholders in the firm. Conceptualizing the firm as a nexus of contracts, this theory suggests that value appropriation is based on the negotiation between the firm and its stakeholders over the rent created, with the outcome being determined by the relative negotiating power of the firm vis-à-vis its stakeholders. It identifies the sources of bargaining power of various stakeholders as originating in the knowledge specificity of the stakeholders concerned, its rarity in the market, and market conditions that determine the demand for it (Adegbesan 2009; Adegbesan and Higgins 2011). These ideas have been advanced in relation to various stakeholders in the firm and are most developed with employees, whose knowledge and expertise affords them strong negotiating power vis-à-vis the
firm, making them a major claimant of rent. Other stakeholders discussed include top management and shareholders (Coff 1999; Molly and Barney 2015).

We extend this rationale to the garment supply chain and suggest that the strong competition in this market affords consumers strong bargaining power and the ability to pressure prices, making them a major claimant of the value surplus created by the supply chain. While knowledge was described by extant research as the source of stakeholder negotiating power, we suggest that in relation to consumers, the intensity of the competition and the ability to put pressure on prices by ‘voting with their feet’ are the sources of power for claims over firms’ rent.

Negotiation and bargaining power theories pose that bargaining power is determined by four features: 1. Stakeholders’ ability to act in a unified manner, such that they can pose serious and credible threat of exit, i.e., departure to a competitor; 2. Parties’ access to information and their ability to reduce or eliminate information asymmetries; 3. The replacement cost to the firm if a stakeholder exits and the loss that would be incurred to replace her; and 4. Stakeholders’ switching costs, as they affect the cost of exit (Marburger 1994; Lippman and Rumelt 2003; Ahern 2012; Krasteva and Yildirim 2012).

The low (none existing) switching costs, and the simplicity of the information on which their product evaluation and choice are based—mostly prices and quality, which are easily accessible and directly assessed—affords apparel consumers strong bargaining power. The advent of the Internet and social media has considerably increased consumers bargaining power as it has further reduced switching costs and access to information. Social media creates forums for consumers to pose a collective threat of exit if their demands are not met. These features of the negotiating process have turned the final consumers, rather than the lead firm, into major claimants over the value created by the supply chain, and reduced the revenues of lead firms, thus harming their profitability.

The second reason we offer for the balanced distribution of value among the various participants in the garment supply chain is related to the centrality of social value creation in value creation and the strong commitment that lead firms have exhibited to the sustainability of the supply chain. Discussions of causes of market behaviour seldom incorporate issues related to social value creation as possible causes of market failures.

The distinctiveness of garment in this respect appears to originate in the low-level skills involved in garment production and the vast differences in the levels of economic development of the various participants. This reality exposes lead firms into collaborative relationships with firms from countries at a lower level of economic development than those observed in most other supply chains (e.g., electronics, cars), and puts strong pressure on governance and sustainability (Gereffi 1999; Fernandez-Stark, Frederick and Gereffi 2011; Maximilian 2013; Hoque 2013; Elm and Low 2013). Anecdotal observations suggest that the commitment of global brands to these causes exceeds what is common in most other industries, particularly in the context we study: Bangladesh in the aftermath of the Rana Plaza collapse.

---

30 A comparison of garment with intangible goods explicates this point. In the latter, judgment of the quality of what is being purchased and evaluation of its worthiness are challenging and often cannot be determined with certainty prior to the actual purchase.
While the precise magnitude of the costs of governance are not known as firms are not required to report these costs separately from general and administrative costs and seldom do so, anecdotal observations suggest that the commitment of global brands for social causes has increased considerably the overall cost of managing their supply chains. For instance, estimates suggest that in 2015, two years after the Rana Plaza tragedy, the combined costs of voluntary actions embraced by global brands such as H&M, Zara’s parent Inditex, Levi Strauss, and Primark, among others, have exceeded $5 billion.

Individual companies have also taken their own initiatives. H&M’s commitment to governance practices in its supply chain is noted above. As part of its Fair Wage method, it has recently enhanced the compensation package to Bangladeshi manufacturers to help them upgrade safety conditions in their factories (Donaldson 2016d). In a similar fashion, Levi Strauss, in collaboration with the World Bank IFC, introduced financial incentives to its 550 suppliers around the world to meet environmental, labour and safety standards, by offering low cost financing to the best performers on these measures (Donnan 2014).

In embracing these actions, global brands are often subject to strong public pressure by stakeholders who are not willing to pay the price for them. Research shows that, although consumers claim in repeated surveys to the contrary, they do not endorse such activities in their purchasing behaviour and are not willing to pay premium for products and services that adhere to high social standards. Green products account for less than 4% of the global market in spite of decades of investment in marketing such products. Nor do employees show an inclination to accept lower salaries from socially engaged firms. And a minority of investors rewards firms’ shares for social activities that do not improve financial performance (Bagnoli and Watts 2003; Vogel 2006; Besley and Ghatak 2007; Olson 2013). Such stakeholders’ reactions turn the global brands into the ultimate bearer of the cost of management of supply chain and reduce their profits.

Lastly, Bangladesh’s government has actively supported the garment manufacturers since the inception of the industry in the late 1970s and has played a major role in enhancing their performance. The details of the support have slightly changed over time but have included manufacturer benefits such as duty-free import of capital machineries for 100% export-oriented RMG factories and duty-free raw material imports that are used for the production of exports. In 1980, Bangladesh Bank granted garment manufacturers back-to-back letter of credits, effectively reducing interest rates on export credits, which enabled them to import intermediaries without paying for them at the time of purchase. They also gained access to bonded warehouse facilities for duty-free imports of input for production, reducing their capital requirements. Other benefits have included the elimination of taxes on utilities and electricity; reduction in insurance premiums; and the exemption of value-added taxes on gas, water and electricity bills (Choudhury and Hussain 2005; Yunus and Yamagata 2012). Bangladesh’s garment manufacturers have also enjoyed exemption from corporate tax on export profits, the manufacturers’ sole source of profits. Between 2005-6 and 2013-14, manufacturers benefited from a reduced corporate tax rate of 10%. The provision expired in 2014, and the sector paid tax at the 35% rate in fiscal 2014-15. The tax rate was reduced to 20% in 2015-16 to help exporters upgrade their factories and meet the stringent labour safety requirements following the Rana Plaza collapse (Star Business Report 2016; Mirdha
2016). These compare favourably to the tax and duty levels confronted by the global brands (see Appendices 3 and 6) and have reduced the performance gap among them.

### 3.4 Widening Gaps Between Productivity and Wages

Garment production is labour-intensive, with the labour force made up of mostly low-skilled workers, whose limited negotiating power makes them prone to possible violations of labour rights and standards. To provide ground for the examination of the extent to which labour in Bangladesh’s garment industry is compensated properly, we extend our theoretical framework to the study of the relationships between value creation and value appropriation of labour in Bangladesh’s garment industry.

Pay levels in the garment industry in Bangladesh have been regulated by the Minimum Wage Board of Bangladesh, a government statutory agency established in 1959 with the mandate of overseeing wage levels in the country and ensuring minimum wage levels. It is the only statutory wage-fixing agency in Bangladesh.

Minimum wages are set by the Board independently for each of the 46 formal sectors of the economy and are used to ensure that pay levels do not fall below this level. The labour law mandates revision of the minimum wage at least once every five years, but actual revisions have not followed this law and vary across sectors. The Wage Board publicizes minimum wage revisions via its Gazette publications. Although minimum wages are set for all skill levels, they are particularly important in relation to low-skilled labour whose negotiating power with employers is weak and subject to various sources of market failures, such as information asymmetries and power asymmetries between the negotiating parties.

Minimum wage in the garment sector is based on a seven-grade skill scale, and is set up separately for each grade (Table 13a). Minimum wage for garment workers was introduced in 1994 and went through several revisions since then. In Table 13a, we present the minimum wage levels for the seven grades as set up by the wage board during the entire period since it was introduced in 1994 and revised in 2006, 2010 and 2013.

The last column of the table presents the employment distribution across the seven grades. This is based on a survey of 173 factories and 1204 workers conducted in Bangladesh in 2014 (Haque and Estiaque 2015). We use this employment distribution to calculate the number of employees working in each grade scale and multiply these respective numbers by the wage level per scale. The sum of these amounts represents the total wages paid by an average garment factory (Table 13a).

