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A New Agenda: Improving the Competitiveness of the Textiles and Apparel Value Chain in India

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ACRONYMS AND ABBREVIATIONS

AEPC	Apparel Export Promotion Council
CAGR	compounded annual growth rate
CETP	common effluent treatment plant
CPO	chief purchasing officer
FDI	foreign direct investment
GoI	Government of India
GST	Goods and Services Tax
IbIn	India Backbone Implementation Network
MFA	Multi-fibre Arrangement
MMF	manmade fibers
MoEF	Ministry of Environment and Forests
MoMSME	Ministry of Micro, Small, and Medium Enterprises
MoT	Ministry of Textiles
OEM	original equipment manufacturer
PSF	polyester staple fiber
PTA	purified terephthalic acid
R&D	research and development
RMS	risk management systems
SITP	Scheme for Integrated Textile Parks
SPV	special purpose vehicle
TUFS	Technology Upgradation Fund Scheme
ZLD	Zero Liquid Discharge

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EXECUTIVE SUMMARY

India's textiles and apparel value chain is at a critical juncture. It has not reached its potential and is slipping in competitiveness on several fronts. India largely misses out on the global industry's peak demand for (Northern hemisphere) winter garments. Its apparel exporters are known for their unreliability and long lead times, making global buyers look elsewhere. In recent surveys of global buyers, India is not even in the top four of potential replacements for sourcing in China. Its processing industry is facing an environmental regulatory crisis, which, if unaddressed, would further fragment the domestic textiles and apparel value chain. Across the value chain, multiple segments are trapped in similar problems, with long lead times and low capacity utilization constraining investment and jobs. The domestic value chain contains many pockets of dynamism, with world-class firms, highly skilled workers, and leading-edge technology; yet it also contains many small firms sheltering behind protective walls and coddled by protective schemes, a state of affairs that reduces the diffusion of capabilities across the value chain.

The poor performance of the industry is rooted in the complex interaction of common action problems and regulatory constraints, reinforced by interrelated outcomes such as fragmentation and low diffusion. The twin problems of fragmentation and low diffusion restrict the connections that can form among elements of the supply chain. Customs difficulties restrict the scope of common action by limiting the operational effectiveness of, for example, common marketing, and by limiting the diffusion of capabilities by hindering competitive pressures. Difficulties in sourcing synthetic fabrics and fiber, whether because of low domestic capabilities or customs difficulties, have constrained India's ability to respond effectively to the synthetics-heavy global winter season, keeping capacity utilization low. The result is that, instead of a single national industry benefiting from and competing with global supply, the value chain is characterized by isolated pockets, with fewer connections, a smaller scale, and neither the pressure nor the capability to upgrade and transform.

The industry's responses are similarly constrained. Lobbying, engagement in dialogue, and even investment itself are thus often about seeking further protection and subsidies rather than about working towards productive common action, enhanced value addition, and the promotion of industrial learning. The most labor-intensive segment—India's apparel industry—is not reaping the benefits of the country's strength in cotton fiber, spinning and weaving. To enhance the competitiveness of the apparel industry, well-known reforms, such as the hassle-free import of critical inputs, are needed. Other critical reforms are the introduction of streamlined customs, rapid resolution of disputes over tariff lines, and more flexible overtime arrangements. The industry would be better positioned to compete in fashion exports if economy-wide reforms were introduced to improve the reliability of domestic transport and exports (national GST, customs risk management systems) and to reduce retention, absenteeism, and labor disputes (by implementing alternative contract types).

These reforms alone, however, are not enough, as common action and connections will not automatically follow. For the textiles and apparel value chain to remain intact, the crisis in processing needs to be overcome by introducing the scale needed (by supporting the aggregation of smaller units or attracting larger units) to make environmental investments affordable while ending the informal exceptions to regulation often made for small-scale and informal processors.

Diffusion of capabilities and growth throughout the value chain can be facilitated by reorienting schemes from subsidizing capital to capabilities, and removing size thresholds. Economy-wide reforms and interventions to address power shortages, improve contract resolution, and reform SME support schemes and the environmental framework would further benefit the competitiveness of the sector.

Many of the needed reforms are well-known among industry leaders and policymakers; however, these reforms are not without their opponents. There is deep distrust of the industry by those that would have to participate in reforms, whether customs officers or environmental stakeholders. Sequencing and credible commitment to policy continuity, embedded in an institutional structure of effective policy dialogue and bargaining, will be important to avoid strong opposition to reforms. Building that institutional structure and endowing it with credibility is in that sense among the most important and most cross-cutting actions necessary.