---

31 The application of the minimum wage regulations to workers who produce sweaters differs from that of other knitwear workers. Sweater production is administered on a contractual basis, priced by quantity of production rather than wages. With reference to sweaters workers, the minimum wage implies that pay levels for certain quantities cannot be lower than the minimum wage for the corresponding grade.
### Table 13. Wages of Garment Workers in Bangladesh

13a. Statutory Minimum Wage Without Market Adjustments

<table>
<thead>
<tr>
<th>Grades of Workers</th>
<th>Designation</th>
<th>Gross Minimum Wage Per Month, Taka&lt;sup&gt;32&lt;/sup&gt;</th>
<th>1994</th>
<th>2006</th>
<th>2010</th>
<th>2013</th>
<th>% total employment*</th>
</tr>
</thead>
<tbody>
<tr>
<td>VII</td>
<td>Assistant sewing machine operator, assistant dry-washing man/woman, line iron man/woman</td>
<td></td>
<td>930</td>
<td>1662.5</td>
<td>3000</td>
<td>5300</td>
<td>19.8</td>
</tr>
<tr>
<td>VI</td>
<td>General sewing machine/button machine operator and others</td>
<td></td>
<td>1320</td>
<td>1851</td>
<td>3322</td>
<td>5678</td>
<td>14.9</td>
</tr>
<tr>
<td>V</td>
<td>Junior sewing machine operator, junior cutter, folder (finishing section) and others</td>
<td></td>
<td>1450</td>
<td>2046</td>
<td>3553</td>
<td>6042</td>
<td>19.3</td>
</tr>
<tr>
<td>IV</td>
<td>Sewing machine operator, quality inspector, cutter and others</td>
<td></td>
<td>1710</td>
<td>2250</td>
<td>3861</td>
<td>6420</td>
<td>21.9</td>
</tr>
<tr>
<td>III</td>
<td>Sample machinist, mechanic, senior sewing machine operator and others</td>
<td></td>
<td>2100</td>
<td>2449</td>
<td>4218</td>
<td>6805</td>
<td>19.3</td>
</tr>
<tr>
<td>II</td>
<td>Mechanic/electrician, cutting master</td>
<td></td>
<td>3400</td>
<td>3840</td>
<td>7200</td>
<td>10900</td>
<td>1.2</td>
</tr>
<tr>
<td>I</td>
<td>Pattern master, chief quality controller</td>
<td></td>
<td>4700</td>
<td>5140</td>
<td>9300</td>
<td>13000</td>
<td>0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of employees per establishment</th>
<th>2,017</th>
<th>1,894.5</th>
<th>1,418.5</th>
<th>1,262.5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total wages per establishment, 000</td>
<td>3,196.4</td>
<td>4,038.8</td>
<td>5,302.3</td>
<td>7,878.3</td>
<td></td>
</tr>
<tr>
<td>1 US$ = taka</td>
<td>40.01</td>
<td>67.16</td>
<td>69.18</td>
<td>77.75</td>
<td></td>
</tr>
<tr>
<td>Employment weighted minimum wage per establishment $&lt;sup&gt;32&lt;/sup&gt;</td>
<td>79,890</td>
<td>60,127</td>
<td>76,645</td>
<td>101,328</td>
<td></td>
</tr>
</tbody>
</table>

Minimum Wage Board Gazette, various issues; Haque and Estiaque 2015; Bangladesh Central Bank official annual exchange rates taka/US$.

*Total does not add up to 100% due to rounding errors in the source of the data.

---

<sup>32</sup> Gross wages are the base salary, which accounts for about 60% of the total, with the remaining 40% made up of travel allowance, medical allowance, food allowance and house rent. In addition to wages, employees are also entitled to two hours overtime, festival bonus, and earned-leave encashment. Most of the factories in Bangladesh also offer attendance bonus. Other benefits are offered by individual factories on a voluntary basis.
The calculations in Table 13a present total wages paid based on the minimum wage levels set up by the wage board. Actual wages, however, often deviate from the minimum wage. The direction and magnitude of the deviations are not known, and it is apparent that there is also considerable variation across factories—depending on size, location, availability of workers in local area and other such factors—and across pay grades.

The ILO study of actual pay levels in the garment sector in several Asian garment-exporting countries shows weak compliance with minimum wage standards. More than half the employees in garment manufacturing in the Philippines and India are paid below the respective countries’ minimum wage. In Indonesia, Thailand and Pakistan, the share of under-paid workers is almost 40%. Bangladesh was excluded from the study due to a poor response rate for the survey and, hence, similar systematic data are not available, but the weak power of Bangladesh’s garment workers suggest that a similar situation may prevail in Bangladesh as well. The gap between actual and minimum wage levels in all the countries studied are higher in relation to women than to men (60% gender differences in Pakistan), increasing the concern regarding the situation in Bangladesh where the overwhelming majority of employees in the most unskilled segments that are subject to the greatest potential violation are women (Cowgill and Huynh 2016).

Industry observers, however, suggest that the common practice in many of Bangladesh factories is for actual pay levels to be above the minimum wage. Some manufacturers increase wages every year in the form of annual increment and pay overtime as well as provide a variety of production bonuses and benefits that are above those required by law, such as attendance or food allowances. We follow these anecdotal observations and base the adjusted analyses below on estimates of higher pay levels.

Systematic data on the gap between the minimum wage and actual pay levels do not exist, but industry analysts estimate that for grade V, VI and VII, the dispersion may be between 5%-10%. For grade II, III and IV, the dispersion may range between 10%-20%, and in grade I could be above 50%. The demand for employees in these levels exceeds supply, giving the employees strong negotiating power. In Table 13b we present a revised calculation, based on these market adjustment estimates. We repeat the analyses with these revised figures, following the same method described above, and present total wages in the bottom of the Table.
### 13b. Estimates of Prevailing Wages by Grade (Minimum Wage with Market Adjustments)

<table>
<thead>
<tr>
<th>Grades of Workers</th>
<th>Prevailing wages (above minimum wage)</th>
<th>Gross Minimum Wage Per Month, Taka</th>
<th>% total employment*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1994</td>
<td>2006</td>
</tr>
<tr>
<td>VII</td>
<td>5%</td>
<td>976.5</td>
<td>1662.5</td>
</tr>
<tr>
<td>VI</td>
<td>7.5%</td>
<td>1419</td>
<td>1851</td>
</tr>
<tr>
<td>V</td>
<td>9%</td>
<td>1566</td>
<td>2046</td>
</tr>
<tr>
<td>IV</td>
<td>10%</td>
<td>1881</td>
<td>2250</td>
</tr>
<tr>
<td>III</td>
<td>15%</td>
<td>2415</td>
<td>2449</td>
</tr>
<tr>
<td>II</td>
<td>20%</td>
<td>4080</td>
<td>3840</td>
</tr>
<tr>
<td>I</td>
<td>60%</td>
<td>7520</td>
<td>5140</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of employees per establishment</th>
<th>2017</th>
<th>1,894.5</th>
<th>1,418.5</th>
<th>1,262.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total wages per establishment, 000</td>
<td>3,578.6</td>
<td>4,491.6</td>
<td>5,897.7</td>
<td>8,503.2</td>
</tr>
<tr>
<td>1 US$ = taka</td>
<td>40.01</td>
<td>67.16</td>
<td>69.18</td>
<td>77.75</td>
</tr>
<tr>
<td>Employment weighted wages per establishmen $</td>
<td>89,442.6</td>
<td>66,869.7</td>
<td>85,252.2</td>
<td>109,365.4</td>
</tr>
</tbody>
</table>

Sources as per Table 13a.

Figure 8 summarizes respectively the changes in wages and productivity since the introduction of minimum wage in the garment industry.

---

33 Additional labour rights include two hours overtime, festival bonus, and earned leave encashment. Most of the factories in Bangladesh also offer attendance bonus. Other benefits are offered by individual factories on a voluntary basis.
Figure 8. Labour Productivity and Wages (with Market Adjustment), % Change (in UD$ terms)

Some caveats of the analyses might be borne in mind when interpreting the findings. For one, we measure labour productivity by exports per employee, a potentially biased indicator of labour productivity because as noted earlier, export values are affected by market forces and might also be influenced by changes in the price of purchases (e.g., cotton prices) (OECD 2001). Furthermore, productivity measures should ideally be based on constant prices, using the double-deflation method, rather than current prices we use for the lack of better data.

In addition, the estimate of labour distribution across the seven grades is based on a survey conducted in 2014 and applied across the entire period studied. Data availability does not enable us to account for changes in the distribution of labour across the grades over time. However, we believe that the actual bias is minimal because a majority of employment has been concentrated in the low grades. To the extent that bias exists, it is likely to overestimate pay levels because, if any change has occurred, level of skills has risen over time.

Further, in the absence of data, the market adjustment analyses (Table 13b) are based on estimates by industry analysts and can only be taken as indicative and suggestive. Lastly, reservations expressed earlier regarding the limitations of the average and the variations across the population hold in relation to these analyses as well.