With millions of jobs at stake, the need for a reform agenda is urgent. The current approach, in which one subsidy scheme after another is rendered obsolete by a changing global industry, has proved ineffectual; a concerted effort to implement a new agenda is a pre-requisite for sustaining inclusive growth into the 2020s.

INTRODUCTION

India is the world's second-largest producer of textiles and apparel. By some measures, the textiles and apparel sector is its second-largest employer in the economy, after agriculture. The industry's importance in society and in the country's place in the world stretches back centuries. In the eighteenth century, India may have accounted for a quarter of the global textile trade, and prior to the Industrial Revolution, its producers were out-competing Britain.¹

But the industry's performance in the last few decades has been desultory. The Government of India (GoI) and the Governments of the States are well aware of these challenges. They have introduced many schemes over the years to try to address them. Several of these have met with some success. They have commissioned many reports and compiled many policy statements, with variable records when it comes to implementation. Yet, still, the industry's competitiveness is at best holding steady, and by many accounts is slipping.

So a new agenda for change is needed if the industry's potential is to be realized. Such an agenda must begin by understanding the changing structure of the global industry; it must seek the root causes behind the Indian industry's tendency to lag as a whole, though it has such pockets of promise; and it must then identify specific remedies for these causes, as well as the developmental coalitions and sequence of action that can put these into effect.

While the current report does not claim to provide a complete response to these needs, it is hoped that it might nevertheless represent a first step in that direction. The report prioritizes the competitiveness of the apparel segment, as this is the most labor-intensive segment of the textiles and apparel value chain and is critical in allowing India to meet its employment targets. As the apparel industry is truly global, India's ability to export garments is taken as a proxy for the competitiveness of the apparel segment.

This report is structured as follows: Section 1 sets out the context, describing trends in global markets and in the textiles and apparel supply chain in India; Section 2 analyzes in detail the choke points that are hindering the growth of the latter; Section 3 sets out a reform agenda to address them; and Section 4 concludes.

¹ Herman M. Schwartz, *States versus Markets: The Emergence of a Global Economy, Second Edition* (Basingstoke: Palgrave, 2000), p. 80.

SECTION 1: CONTEXT

A. *A CHANGING GLOBAL INDUSTRY*

1. **In the last two decades, the global textiles and apparel industry has been transformed.** Global trade in textiles and apparel not only more than tripled between 1990 and 2012, its structure also altered dramatically. Its geographic center shifted decisively toward China, whose textile and clothing exports rose from barely US\$17 billion in 1990 to US\$255 billion in 2012 (Figure 1), representing more than a third of the global export market.² China's share of investment in new machines was even higher, reaching over two-thirds of global investment,³ as it installed well over a hundred million spindles and more than a million looms (Table 1; Table 2). Just as the industry's supply structure was transformed, so was its demand structure, with the rise of "fast fashion" (e.g., Zara, H&M) on one side and big-box mass retailers (e.g., Walmart) on the other. Fast fashion retailers in particular have exploded: Inditex (owner of Zara) now has a market capitalization of €74 billion, having increased five times in the last decade.⁴ One of its principal competitors, the Japanese company Fast Retailing (owner of Uniqlo), is opening one new Uniqlo outlet per week and aims to quintuple its sales over the next decade.⁵ Those squeezed between fast fashion and low costs, such as Gap or Sears, have had to reinvent themselves or have gone under.

² World export of clothing and textiles rose from US\$212 billion in 1990 to US\$708 billion in 2012. WTO, "International Trade and Market Access Data," <http://www.wto.org>.

³ In 2012, out of global shipments of textile machinery, China absorbed 65 percent of short-staple spindles, 81 percent of open-end rotors, and 68 percent of shuttleless looms. International Textile Manufacturers Federation (ITMF), "International Textile Machinery Shipment Statistics," <http://www.itmf.org/wb/pages/home/publications/pressrelease.php?id=3>

⁴ *Financial Times*, "Markets Data: Inditex S.A.," <http://markets.ft.com/research/Markets/Tearsheets/Summary?s=ITX:MCE>, as of October 30, 2013.

⁵ David Pilling, "Lunch with the FT: Tadashi Yanai," *Financial Times*, September 20, 2013, <http://www.ft.com/intl/cms/s/2/7d5ca382-2069-11e3-b8c6-00144feab7de.html>.