With these reservations in place, a review of the analyses reveals a large gap between the increase in labour productivity and wages. Wages decreased in dollar terms between 1994—when minimum wage was introduced—and the first revision that took place more than a decade later (in violation of Bangladesh’s labour law that, as noted above, requires revisions at least every five years), followed by gradual increase since then. This increase, however, does not match the increase in labour productivity during these periods. The dotted trend lines show continuous growth of labour productivity during the entire period, climbing to 321% between 1994 and 2015. The corresponding figure for wages is 22%.
Figure 9 presents productivity growth at the levels of the factory (establishment) and per employee during the last three decades. It shows continuous growth during this period. The pay level rises have not matched the level of productivity growth, and the gap had widened considerably in the more recent years. As Figure 8 shows, from 2010 to 2013—the last two revisions of the minimum wage—productivity had grown by 76%, whereas the wage level rose by 20%. This gap is particularly disturbing given that the productivity growth during this period is due primarily to improvement in labour skills and efficiency. There has been limited, if any, capital investment in productivity-enhancing facilities.

Figure 9. Productivity of Bangladesh’s RMG Manufacturers, 1983-2015 (Average export per employee and establishment)

![Figure 9. Productivity of Bangladesh’s RMG Manufacturers, 1983-2015 (Average export per employee and establishment)](image)


The analyses might be biased by several limitations of the data. The distribution of employment across the grades is based on a survey of a small number of factories, and its broader validity beyond this sample to the entire population is unknown. To the best of our knowledge, this is the best data available regarding this phenomenon. Furthermore, the survey was conducted in 2014, and the accuracy of the distribution it documents beyond that point in time is now known. There are reasons to assume, however, that the bias here may not be substantial as employment distribution tends to become stable over time. Moreover, the gap between the minimum wage and actual pay levels is now known, and as noted above, varies considerably across factories. This too may be a constraint on the strength of our findings.

With these reservations in mind, we suggest a gap exists between value creation and value appropriation in relation to labour employed in garment production. Market forces by themselves may not correct for this deviation, which calls for policy intervention. We will return to this point with details in the recommendation section. Below we present a summary of value creation and value appropriation by the various participants in the garment supply chain.
Table 14. Value Creation and Value Appropriation in the Garment Supply Chain

<table>
<thead>
<tr>
<th></th>
<th>Value Creation (Value added % revenues)</th>
<th>Value Appropriation (Profit margins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead firms 5-year average</td>
<td>0.85</td>
<td>9.70</td>
</tr>
<tr>
<td>Bangladesh manufacturers 4-year average</td>
<td>0.085</td>
<td>11.06</td>
</tr>
<tr>
<td>Bangladesh labour % Growth, 1994-2015</td>
<td>Labour productivity: 331%</td>
<td>Wages: 22%</td>
</tr>
</tbody>
</table>
Chapter 4 Recommendations

The prescriptive analysis above provides ground for normative recommendations to participants in the garment value chain regarding means to enhance value creation and value appropriation. The previous discussion suggests that the determinants of value creation and value appropriation combine factors that are external to firms and not under their control or those controlled by them. This implies that progress requires joint efforts by firms and the policymakers that command the environment in which these firms operate.

A major insight of the study is that in the garment supply chain, despite the significant deviation in value appropriation by labour, value appropriation by both lead firms and manufacturers is broadly aligned with value creation, shifting the focus of efforts from enhancing value appropriation to increasing value creation in the first place. We have also demonstrated considerable variations within subgroups in terms of the ability to appropriate value and suggested that firms enjoy considerable discretion over the value they appropriate through their participation in supply chains. The essence of this variation lies in firms’ ability to create more value for their customers in a firm-specific manner. This gives lead firms considerable power and influence over the value chains and assigns a responsibility to use their power and influence to improve governance and sustainability of the value chains. Below we outline the means by which Bangladesh’s manufacturers can differentiate themselves positively in the eyes of lead firms, followed by recommendations for policy actions by Bangladesh’s government to assist them in this task and for the lead firms.

4.1 Recommendations for Bangladesh’s Manufacturers

Governance and Transparency
Lead firms are under strong public pressure for compliance in their supply chains and deviations from what is expected, which by itself is often not clear, have become hugely punitive and causes enormous reputational damage (Bishop 2016; Hongjoo and Byoungho 2016)34. This pressure extends beyond direct suppliers to include also the supply chains of the suppliers, raising the costs of inspection and supervision confronted by the lead firms. The growth in the numbers of factories suspended recently by Alliance signatory firms on the ground of failure to adhere to the expected compliance standards—from 24 by the end of 2015, to 77 in the first quarter of 2016 (Donaldson 2016c)—is indicative of the enormous value that lead firms place on compliance. The Accord is another independent, legally binding agreement between brands and trade unions designed to work towards a safe and healthy Bangladeshi ready-made garment industry. Bangladeshi manufacturers, who are doing business with the brands under Alliance, also need to abide by the requirements of Accord.

Manufacturers that operate in a transparent manner and maintain proper governance and compliance in their factories and in their supply chains can assist lead firms in addressing this concern, which will afford the manufacturers that implement them significant advantage (Kang and Hustvedt 2014). A recent study of garment manufacturing plants in Sri Lanka shows that

34 As an illustration of the level of scrutiny of activist groups and human right advocates on lead firms, the British retailer Ivy Park was recently spotlighted for the $126 monthly wages paid in its suppliers’ garment factories in Sri Lanka, although the minimum monthly wage in the country is $92 (The Sun 2016, McGregor 2016b).
voluntary adaptations of high governance standards has a powerful signalling effect and gives the manufacturers that introduce them significant performance rewards (Jayasinghe 2016).

**Speed and Flexibility**
Another significant way that manufacturers can gain competitive advantage is speed of delivery. As noted above, speed has become a critical competitive imperative in the fashion industry, and lead firms increasingly employ lead time to make up for limitations to predict demand ahead of production. At the same time, a mismatch grows between the increasing demand for speed and the swelling complexity of the supply chain, which slows processes down and increases lead time. This mismatch forces lead firms to use costly buffer inventory and raises the premium on manufacturers’ lead time and speed of delivery (Ellis 2013).

Surveys of supply chain managers consistently report the high value lead firms place on speed. Speed was ranked the second highest supply chain priority, lagging only behind ‘reducing overall costs’, by respondents to a survey conducted by Industrial Development Corporation (IDC) (Ellis 2013). Almost half of the 350 apparel companies surveyed by The Sourcing Journal in 2016 said they are trying to speed up the flow of merchandise in their supply chain (Donaldson 2016e), and about 80% of the 300 apparel companies surveyed by Apparel Magazine reported plans to make sizable improvements in speed to market (Pious and Burns 2015). This survey also finds that the manufacturers control about one-third of the overall production time (with the remaining two-thirds split between product design and transportation). This makes the manufacturers’ speed a significant determinant of overall production time efficiency.

In addition to lead time, flexibility of production, as it enables flexibility for rapid changes in demand, is also a vital competitive imperative for lead firms and a major selection criterion of manufacturers. The rapid change of demand creates frequent mismatches between supply and demand and results in lost business, placing high value on the ability to adjust production rapidly. Manufacturers that offer the flexibility to change production lines quickly will enjoy considerable advantage.

**State-of-the-Art Technology**
A major means by which manufacturers can improve the speed and flexibility of their operation is the use of technology. Digital technology is transforming the industry and is considered by lead firms a major means to improve supply chain efficiency (Apparel Magazine 2016). A cross-industry study of executives in more than 20 countries around the world found that 95% plan to automate their entire supply chain by 2020, and expect their suppliers to upgrade their IT systems (Capgemini Consulting and GT Nexus 2016). Policymakers will have to join in in these efforts to provide the technology infrastructure, without which individual manufacturers cannot improve their technology.

Garment production is becoming more automated with capital replacing labour (ILO and Asia Development Bank 2014). Automation was slow to affect the apparel industry because it was cost prohibitive as compared to human labour in low-cost countries, but as the costs of automation have come down, more companies will replace human labour with machines. According to one industry analyst, as soon as 2026, robots will replace labour in garment production (McGregor 2016a; see also BCG 2015 for similar predictions). Zara already uses robots in its factories in Spain to dye
and cut fabrics (Yen, 2016). This underscores an urgent need for technology enhancement and the acquisition of the skills required to use it. China—until recently ‘the factory of the world’—has become the world’s largest purchaser of robots, suggesting the likely direction of change in low cost production and the transformation of manual work that can be automated35.

Cost and Efficiency
Notwithstanding fundamental changes in the competitive dynamics of the industry, cost has remained the major criterion that determines consumers’ choice, putting pressure on prices in the market for the final goods and pressing lead firms to lower production costs (Ellis 2013). Rising labour cost in sourcing countries was cited as the most daunting concern to sourcing strategies (along with social compliance issues) by a majority of the respondents to an Apparel Magazine 2015 survey (Piouis and Burns 2015). Reducing the cost of production is a major source of differentiation for manufacturers.

Labour costs, which accounts only for about 15% of manufacturers’ total cost, are the major component of the cost that is controlled by them and, therefore, a major means at their disposal to reduce overall cost (Anner et al. 2012). However, achieving cost cutting by reducing labour costs is not desirable because it reduces labour morale and jeopardizes manufacturers’ commitment to improving compliance practices and, therefore, is not sustainable (Bain 2015). It is also often associated with higher labour turnover and reduces the ability to attract better quality employees. A few successful Bangladeshi manufacturers we interviewed for this study attribute their success, among other things, to high pay levels.