Figure 1: Textile & Clothing Exports from China 1980-2012 (US\$ billion)⁶

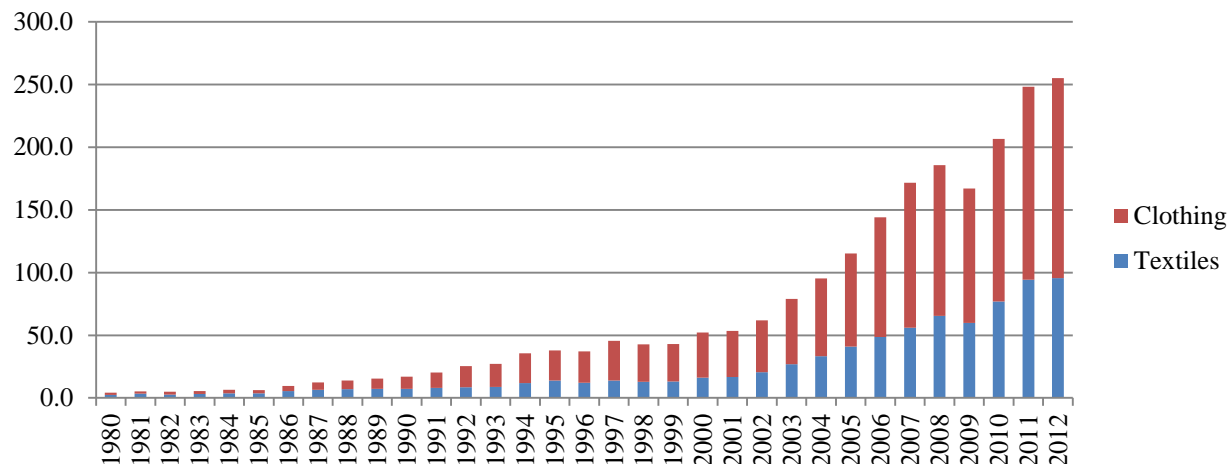


Table 1: Installed Capacity of Spinning Machinery⁷
Thousand units, spinning

Country	Ring Spindles 2005	Ring Spindles 2010	% share of the world	Open-end rotors 2005	Open-end rotors 2010	% share of the world
China	70,600	113,600	46%	1,160	2,198	28%
India	38,460	47,062	19%	501.1	672	9%
Pakistan	9,779	10,549	4%	150.7	158	2%
Indonesia	7,903	8,138	3%	90	117	2%
Turkey	7,055	7,243	3%	543.3	600	8%
Bangladesh	2,484	7,291	3%	55.9	187	2%
Brazil	4,701	4,988	2%	332.8	344	4%
Mexico	3,727	3,767	2%	100	103	1%
Italy	3,956	3,862	2%	79.4	72	1%
Thailand	3,658	3,797	2%	52	48	1%
Rest of the World	43,573	36,536	15%	4,955	3,283	42%
World	195,896	246,833		8,020	7,783	

⁶ WTO, "International Trade and Market Access Data."

⁷ ITMF cited in: Technopak, "Textile & Apparel Compendium 2012," report, 2012, p. 15.

Table 2: Installed Capacity of Weaving Machinery⁸
Units, weaving

Country	Shuttleless looms, 2005	Shuttleless looms, 2010	% share of the world	Shuttle looms, 2005	Shuttle looms, 2010	% share of the world
China	230,870	527,400	46%	679,133	690,700	46%
Pakistan	24,000	27,000	2%	225,000	225,000	15%
Indonesia	29,000	51,736	5%	197,000	192,000	13%
Thailand	54,900	76,980	7%	74,600	51,320	3%
Brazil	40,590	47,313	4%	25,000	28,248	2%
Japan	14,420	8,964	1%	18,950	10,127	1%
India	9,640	18,537	2%	90,230	52,326	3%
Turkey	18,000	40,000	4%	30,000	20,000	1%
Mexico	14,500	14,500	1%	35,000	35,000	2%
Taiwan	31,520	27,830	2%	820	479	0%
Rest of the World	328,290	298,266	26%	224,900	202,194	13%
World	795,730	1138,526		1,600,633	1,507,394	