Cost cutting should instead be achieved by improving productivity and efficiency. Better utilization of labour and machines increases volume of production and reduces the cost per unit. In a World Bank survey of global buyers, Bangladesh was ranked fifth out of six Asian countries in terms of buyers’ perception of the productivity of the labour force and the quality of the production, suggesting a large scope for productivity improvements (Lopez-Acevedo and Robertson 2016). An older estimate of labour productivity in Bangladesh’s RMG factories places it well behind China, India and Pakistan (McKinsey 2011).

Learning
The manufacturers’ distinctive position in the supply chain affords them a perspective of the industry that is different from the one held by lead firms and one they value a great deal. Two aspects are particularly noteworthy: production expertise and knowledge of multiple brands and retailers. The ability to utilize this knowledge in ways that benefit lead firms is a critical source of differentiation.

35 Adidas’ recent decision to open up two robot-based factories in Germany and the US for the production of trainers illustrates the threat that technology represents for garment exporting countries. Robots are particularly appealing in an era of fast fashion and speed. They enable companies to cut shipping time. Adidas estimates a cut of delivery time from 12-18 months to less than a week and maybe even a day. These factories will create about 160 production jobs, compared with a thousand or more in a typical factory in Asia.
4.2 Recommendations for Bangladesh’s Policy Makers

Our findings point to an absence of market mechanisms to ensure that value creation and value appropriation in Bangladesh’s garment production are aligned for all participants. Inconsistent with the widespread public opinion, we show that Bangladesh’s manufacturers appropriate considerable value through their participation in the supply chain, which is aligned with their value creation. We also show that these are on par with those of the lead firms. The major distortion we document is in relation to garment employees. Such a situation calls for policy intervention to correct for this distortion. There are several means to address this concern. The most apparent one is to raise the minimum wage levels for garment employees, particularly for those at the lower level of the pay scale who lack negotiating power. The government should also support labour unionization and assist employees in overcoming resistance by factory owners to such attempts, so that labour can speak in unified voice and exercise collective power. It should also provide training for labour and labour union leaders regarding proper and responsible collective bargaining.

There is also a need to increase the transparency requirements of Bangladesh manufacturers. The limited firm-level data to document the activities of these firms deprive policymakers—and the academics and consultants who advise them—of the ability to study this industry and propose appropriate policy responses. The growing significance of the garment industry to Bangladesh’s economy increases the urgency of this initiative.

Furthermore, Bangladesh’s comparative advantage as a location for garment production affords policymakers substantial leverage with global brands that they should utilize more forcefully to remove the distortion we document in relation to labour in garment production. Bangladesh is the world’s second largest garment exporter and has a production capacity to support large scale production volume. It also has the lowest wage levels of all major garment production locations. Relocating production elsewhere is, therefore, likely to raise the outsourcing cost of the global brands and may impose greater fragmentation because few countries are able to support production magnitudes comparable to those of Bangladesh. This will raise managerial and logistic costs associated with global sourcing. Under such circumstances, Bangladesh’s policymakers have considerable power to demand higher pay from global brands, a leverage they should use to improve labour wages and overall work conditions.

As those in command of the environment that affects firms’ ability to create and appropriate value, policy makers can impact the gains that the manufacturers derive from their participation in the supply chain. Policy efforts are required to differentiate Bangladesh as a location for garment production and create market conditions that remove constraints on value creation and enable firms to upgrade their capabilities. Below we outline several suggestions with the potential to make progress in this direction.

*Differentiate Bangladesh as a Globally Competitive Location for Garment Production*

Lead firms, including those who have been operating in Bangladesh for years and decades, consider Bangladesh in a global, comparative perspective and continuously evaluate its attractiveness as a production location relative to alternative countries. To remain competitive and differentiate itself from these alternative production locations, policy makers need to view Bangladesh in the same comparative manner (Sun 2016).
This requires identifying the competition and establishing explicit benchmarks for differentiation efforts. Not all countries that produce garment are direct competitors. Some operate at lower value-added activities, producing basic items (e.g., Ethiopia, Myanmar); others produce higher value-added activities, such as high-end fashion. Neighbouring countries should receive specific attention in this exercise as they share the same geographic advantages and disadvantages, and as such, are often more immediate competitors. Attention should be given not only for immediate competitors but also for those that may pose a competitive threat in the future (UNIDO 2015). Some African countries (e.g., Ethiopia) might pose such threat.

The next step requires the identification of the criteria employed by lead firms to select the country. Some of these criteria vary across firms, but there are factors that apply at different levels to all of them. Lead time is a case in point. It is a major selection criterion employed by all lead firms, to such an extent that some are switching production to nearby countries to save on shipping time. US firms, however, still prefer Asia but increasingly outsource to South America, whereas European firms are moving their production to the neighbouring Eastern European countries (Bruce and Daly 2006; Pious and Burns 2015). Bangladesh performs poorly in terms of lead time. China and India provide a 55- and 65-day delivery time respectively, while Bangladesh is at 90 to 120 days (Hoque 2013). Global garment buyers surveyed by the World Bank ranked Bangladesh lowest among six garment exporters in Southeast Asia on this dimension (Lopez-Acevedo and Robertson 2016). Policy makers should take actions to remove obstacles to speedy production and delivery by developing infrastructure and utilities. They should also direct special promotional efforts to neighbouring countries, such as Japan, to whom Bangladesh is attractive due to its geographic proximity. In fact, RMG export to Japan is rising rapidly in recent years with several Japanese buyers setting up offices in Bangladesh and expanding their business.

Acknowledgement ought to be made of the value assigned by global brands for critical mass in making their location choices. Half the US and European chief purchasing officers (CPOs) of the largest European and US apparel companies outsourcing from Bangladesh surveyed by McKinsey mentioned capacity as the second big advantage of Bangladesh’s garment industry (behind only cost advantage), which offers the ability to produce larger volume orders (McKinsey 2011).

Safety is becoming an increasingly crucial aspect of countries’ comparative advantage, to an extent that it may overwhelm most other considerations. The recent casualties in Bangladesh, and particularly the deliberate and explicit targeting of foreigners, might pose a threat for expansion of Bangladesh’s integration in the global garment supply chain if they are not tackled with utmost priority. Governments’ efforts in this regard should be communicated properly to the world.

Seek Low-Cost Access to Export Markets
Access to markets on terms that are comparable with those of the competition is critical in the export-intensive garment supply chain and a major determinant of lead firms’ location choices. Half of respondents to a survey of the US Fashion Industry Association expect to strategically adjust or redesign their supply chain based on the Trans-Pacific Partnership (TPP), and three-quarter of them indicated that they will source more textiles and apparel from TPP partners if the

36 Traditionally most of this production has been outsourced to Italy, but China is emerging as a location for such activities.
agreement comes into effect (Lu 2015).

Since the study was conducted, the US decided to pull out of the TPP, which calls into question its survival and relevance, but the critical importance of trade agreements for the long-term survival and prosperity of Bangladesh’s garment industry has not changed. Bangladesh has the lowest numbers of regional and bilateral trade agreements among Southeast Asian garment exporting countries (Lopez-Acevedo and Robertson 2016). This issue is particularly disturbing in relation to Vietnam, its closest competitor, placing Bangladesh at a comparative disadvantage in terms of its access to major export markets.

**Facilitate Consolidation: Differentiate Bangladesh in Size and Scope of Garment Manufacturers**

Scale and scope afford garment manufacturers considerable advantages, as they enable them to share overheads and improve their bargaining power with lead firms. The latter prefer to work with large manufacturers whose scale matches their own, to avoid inefficient fragmentation of their production. They also value the ability of larger manufacturers to embrace the investment required in areas such as technology or safety upgrades. A joint OECD/WTO/IDE-JETRO (2013) survey of lead firms in apparel and textiles sectors around the world found that they prefer to source from a small number of large suppliers with ‘one-shop-give-all’ firms, mostly for speed consideration, favouring scope expansion and vertical integration of large firms. Size and scope enable manufacturers to handle larger shares of lead firms’ business, increasing the latter’s switching costs and, at the same time, to handle larger number of customers, reducing their dependency on individual buyers.

Despite this prodigious economic logic, garment production has remained highly fragmented\(^{37}\). As Figure 10 illustrates, the number of establishments in Bangladesh has grown continuously since the inception of the industry, rising from 384 in 1984-5 to a peak in 2012-13 at almost 6000 establishments, before falling after the Rana Plaza collapse to around 4000 and remaining at this level since then (see also Zaid and Monzur 2014). The pressure for compliance and safety standards that followed the Rana Plaza collapse spurred some consolidation, as the smaller and weaker manufacturers were unable to meet the new standards. Figure 10 also shows that the size of establishments had been declining continuously, pointing to productivity improvement rather than growth in size (Figure 9). Productivity improvements have achieved significant momentum in recent years, perhaps reflecting the exit of less productive establishments due to the contingent requirements imposed after the Rana Plaza collapse (Zaid and Monzur 2014). Moreover, notwithstanding an increase in the scope of some manufacturers through backward vertical integration, most of Bangladesh’s manufacturers have remained narrowly focused.