2. **This end-retail transformation has changed buying patterns, shifting orders towards larger quantities for garment commodities and lower lead times for fashion.** While it is difficult to find hard data, industry insiders unanimously report a shift in the distribution of apparel firms' orders above 10,000 pieces, with the average order growing in quantity by roughly a third in the last decade.⁹ This has been driven by the share of "big box" retailers in the market. At this low-cost end, Walmart's enormous scale and its shift toward own-brand sales have driven scale requirements. Walmart U.S. alone sells more than US\$18 billion per year in apparel, exceeding India's total exports in clothing.¹⁰ At the same time, the business model for fashion garments was turned upside down by Zara with fast fashion. Between the mid-1990s and mid-2000s, Inditex increased the number of new products it introduced each year from less than 10,000 to above 20,000, most of these being produced in season in response to customers' buying patterns.¹¹ Its stores multiplied from four hundred in the mid-1990s to over six thousand

⁸ Ibid. Automatic and non-automatic looms, 75cm or wider, installed in mills (does not include figures for the non-mill sector).

⁹ According to industry sources, fast fashion operates with test orders of 500–2000 pieces, and stock orders ranging from 50,000–500,000. Traditional fashion players such as GAP order 20,000–200,000 pieces. Mass-market, basic garment players such as Walmart can order 1,000,000 plus. Author's communication with David Birnbaum.

¹⁰ In 2012, apparel sales accounted for seven percent, or US\$18 billion, of Walmart U.S.'s total net sales of US\$264.2 billion; in the same year, India's clothing exports amounted to US\$14 billion. US Securities and Exchange Commission, "Form 10-K" for Walmart Stores, Inc. for fiscal year ended January 31, 2012; WTO, "International Trade and Market Access Data."

¹¹ Stephanie O. Crofton and Luis G. Dopico, "Zara-Inditex and the Growth of Fast Fashion," *Essays in Economic & Business History* 25 (2007), p. 44; Competitiveness, "The Catalan Clothing Industry," case study for the Commission of the European Communities Enterprise and Industry Directorate-General, January 18, 2008.

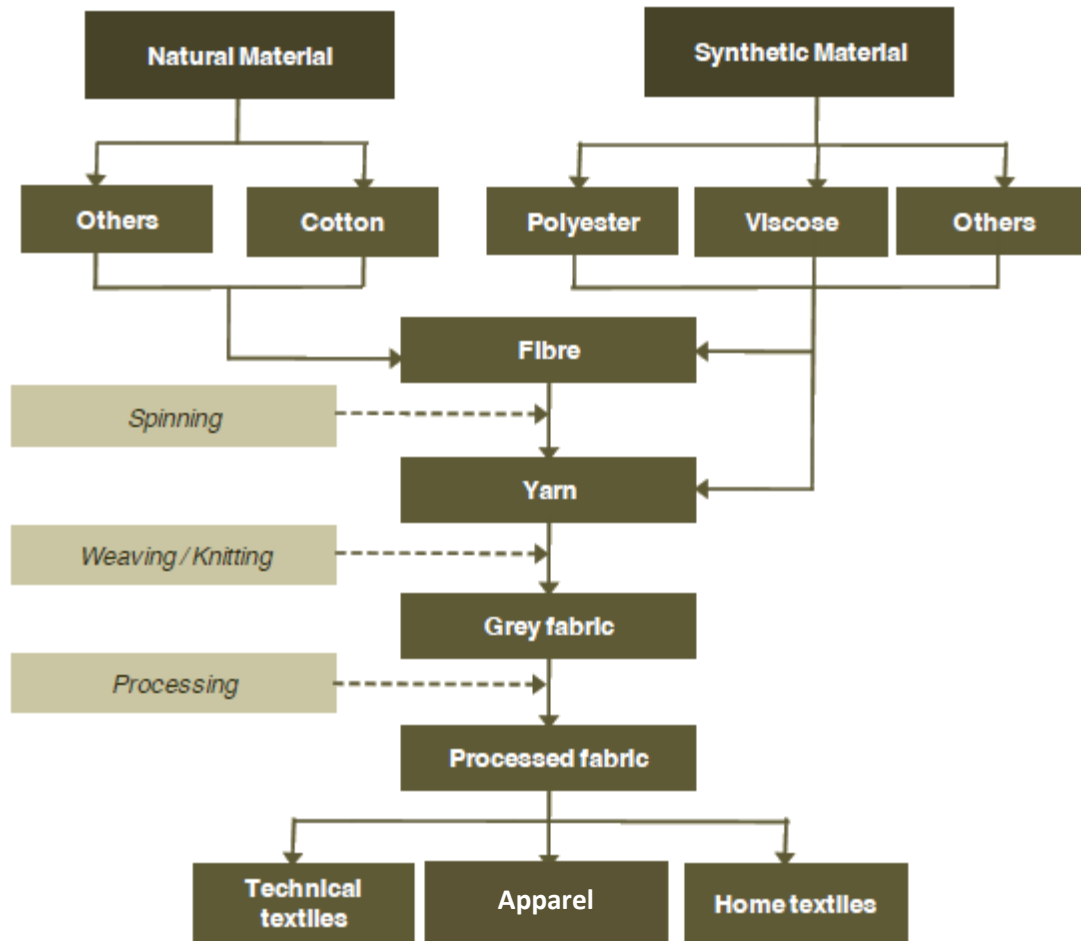
today.¹² To introduce this number of items profitably, Inditex has relentlessly cut lead times, introducing items rapidly to capture market share and avoid clearance sales.¹³ As other retailers have followed suit, or closed down, the mid-range has migrated to rapid turnaround and larger orders. Demand in global apparel is increasingly concentrating in flexible, consumer demand-driven orders for fashion garments at rapid speeds, or enormous orders for basic garment commodities at very low cost—the former being more attractive in terms of value addition.