---

\(^{37}\) Similar industry structure exists in other garment producing countries: Sri Lanka and India are estimated to have respectively 300 and 28,000 garment factories (Jayasinghe 2016).
This situation points to the presence of some obstacles that arrest a natural process of consolidation and calls for policy intervention to remove them. Governments can play a major enabling role in the provision of the resources needed for such expansions, presumably capital and managerial skills. Notwithstanding a fairly developed local equity markets, the garment manufacturers are all privately owned, relying for their finances on debt and internal resources, which may not suffice for this endeavour.

*Facilitate Manufacturers’ Upgrade to Higher Value-Added Activities*

Since the emergence of the garment industry in the 1980s, Bangladesh’s main comparative advantage has been low cost, enabled by low labour cost and government support that had reduced the cost of doing business for Bangladesh’s manufacturers. Bangladeshi labour costs are the lowest of the top 25 apparel-exporting countries. With about $68 per month minimum wage to low-skilled employees in 2013, it compares favourably with $79 in Pakistan, $80 in Cambodia, $120 for Vietnam and India, and $270 for China (ILO 2013; Luebker 2014). The global buyers surveyed by the World Bank ranked Bangladesh as number one in terms of cost competitiveness among eight Asian countries and suggested that Bangladesh cost advantages are so substantial that they make up for shortcoming in other areas such as quality and lead time (Lopez-Acevedo and Robertson 2016).
Indeed, Bangladesh has become a primary destination for companies that compete on price and specialize in low- and mid-market priced apparel. Naturally, these companies are highly price sensitive and create constant pressure on manufacturers’ prices. This deprives the manufacturers of resources for investment in capability upgrading and creates vicious circles whereby they are trapped in low-end activities at the bottom of the value chain, with limited differentiation beyond cost (Quelch 2007). They withdraw into a ‘race for the bottom’ and have no option but to accept prices set up by the lead firms. These circumstances call for government intervention to assist manufacturers to escape the commodity trap by providing resources, notably capital, for capabilities upgrade.

Government policy has played a major role in supporting this outcome. The gist of its policy, essentially since the emergence of the industry, has been to lower the cost of doing business for the manufacturers, making them more cost competitive. The generous support of the government—in the form of tax and duty exemptions described above—has surely played a major role in enabling Bangladeshi manufacturers to maintain this cost level. This policy was instrumental in encouraging the emergence and development of the industry but may no longer be appropriate at the current stage of the industry. It appears that the industry has reached a level of maturity that requires policy change from cost benefits to skills upgrade. Continuous government support in the form of past policies may even arrest a natural upgrade process and harm the future development of the industry. A large body of academic research supports the notion that state-guided policies can be helpful to mobilize resources at the early levels of development, but can become a serious drag on productivity and innovation—the very factors needed for the transition to middle income economies. Prolonged government support that shields firms from competitive forces often leads to negative consequences as it reduces productivity and arrests innovation (Lee 1996; Baldwin 2004). Policy actions should be directed instead towards the provision of the resources required to assist garment manufacturers to upgrade their skills.

Low cost is not the only means of participation in global supply chains, and Bangladesh policymakers need to create the conditions for participation that is based on specialization rather than on costs—that is, horizontal specialization rather than vertical specialization, which is based on firms’ specialization and excellence rather than on wage gaps (Baldwin 2012).38

When introducing such policies, Bangladesh’s policymakers may borrow a page from other textile producing countries that have implemented successfully such skill upgrades. Tokatli and Kizilgun (2004, 2009) describe how—despite the absence of cost advantage of Turkey garment producers (Turkey garment unit price is triple that of Bangladesh)—skill upgrade had brought about such a transformation and turned Turkey to a leading apparel exporter. The skill upgrade resulted in fundamental changes in the structure of the industry and the nature of the participating firms with the most successful among them able to develop their own design capabilities and brand name39.

---

38 One example of this form of specialization is the US auto industry where there is more US off shoring to high-wage Canada than there is to low-wage Mexico. Baldwin (2012) provides evidence of the broader prevalence of such patterns among neighboring high-wage countries like Canada and the US, and within Western Europe.
39 A notable example of these developments is Mavi Jeans, which had transformed itself from a jeans manufacturer into a branded firm. It sells its own branded jeans worldwide, including in some of the most prestigious fashion department stores such as Nordstrom, Macy’s and Bloomingdale’s, and operates its own stores in the world’s most advanced cities (Tokatli and Kizilgun 2004).
A similar change took place in Mexico (Gereffi 2005). As manufacturers move up the value chain, their negotiating power increases, enabling them to appropriate greater value. As capital is replacing labour in the implementation of the more automated, repetitive jobs (ILO and Asia Development Bank 2014), this need becomes ever more urgent.

Participation in global supply chains has been recognized as a promising venue for learning and upgrading, as firms are being drawn into global networks of interactions and relationships, including with more technologically advanced firms, and can benefit from the transfer of technological knowledge (Gereffi 1999, 2005; Görg and Seric 2013). However, research consistently shows that firms’ ability to learn and upgrade themselves by participating in global supply chains rests on their own technological resources and capabilities. This research also finds that a majority of emerging-market firms are unable to benefit from this opportunity due to their limited capabilities that constrain their learning capacity (Marchi, Giuliani and Rabellotti 2016). In a large-scale study of firms in 19 African countries, Görg and Seric (2013) find that the upgrading of domestic firms supplying to global firms is contingent upon assistance from the government or the global firms, which calls for policy action. Such capability upgrading is particularly urgent in the contemporary environment where global brands are shifting production back home, taking advantage of automation and other cost-saving practices.

Upgrades to higher value-added activities have become more imperative with the growing threat for low cost, low skill production from both technology and firms’ strategies. Recent trends have caused apparel companies to return production back home, responding to the changing consumer agenda and the greater value they place on the ‘made in…’. A study of Italian firms has demonstrated a trend for reshoring, driven by consumers’ new sensitivities to country of origin, as well as demand for customization and personalization that creates need for firms to locate in proximity to their customers to stay in touch with demand and to reap synergies with other value-added activities, suggesting that in these industries ‘the smiling curve does not smile’ (Bettiol 2017)\(^{40}\).

\textit{Data and Information}

Information asymmetries are prevalent throughout the supply chain and are particularly severe in the local part of the chain, creating grounds for various types of market failures and various sorts of distortions in the working of markets and jeopardizing the full materialization of many potential benefits that Bangladeshi stakeholders can derive from their participation in the global chain of garment.

It might well be that some of the imbalance we document in the value chain—notably consumers’ power and their ability to claim value, and the imbalance between value creation and appropriation with reference to labour in the production—are a result of information asymmetries. Consumers in the major markets for garment are well informed and have access to a substantial amount of information, and this puts them in a very strong power position versus lead firms. Labour in

\(^{40}\) One means by which the Bangladesh government could assist the upgrading of local manufacturers is by encouraging expansion outside Bangladesh. \textit{Fibre2Fashion} magazine reports anecdotal observations of some Bangladeshi firms that are keen to invest in the Ethiopian apparel sector (\textit{Fibre2Fashion}, December 2016).
Bangladesh, in contrast, are not informed and this weakens their negotiating power with the manufacturers.

Policymakers can play critical role in fostering information and making it easily available to all relevant participants. Information was shown to be vital for the efficient flow of goods and intermediaries along value chains. By virtue of their position and the resources at their disposal, policymakers can access information that is not otherwise available on the market and far exceed what individual participants can access on their own. One initiative that moves in this direction is the introduction and overseeing of industry standards, which would reduce buyers’ search costs and serve as a formal way of differentiation for manufacturers. Notable industry standards may include product quality or governance codes, which are notoriously difficult to evaluate by individual companies and difficult to communicate in a credible manner. Research has shown that factories working for major brands have better working conditions, while the smaller factories are still working to ensure labour standards, all of which agrees with research that shows that being connected to global networks—via either trade or outsourcing linkages—acts to improve labour conditions (Berik and Rodgers 2010).

4.3 Recommendations for Lead Firms

The vast magnitude of the brands’ activities, coupled with their broad global scope, afford them the resources and skills to make significant contributions and play a dominant role in improving labour conditions in Bangladesh’s factories. Most of the efforts embraced by global brands in Bangladesh, many of which led by H&M—Bangladesh’s largest garment buyer and a predominant advocate of labour rights even before the Rana Plaza and most notably after the tragedy—have focused on improvement of safety in Bangladesh’s garment factories. As worthy as these attempts are, global brands need to both widen and deepen the scope of their involvement and play a more active and decisive role in instilling change and extend the sphere of their activities beyond safety alone, to encompass broader governance issues in garment factories.