3. **This has had a knock-on effect across the textiles value chain.** The shift in global demand towards large basic orders and rapid fashion orders has been enabled by and privileged garment firms that are capable of delivering quickly and at scale. For garment makers to meet these requirements, the entire textiles and apparel chain must be capable of meeting them, so the privileging of speed and scale has cascaded backwards through the supply chain (which is depicted in Figure 2). This has resulted in sourcing companies and buyers themselves taking charge of supply, delivering fabric from large and trusted suppliers to garment makers elsewhere, as in Vietnam and Bangladesh, or ordering only from garment firms with local supply chains consisting of large, fast, reliable weaving and processing companies. Garment makers unable to secure supply from imports or capable enough domestic firms will not be competitive for the fastest growing segment of orders.

¹² “Inditex,” <http://www.inditex.com/en>.

¹³ Reportedly, “Zara was able to originate a design and have finished goods in stores within four to five weeks in the case of entirely new designs, and two weeks for modifications (or restocking) of existing products.” Pankaj Ghemawat and José Luis Nueno, “ZARA: Fast Fashion,” Harvard Business School case 9-703-497, December 21, 2006.

Figure 2: The Textiles and Apparel Supply Chain¹⁴



4. **China has both enabled and profited from these transformations, through both its cost profile and its diffusion of capabilities at scale.** Chinese garment firms have set the benchmarks for size and speed. Without such firms, the transformation in demand may not have been possible. With them, China has at least maintained its market share for several years, even as wages in its textile sector have risen to around double those in India, especially for skilled labor (Table 4). In fact, as shown above, China’s exports of textiles and apparel grew by US\$100 billion over the period 2006–2011 (Figure 1), despite the global financial crisis and the rapid escalation of minimum wages.

¹⁴ CRISIL, “Sector Focus: Textiles,” Customized Research Bulletin, January 2012, p. 13.

Table 3: China Losing Its Cost Edge¹⁵
Summary of Relative Cost Index in Weaving and Knitting (Italy=100)

	Brazil	China	Egypt	India	Indonesia	Italy	Korea	Turkey
Texturing	55	45	38	46	45	100	69	60
Woven Textured Yarn Fabric	63	48	41	46	44	100	48	56
Knitted Textured Yarn Fabric	75	60	67	58	63	100	68	72
Knitting Rotor Yarn	44	28	39	27	22	100	39	30
Knitting Ring Yarn	45	27	38	27	23	100	38	29
Knitted Rotor Yarn Fabric	84	122	108	74	77	100	79	77
Knitted Ring Yarn Fabric	75	95	83	63	64	100	68	67
Spinning Ring Ne 30	65	59	48	51	45	100	50	56
Spinning Rotor Ne 20	72	69	56	60	53	100	56	62
Ring Yarn	74	101	87	67	68	100	70	83
Rotor Yarn	89	133	116	80	84	100	84	83
Weaving Ring Yarn	52	41	32	40	37	100	39	49
Weaving Rotor Yarn	51	40	32	39	36	100	41	51
Woven Ring Yarn Fabric	67	70	64	56	55	100	57	62
Woven Rotor Yarn Fabric	72	90	77	61	62	100	64	68
Avg. Index	66	68	62	53	52	100	58	60

Table 4: China's Skilled Labor Costs Highest Among Peers¹⁶
Hourly Wages in Textile Industry, US\$ Per Hour

	Brazil	China	Egypt	India	Indonesia	Italy	Korea	Turkey
<i>Spinning</i>								
Skilled personnel	10.11	1.94	1.36	0.90	2.13	28.95	6.42	7.78
Machine Tenders	4.78	1.59	1.32	0.69	1.28	23.88	5.76	4.44
Unskilled Personnel	4.24	1.07	0.90	0.56	0.85	22.71	5.05	3.33
<i>Weaving</i>								
Skilled Personnel	8.25	2.06	1.83	1.06	2.43	28.95	6.42	7.18
Machine Tenders	4.71	1.94	1.04	0.86	1.46	26.32	5.76	5.36
Unskilled Personnel	3.95	1.11	0.95	0.68	0.97	22.71	5.05	3.51
<i>Knitting</i>								
Skilled Personnel	11.24	2.75	0.86	0.89	2.43	23.43	6.43	4.55
Machine Tenders	5.35	1.78	0.76	0.75	1.46	22.42	5.76	3.60
Unskilled Personnel	4.94	1.27	0.56	0.73	0.97	21.34	5.05	2.82

5. Hence, although China is losing its cost edge in some segments (Table 3), this is happening more slowly than some expected. In a 2011 survey of chief purchasing officers

¹⁵ Calculations based upon: ITMF, "International Production Cost Comparison: Spinning/Texturing/Weaving/Knitting," report, 2012.

¹⁶ Ibid.

(CPOs) of Western apparel companies, more than half expected to decrease the share they sourced from China in the subsequent five years, and another third expected to “strongly decrease” that share.¹⁷ In fact, China’s market share of EU27 clothing imports has finally started to fall, from 46 percent in 2010 to 42 percent in 2012, with a drop in the absolute value of imports from €30.5 billion to €29.4 billion.¹⁸ These shifts are generally attributed first of all to wages finally rising more rapidly than productivity gains as labor shortages develop, so that cost differentials grow wide enough that scale and speed can no longer compensate for them and, in some cases, to a shift by Chinese firms toward serving domestic demand. On the other hand, the pace of change should not be exaggerated: Bangladesh, the fastest growing exporter of garments, gained 0.3 percent in market share in the US in 2012, putting it on track to overtake China sometime in the year 2568.¹⁹

6. Bangladesh and Vietnam have emerged as the economies benefiting most from this transition. In the same 2011 survey of CPOs, when asked to name the most likely sourcing hotspots in the next five years, CPOs ranked Bangladesh first, followed by Vietnam, Indonesia, and Cambodia.²⁰ In the case of both Bangladesh and Vietnam, textiles and apparel exports more than tripled between 2004 and 2012 (from US\$6.9 and US\$4.9 billion respectively in 2004 to US\$21.6 and US\$18.2 billion in 2012); over the same period, India’s exports merely doubled, from US\$14.3 billion to US\$29.1 billion.²¹

7. However, no economy other than India’s rivals China’s capacity to host the entire supply chain locally. In theory, India should be as competitive, if not more, than any of these economies. Income and wage levels are comparable, as are the costs of capital, with both Bangladesh and Vietnam having benchmark interest rates in the 7–8 percent range and commercial loans at double digits.²² India’s location should give it an advantage in the EU market, if not in the US. Power is more expensive in India than in these other economies, once accounting for pervasive self-generation. However, power accounts for no more than a quarter of costs in textiles,²³ and under one percent in apparel,²⁴ which relies more on manual than on mechanized inputs. Most of all, though, India has the entire value chain present (as depicted in Figure 3): it is the world’s second-largest cotton grower, the second-largest spinning industry, it boasts a large weaving industry, and additionally has a substantial domestic retail market itself.

¹⁷ McKinsey & Company, Inc., “Bangladesh’s Ready-made Garments Landscape: the Challenge of Growth,” report November 2011, p. 5.

¹⁸ For EU27 reported imports of Articles of Apparel and Clothing Accessories (SITC 84). Eurostat, March 25, 2013, <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

¹⁹ David Birnbaum, “The 2013 Name The New China Contest,” blog, August 12, 2013, <http://www.birnbaumgarment.com/2013/08/12/the-2013-name-the-new-china-contest/>

²⁰ McKinsey & Company, Inc., “Bangladesh’s Ready-made Garments Landscape,” p. 6.

²¹ WTO, “International Trade and Market Access Data.”

²² For benchmark interest rates, see: “Trading Economics,” <http://www.tradingeconomics.com>.