*Increase Value Creation*

As those who construct and manage the supply chain, the lead firms are in command of the value created by the supply chain as a whole. While all other participants are concerned with improving their own value creation and appropriation, lead firms face a dual task: improving their own value creation as well as that of the chain as a whole.

There are several inherent tensions in the management of supply chains that bring together otherwise independent organizations, with their own histories and distinctive attributes, to work in collaboration. Notable among them is the challenge of striking a balance between long-term relationships and flexibility. The latter is a major virtue of supply chains, which offer the advantage of making low-cost adjustments to changes in market demand and competitive dynamics. At the same time, however, long-term relationships are essential for the establishment of trust and effective work relationships that foster collaboration. Lead firms must also attend to inherent tensions between the interests of individual participants and those of the chain as a whole. These are often not aligned and pose a challenge for the collaborative work.

The tasks associated with the creation of value by the management of supply chains are different
from those associated with the management of a firm and require different managerial capabilities and skills. Value creation through supply chains is based on the ability to access competencies that firms do not have nor own, and to manage them effectively. This requires competencies in connecting to others and the ability to draw together multiple participants into a flexible and adaptable supply chain that maximizes the synergies among them (Kale, Singh and Bell 2009; Wind, Fung and Fung 2009).

**Turn the Supply Chain into a Source of Competitive Advantage**
Competitive advantage can originate in the construction of the value chain, the distinctive combinations that firms strike between activities they maintain in-house and those they outsource, as well as in the selection of destinations and outsourcing targets. Indeed, there are considerable variations in this regard among global brands in the fashion industry—with Zara’s vertically integrated model at one end, H&M’s outsourcing-based model at the other, and different combinations in between. Uniqlo’s supply chain, for example, combines elements from both models, and Ralph Lauren’s has its own distinctive combinations, opening up possibilities to create a unique and inimitable competitive advantage.

The structure and management of supply chains that are suitable for each firm varies, because they are based on the match between the firm’s business model and its distinctive set of strengths and weaknesses. This fit makes the appropriate choice distinctive for each firm. Even though such advantages are largely not observable and not easily understood by outsiders, they could provide sustained competitive advantage.

Value creation by the supply chain lies in the intersections among the different activities and the coordination among them. A modularization of the value chain and the development of coordination capabilities require a shift in mind-set from country-based activities to a portfolio approach. Developing a modulator approach also requires the development of capabilities to manage interdependencies among the constituent parts.

**Develop Close Partnership with Bangladesh’s Manufacturers**
The collaborative nature of value creation in supply chains entails a propensity for individual participants to act in the interest of others who are dependent on them for their own ability to create value (Tricore and Clayton 2015). Viewing manufacturers as long-term partners rather than as suppliers, and fostering their growth alongside their own, is thus in the interest of lead firms and is likely to encourage collaboration and enhance value creation (Park and Dickson 2008). Lead firms should embrace such relationships and commit sufficient resources to establishing and nurturing them.

This requires a deep understanding of the manufacturers’ business, such that lead firms can understand their costs and set up payments that reassure comfortable margins, for instance, by sharing the consequences of fluctuations in the price of raw material, as they affect the cost of the manufacturers. The lead firms should also take interest in developing the skills of their manufacturers by best-practice sharing and the provision of feedback on quality, delivery time, and so on. It also involves sharing knowledge with suppliers and reducing knowledge asymmetries between lead firm and their suppliers. Through these efforts, lead firms can take a note from Japanese firms, who excel in developing close and productive relationships with their suppliers’
network. This ability is frequently cited as a major reason for their success (Liker and Choi 2004).

The development of close, long-lasting relationships is not cost free. Lead firms (buyers) become constrained by their investment in the development of the relationships, and this weakens their position vis-à-vis the manufacturers. This is stronger in weak institutional environments in which relationships substitute for institutions and tie the buyers strongly to the suppliers.

**Actively Manage Information Flow in the Supply Chain**

Lead firms are in command of the circulation of products within the supply chain. These activities should be supplemented by active encouragement of a corresponding flow of information, which is as vital for value creation as the flow of products (Bowersox, Closs and Stank 1999; Hansen 2002; Netessine 2009).

Integrating knowledge that resides among different participants who are independent organizations is a challenging task. At the most basic level, there is a need to develop a common understanding and shared meanings to enable the effective utilization of that knowledge by various participants (Huber 1991; Handfield and Nichols 2002). This often requires bridging different perceptions and views of concepts that are fundamental for value creation in supply chains, such as quality and timeliness (Hult, Ketchen and Ernest 2002). It also demands firms to overcome resistance for knowledge-sharing with other participants with whom a focal firm does not have ownership ties. Research shows that knowledge-sharing within supply chains significantly affects supply chain performance. It increases participants’ awareness of other participants’ needs and enables them to perform their own role in agreement with those needs, enhancing the functioning of the supply chain (Hult, Ketchen and Slater 2004).
Chapter 5  Conclusions

Globally spread supply chains have become a predominate means of value creation in a growing number of industries. Deepening the understanding of their significance for the prosperity of firms and countries has gained considerable importance, fundamental for the way lead firms organize their value creation activities, turning them into a source of differentiation and a major determinant of competitive performance and long-term survival (Kleindorfer and Wind 2009; Tricoire and Clayton 2015). By offering a detailed study of one global supply chain, this study serves to deepen the understanding of ways by which lead firms can maximize the benefits they derive from their participation in supply chains and, at the same time, play a role in appropriation of value in an equitable manner by other participants in the chain, such as producers and labour.

Our findings document that international value creation and value appropriation in the global garment supply chain are largely aligned with the shares created and appropriated by manufacturers and lead firms, and are on par with each other. The main distortion we document is in relation to the labour employed in garment production, whose value creation and value appropriation measured respectively by productivity and wages, appear to be misaligned. In the absence of market mechanisms to correct for this distortion, we advance a call for policy intervention that will address this shortcoming, and outline policy measures that should be taken to protect labour rights.

In this emerging reality, firms do not create value by themselves but rather through their supply chains; thus, their focus should shift from the development of their own capabilities to the ability to create value in collaboration with partners in the supply chain. Our articulation of value creation and value appropriation as distinct yet related dimensions of supply chains serve to identify the capabilities needed to effectively partake in them. By outlining the varying market dynamics of these two dimensions of supply chains, we offer firms and policymakers the means to develop appropriate responses that maximize their gains in a win-win mode.

5.1  Future Research

This study opens up large areas for future research. For example, the broader validity of the study beyond the garment supply chain at a given point in time, in the specific segment of the industry that was the focus of this study, is an issue for empirical examination by future research. Industrial characteristics and dynamic changes over time in supply chains modify the nature of value creation and value appropriation and may restrain the ability to generalize our findings. Also, distinctive features of the garment industry in Bangladesh may constrain the broader applicability of the study and its implications, even for other garment exporting countries in Asia. Broader validity might be examined also within the garment industry at different levels of quality and prices (e.g., low versus high-end clothing). This could be particularly illuminating in substantiating our suggestion that skills upgrade is likely to increase manufacturers’ ability to appropriate value by increasing their negotiating power. Validity might be constrained also over time. A notable factor that limits temporal validity is the changing balance between capital and labour in production over time. This might be relevant in our study which took place in the aftermath of the Rana Plaza, arguably a very distinctive time period that had strong influence on the very issues we studied here. The framework
we developed here can be employed to examine the balance between value creation and appropriation across other industries and over time.

A noteworthy direction for future research is to study the balance between value creation and appropriation in relation to employees in other parts of the garment supply chain. Employment in this supply chain involves multiple and wide-ranging employment groups, with varying skills and pay levels.

Progress could also be made by studying Bangladesh in a comparative perspective with other garment exporting countries. Particularly noteworthy are countries at a similar development stage to Bangladesh, such as Cambodia (Stephenson 2013). Such comparison could shed light on the extent to which idiosyncratic country characteristics affect our findings, and offer insights regarding their broader validity beyond Bangladesh. One aspect that such a comparative study would help clarify is the impact of competitive intensity on labour wages and labour conditions, and whether the burden from an increased level of competition is fairly distributed among lead firms, manufacturers and employees.

The study of other aspects of working conditions—such as working hours, benefits, and working environments—is another warranted direction for future research. Such a study would offer a fuller picture on whether the workers appropriated fair shares of values in the process of rapid growth of the Bangladesh garment industry.

Future research may also examine different shapes of the ‘smiling curve’ across industries and within them, and show how firms create value in different types of activities in the same supply chains. The comparison between Toyota versus GM is a case in point. Toyota creates substantial value in manufacturing itself as compared to other car manufacturers. Apple versus Microsoft suggests another example. Apple turned the manufacturing itself into a source of value creation, whereas other computer-producing firms have outsourced these activities to a third party. In the garment industry, Zara versus H&M demonstrates a similar situation.

Yet another task for the future is to deepen the understanding of the relationships among the three explanations we offer for the distinctiveness of the garment value chain in terms of value creation and appropriation. In our discussion, we present some suggestive explanations based on comparisons with supply chains in other industries, for instance, in terms of the intensity of the competition and the price pressure on lead firms and lead firms’ investment in the creation of social value, as well as in other garment-producing countries, notably in relation to government support. Such comparisons enable us to hold constant the impact of one of the explanations while examining the other, and may throw light on these relationships.

Lastly, future research should place our study in the broader context of the debate on environmental deterioration and examine the environmental consequences of garment production and the growing demand for clothing. Special attention should be paid by this research to ethical purchasing and global sustainability, notably through the Global Reporting Initiative (GRI) and Sedex Information Exchange, with consideration of the impact of garment production on these issues.
References


Bain M. 2015. The thing that makes Bangladesh’s garment industry such a huge success also makes it deadly. Quartz, April 29. https://qz.com/389741/the-thing-that-makes-bangladeshsgarment-industry-such-a-huge-success-also-makes-it-deadly/


Bettiol M. 2017. Industrial district firms do not smile: Structuring the value chain between local and global. In Pederson T. and Camuffo A. (Eds.), Advances in International Management: Global Supply Chains. Forthcoming


Donaldson T. 2016a. Here are the biggest threats to the global supply chain in 2016. The Sourcing


Donaldson T. 2016c. Alliance: Bangladesh garment factory fires have dropped by more than 90%. The Sourcing Journal, April 13.


The Economist. 2017. Clothing companies: Green is the new black. The Economist, April 8.


Görg H. and Seric A. 2013. With a little help from my friends: Supplying to multinationals, buying from multinationals, and domestic firm performance. UNIDO Development Policy, Statistics and Research Brunch,


ILO. 2013. Bangladesh: Seeking better employment conditions for better socioeconomic


Luebker M. 2014. *Minimum wages in the global garment industry*. ILO Regional Office for Asia and the Pacific, ILO.


Stephenson M. 2013. From sweatshop to smartshop: How Asia-Pacific countries can use the lessons of the garment industry in Bangladesh and Cambodia as a driver for inclusive growth. A report prepared for UNESCAP Trade and Investment division.


## Appendices

### Appendix 1. Profiles of the World’s Largest Apparel Firms

<table>
<thead>
<tr>
<th>Presence in Bangladesh</th>
<th>Home country (HQ location)</th>
<th>Ultimate owner (if different)</th>
<th>Revenues Mil. US$</th>
<th>Growth, % annual revenues</th>
<th>Assets Mil. US$</th>
<th>Full Time Employees N</th>
<th>Part Time Employees N</th>
<th>5-year average (2011-2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Eagle</td>
<td>yes</td>
<td>US</td>
<td>3,226</td>
<td>3.81</td>
<td>1,795</td>
<td>6,880</td>
<td>33,420</td>
<td></td>
</tr>
<tr>
<td>Coach</td>
<td></td>
<td>US</td>
<td>4,599</td>
<td>1.96</td>
<td>3,234</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAP*</td>
<td>yes</td>
<td>US</td>
<td>15,489</td>
<td>1.57</td>
<td>7,499</td>
<td>136,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levi Strauss</td>
<td>yes</td>
<td>US</td>
<td>4,660</td>
<td>1.10</td>
<td>3,074</td>
<td>12,100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lululemon</td>
<td></td>
<td>US</td>
<td>1,294</td>
<td>24.25</td>
<td>967</td>
<td>6,602</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Kors</td>
<td>yes</td>
<td>US</td>
<td>1,899</td>
<td>60.46</td>
<td>1,145</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ralph Lauren</td>
<td></td>
<td>US</td>
<td>6,728</td>
<td>9.90</td>
<td>5,476</td>
<td>18,400</td>
<td>9,333</td>
<td></td>
</tr>
<tr>
<td>Hilfiger</td>
<td>yes</td>
<td>US</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under Armour</td>
<td></td>
<td>US</td>
<td>2,537</td>
<td>28.11</td>
<td>1,724</td>
<td>3,420</td>
<td>5,220</td>
<td></td>
</tr>
<tr>
<td>Benetton**</td>
<td>yes</td>
<td>Italy</td>
<td>1,340</td>
<td></td>
<td>2,012</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burberry</td>
<td></td>
<td>UK</td>
<td>4,735</td>
<td>3.95</td>
<td>2,058</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hugo Boss</td>
<td>yes</td>
<td>Germany</td>
<td>3,723</td>
<td>0.75</td>
<td>1,963</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mango***</td>
<td>yes</td>
<td>Spain</td>
<td>1,782</td>
<td>12.25</td>
<td>3,538</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next</td>
<td>yes</td>
<td>UK</td>
<td>8,374</td>
<td>(2.76)</td>
<td>4,627</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Esprit</td>
<td></td>
<td>Hong Kong/US</td>
<td>409</td>
<td>120.46</td>
<td>2,405</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H&amp;M</td>
<td>yes</td>
<td>Sweden</td>
<td>2,592</td>
<td>163.80</td>
<td>9,501</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uniqlo</td>
<td>yes</td>
<td>Japan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zara</td>
<td>yes</td>
<td>Spain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary statistics (of the above)**

<table>
<thead>
<tr>
<th></th>
<th>5,199</th>
<th>23.51</th>
<th>3,261</th>
<th>30,567</th>
<th>15,991</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S.D.s</strong></td>
<td>5,370.43</td>
<td>46.49</td>
<td>2,506.62</td>
<td>51,918.24</td>
<td>15,233.34</td>
</tr>
</tbody>
</table>

IQ Capital database; companies’ reports

S.D.s is the method of calculating the standard deviation for a sample of the whole population

Empty cells = n.a.

* Throughout the report, data for GAP include GAP, Old Navy and Banana Republic

** Throughout the report, data for Benetton are for 2011 only

***Throughout the report, data for Mango are for 2011-14
Appendix 2. US Wages, Selected Fashion and Apparel Occupations

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Annual Wages, US Average ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misc. Textile Apparel and Furnishings Workers</td>
<td>41,410</td>
</tr>
<tr>
<td>Supervisors Retail Sales Workers</td>
<td>51,190</td>
</tr>
<tr>
<td>Graphic Designers</td>
<td>51,270</td>
</tr>
<tr>
<td>Fabric and Apparel Patternmakers</td>
<td>54,120</td>
</tr>
<tr>
<td>Public Relations Specialists</td>
<td>63,310</td>
</tr>
<tr>
<td>Designers</td>
<td>72,940</td>
</tr>
<tr>
<td>Art and Design Workers</td>
<td>74,440</td>
</tr>
<tr>
<td>Fashion Designers</td>
<td>82,730</td>
</tr>
<tr>
<td>Artists and Related Workers</td>
<td>126,280</td>
</tr>
<tr>
<td>Art Directors</td>
<td>131,470</td>
</tr>
</tbody>
</table>

As of May 2015
Appendix 3. Custom Clearing Cost for RMG Products*

<table>
<thead>
<tr>
<th>Country</th>
<th>MFN duty rates</th>
<th>Import VAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Denmark</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>Finland</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>France</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Germany</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td>Greece</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Italy</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>Netherlands</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Norway</td>
<td>10.7</td>
<td>25</td>
</tr>
<tr>
<td>Spain</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Sweden</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>UK</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Japan</td>
<td>7.4</td>
<td>8</td>
</tr>
<tr>
<td>US</td>
<td>25.9</td>
<td>Varies by state</td>
</tr>
</tbody>
</table>


*HS commodity code 6205.30.0000
Appendix 4. Size of Lead Firms’ Global Retail Networks
Selected Leading Apparel Companies, 5-year average (2011-2015)

<table>
<thead>
<tr>
<th></th>
<th>Total retail sq. ft.</th>
<th>Number of stores (of which owned/operated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ralph Lauren</td>
<td>657</td>
<td>657 (416)</td>
</tr>
<tr>
<td>Michael Kors</td>
<td>785,971</td>
<td>327 (327)</td>
</tr>
<tr>
<td>Lululemon</td>
<td>1,065,000</td>
<td>235</td>
</tr>
<tr>
<td>GAP</td>
<td>37,520,000</td>
<td>3,433 (3,129)</td>
</tr>
<tr>
<td>Levi Strauss</td>
<td>1,065,000</td>
<td>1,856 (656)</td>
</tr>
<tr>
<td>Coach</td>
<td>935</td>
<td>935 (935)</td>
</tr>
<tr>
<td>American Eagle</td>
<td>6,343,715</td>
<td>1,188 (1,062)</td>
</tr>
<tr>
<td>Under Armour</td>
<td></td>
<td>191 (191)</td>
</tr>
<tr>
<td>Esprit</td>
<td></td>
<td>124</td>
</tr>
</tbody>
</table>