²³ ITMF, “International Production Cost Comparison: Spinning/Texturing/Weaving/Knitting,” report 2012, p. 16.

²⁴ Using China as a benchmark. The World Bank Group, “Light Manufacturing in Africa: Focused Policies to Enhance Private Investment and Create Millions of Productive Jobs,” Volume II: The Value Chain and Feasibility Analysis; Domestic Resource Cost Analysis, draft August 8, 2011, pp. 103 and 352.

With the entire supply chain available domestically and competitive cost levels, the Indian textiles and apparel industry should be ideally placed to out-compete rivals for exactly the large, fast orders being displaced from China. This is not to say that India can rely solely on domestic production; especially in the case of fashion garments this will need to be complemented by critical imports, as will be discussed more in the next section. However, where rivals must rely on yarn and fabric to be shipped long distances and clear customs at both origin and destination, and must deal with distant suppliers, Indian garment firms *should*, in *theory*, be able to find a large proportion of supplies locally, ship them overland, and be able to respond faster, with higher quality, and at scale.

B. AN UNCERTAIN FUTURE FOR INDIA

8. As a result, some have forecast a boom for the Indian industry over the next decade.

Some industry forecasts have textiles and apparel export growth at 10 percent compounded annual growth rate (CAGR) for the next decade.²⁵ The Twelfth Plan is yet more optimistic, setting a target for annual export growth during the Plan period of 15 percent.²⁶ In such scenarios, exports grow to exceed US\$100 billion by the early 2020s, with investment growing apace. Yet the wide variation in those forecasts should give reason for pause, as should the volatility of growth in the last few years. The rolling five-year average growth in exports has swung from 7 to 11 percent and back again, with single-year averages even turning negative.

9. Even the current status of investment is uncertain, and in the last decade investment has lagged badly.

Beneath these differing forecasts and volatile growth figures are worrying signs of slipping competitiveness. In the same CPO survey as quoted above, India was not even mentioned as a top-four sourcing location of the future.²⁷ In fiscal year 2012–2013, the dollar value of exports declined by almost 6 percent. In fiscal year 2013–2014 they began to rebound, growing 19 percent in July 2013 compared to the same month of last year,²⁸ but this was at a time of sustained currency depreciation, as well as in the aftermath of safety incidents in Bangladesh that caused sourcing companies to look elsewhere (for a time). The greatest long-term threat to the industry may be under-investment. Bangladesh tripled the number of spindles in its spinning industry between 2005 and 2010, whereas India barely increased by a third (Table 1). This, despite the presence in India of domestic producers of spindles, which European competitors acknowledge as being of high quality. In weaving, China installed almost 300,000 shuttleless looms between 2005 and 2010, while India installed less than 9,000. In short, India is at risk of missing the opportunity offered by shifting global demand, while not investing

²⁵ Resulting in a projected US\$82 billion in textile and apparel exports in 2021. Technopak, “Textile & Apparel Compendium 2012,” report, 2012, p. 35.