IQ Capital database
Appendix 5. Retail Rental Prices, World’s Major Cosmopolitan Centres

Own calculation based on data from:
Appendix 6. Corporate Tax Rate Paid
World Largest Apparel Companies*, 5-year average, 2011-2015

<table>
<thead>
<tr>
<th>Company</th>
<th>Effective Tax Rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Eagle</td>
<td>38.98</td>
</tr>
<tr>
<td>Burberry</td>
<td>26.04</td>
</tr>
<tr>
<td>Coach</td>
<td>31.97</td>
</tr>
<tr>
<td>Esprit</td>
<td>52.78</td>
</tr>
<tr>
<td>GAP</td>
<td>38.71</td>
</tr>
<tr>
<td>H&amp;M</td>
<td>23.75</td>
</tr>
<tr>
<td>Hugo Boss</td>
<td>23.67</td>
</tr>
<tr>
<td>Levi Strauss</td>
<td>31.06</td>
</tr>
<tr>
<td>Lululemon</td>
<td>33.10</td>
</tr>
<tr>
<td>Michael Kors</td>
<td>37.43</td>
</tr>
<tr>
<td>Next</td>
<td>23.39</td>
</tr>
<tr>
<td>Ralph Lauren</td>
<td>30.67</td>
</tr>
<tr>
<td>Under Armour</td>
<td>38.36</td>
</tr>
<tr>
<td>Uniqlo</td>
<td>37.43</td>
</tr>
<tr>
<td>Zara</td>
<td>34.17</td>
</tr>
</tbody>
</table>

IQ Capital database
*All firms for which tax data are available.
Appendix 7. Case Studies of Successful Garment Manufacturers in Bangladesh

Firm 1: Misami Garments

Misami was established in 1984 in with one factory. Now they have four factories, located in Dhaka, Manikganj, Adamjee and Comilla. This firm has both sewing and washing units. It sews and washes 2 million pieces of denim and non-denim bottoms and 500 thousand outerwear a month. Productivity rose from 100,000 pieces per month at the beginning, to the current 2.2 million pieces per month. The table below shows the growth of the company in terms of employment:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of employees</td>
<td>4,250</td>
<td>4,300</td>
<td>4,010</td>
<td>4,044</td>
<td>4,454</td>
<td>6,725</td>
<td>7,520</td>
<td>7,758</td>
<td>10,584</td>
<td>11,616</td>
</tr>
</tbody>
</table>

This is a family-owned business, set up by Reza Ali (Group Chairman) in the year 1984. The current managing director, Miran Ali, and deputy managing director, Mishal Ali, are sons of Reza Ali. They became involved in the business after completing their education abroad. They aspire to sustain high-quality standards in their factories and increase the number of factories while maintaining the standard. Out of four factories, currently two are Leadership in Energy and Environmental Design (LEED) Platinum factories with the highest score in the world.

The success of this firm lies in their risk-taking capability, quality of products, sound organization structure and investment in technology. Lunch is not provided by the enterprise, but lunch allowance is provided to all. All workers are also provided with a transportation allowance. According to this firm, the factors which make an RMG firm successful include production and capacity planning, IT support and structured organization. This is a compliant factory, but still they are price takers, where price is determined by the buyers. However, their relative position in the market gives them an ability in terms of setting prices. Their position is better than many others. According to this firm, buyers will not take into account currency fluctuations; nor should they be asked to. However, buyers can ensure stability of orders with month-to-month variance; being more stable is their greatest point.

Firm 2: Tusuka Garments

Tusuka has been in the garment business since 1997, started as a buying house named Texel and focused only in the woven market. With a vision of specialized denim/jeans-making, in 2001 Tusuka started its venture as a jeans manufacturer with only two sewing lines and a small washing unit, to seek opportunity in the globally growing demand for denim garments. After a year, management found it necessary to have an advanced washing section to fulfil the vision. Therefore, from 2003, the company started to expand, adding the washing and new sewing lines into its compound. Now Tusuka has a washing capacity of 60,000 pieces per day and a total of 44 sewing lines specialized in denim garment making.

The factors that contributed most to their success are better technical know-how of management in the production process; product and market specialization (i.e., only jeans and mostly for the Europe market); quality and commitment; maintaining proper working condition and compliance;
good research and development and a good marketing team that does research on fashion, trends, washing, chemicals and other trends and is supported by the latest machines and technologies. The company’s management is passionate about fashion jeans manufacturing, and the main focus of the company is on fancy washes with optimum quality and delivery.

Tusuka incorporates the latest washing technologies, chemicals and machineries in washing. It also integrated a dedicated R&D department to learn and implement new washing techniques to match the trends. To ensure quality, they keep advanced sewing machineries in the production line and a dedicated quality team for individual buyers/brand. The in-house garment testing laboratory is able to meet the basic testing requirements. They are dedicated to offering the best product to their buyers. With Tusuka, quality and service can be seen. A higher retention of employees is an indication of their success and also a critical factor that helps them growing steadily. The corporate philosophy of upper management leads to better employee relations, and higher satisfaction is a reason of such high employee retention.

The situation is mixed in terms of price determination. With some buyers, this firm is a price maker, while in some other cases, they are price takers. There are even buyers who follow both approaches simultaneously. For example, a buyer may retail both basic and premium products. For basic products, they offer it to manufacturers mostly on a volume term at a price set by the buyers. This same customer also works with other manufacturers who produce higher quality or premium products with a good reputation and commitment, and in these cases, prices are set by manufacturers in partnership with buyers.

Tusuka only works with customers who have an attitude of partnership, who will stand beside them in good and bad times, and they reciprocate in similar situations. Of course, they understand the challenges and limitations of situations like a retail market slowdown at the customers’ end leading to demand and price spirals or cost hikes, but they don’t work for customers who tend to take advantage of situations. There are number of customers who follow the price-squeezing practice on any excuse, but, according to Tusuka, they do not outnumber those buyers with a partnership attitude: 70% of the buyers are good, and 30% seek opportunities to take advantage of manufacturers. This entrepreneur has excellent relationships with their customers; they are their partners, and they receive a partnership attitude from buyers in troublesome times to share unforeseen cost burdens. They also support their customers when there is turbulence in the retailing end.

Firm 3: Pacific Jeans Limited

Pacific Jeans is a world-class casual wear manufacturing company known for its state-of-the-art production facility, extensive and unique research and development centre and highly skilled human resources which have transformed a small garment factory, established in 1984, into a supreme institution of premium jeans design and a manufacturing house. At present, Pacific Jeans Limited is one of the leading premium jeans manufacturers, employing 22,000 people, producing over 30 million jeans every year and exporting to over 25 countries. Pacific Jeans Group has a cutting capacity of over 100,000 pieces of garment everyday across all production units. Pacific Jeans Group has the laundry capacity of over 100,000 pieces per day, out of which 20-25% are
value-added garment dye products. Pacific Jeans Group has a finishing and packing capacity of over 100,000 pieces per day.

The differentiation of this firm lies in its high value-added items, development of new processes, their own sample development/collection capability, excellence in quality assurance and maintaining appropriate working standards in their facility. To ensure these differentiations, they place a high priority on human resources development and management, particularly in the mid-management level of each and every department. To deliver at a premium market segment and to ensure quality products with sophisticated product detailing, they always work and invest on technology upgrading. Pacific Jeans Innovation Centre is continuously experimenting in innovative fits, finishes, fabrics and design development in denim. Their collaboration with highly regarded designers from US, EU and Japanese brands has contributed in a special way to establishing them not only as a world-class manufacturer but also as a supreme denim and casual design solutions company. In summary, the combination of HR management, technology upgrading, quality assurance, value addition and product detailing, and workplace standard maintenance make up the key success factors.

Pacific Jeans works on both volume-based segments and high-end items, so they are a both price taker and a price setter. Though in the market they are predominantly a price taker and are quite habituated with such a business model, their capability to develop their own collections as well as produce high-end product-detailing with top-class quality assurance and consistency gives Pacific Jeans the edge to set price together with their partners/customers.

In general, it is manufacturers who absorb the impact caused by market fluctuations, such as those in currency exchange rates, wage increases, and other market forces. In a few cases, however, buyers who have long term relationships share the pressure caused by such market forces. However, in the case of Pacific Jeans, the customers listen to them, they partner with them and share such business impacts because together they believe in a win-win partnership rather than a ‘give and take’ approach.
Appendix 8. Expenditure on Apparel, % Total Consumers’ Expenditure

8a. US (Apparel as % of Total Consumer Expenditure)


8b. Europe (Weight of Clothing in the Total Consumer Price Index)

EUROSTAT Harmonized Indices of Consumer Prices (HICP) http://ec.europa.eu/eurostat/web/hicp/data/main-tables