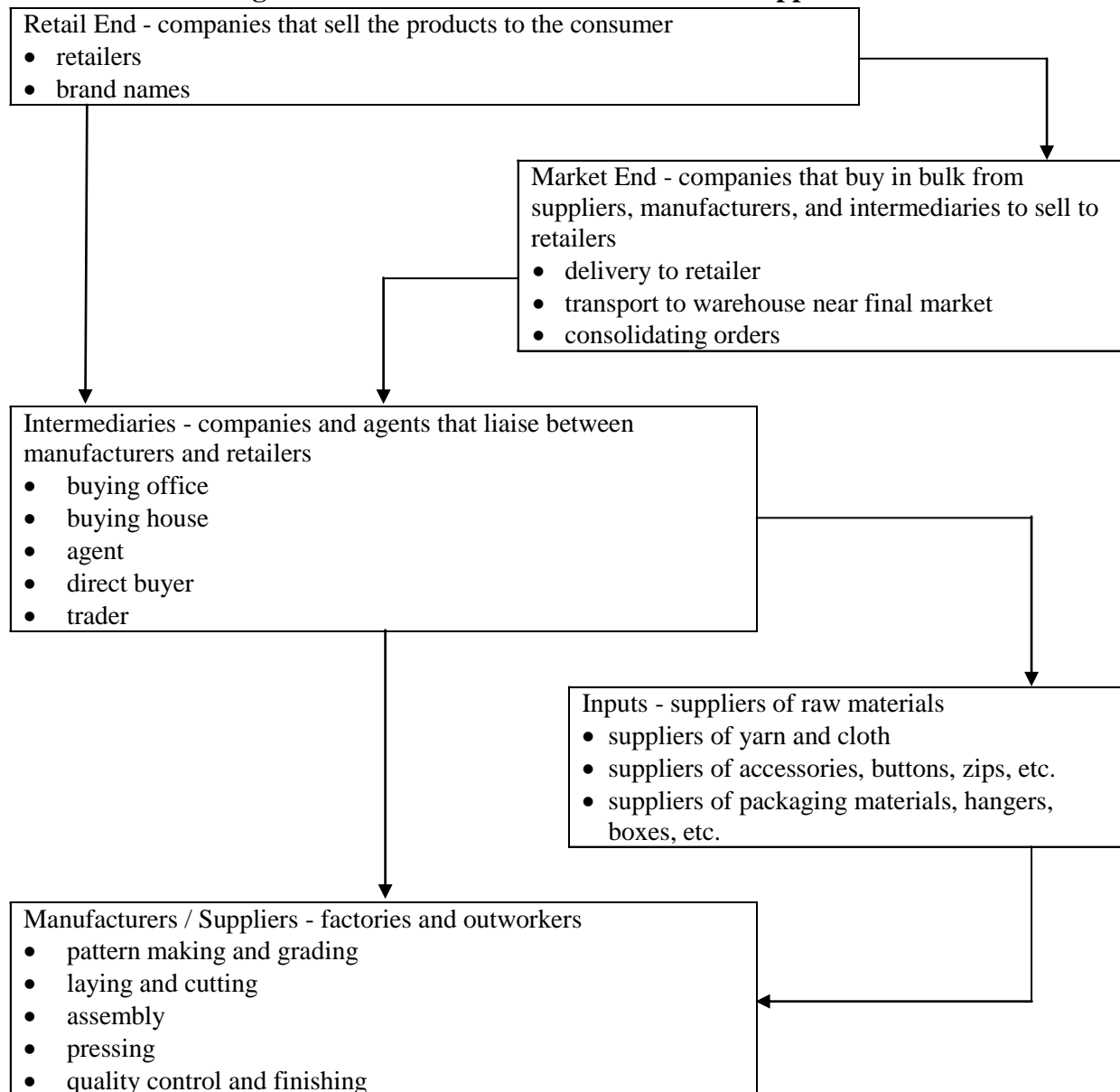
²⁶ Planning Commission of the Government of India, “Twelfth Five-Year Plan (2012–2017): Economic Sectors Volume II,” report, p. 123.

²⁷ Those were Bangladesh, Vietnam, Indonesia, and Cambodia.

²⁸ Apparel Export Promotion Council (AEPIC), “Apparel Export Registers a Growth of 19 Percent July 2013,” Press release, September 4, 2013, http://www.aepcindia.com/admin/press-pdf/release_03.09.pdf.

sufficiently in domestic supply capacity. As will be described below, these twin failures are not only interrelated, but are two sides of an equilibrium that has deeper causes.

Figure 3: Full Value Chain of Textiles and Apparel²⁹



10. **Neither low cost nor a full value chain will be sufficient to meet India’s targets if the apparel industry is not able to deliver quickly on large, diverse orders.** To overcome these trends and achieve the more optimistic scenarios, the whole value chain in India (as laid out in Figure 3) must be able to meet the shifting demands of the global industry, which involves speed

²⁹ Women Working Worldwide, “Action Research on Garment Industry Supply Chain,” <http://www.women-ww.org>, p. 11 (Box 3: Five Stages of Participation in a Garment Industry Supply Chain).

and scale. Without these, superficial cost advantages will mean little, since the production cost of a garment is a small fraction of its sales price, and only one of a range of factors affecting buyers. Inditex, to take one extreme example, was able to generate much higher returns than its rivals while sourcing from high-cost Spain because its speed to market meant it sold out of items rather than having to hold clearance sales.³⁰ As a result, firms and locations that fail to approach global norms for delivery will simply not be considered by buyers; or firms will not bid on these orders, to at least preserve customer relationships. Many firms we spoke to said that either “The buyers just don’t look at us,” or “There are many orders we just don’t bid on.”

11. The key to achieving speed and volume will be the integration of the domestic value chain; today it is fragmented, however, and becoming increasingly so. It is difficult to discern on what basis India’s value chain will compete *if not* for its integration. Any other strategy, such as one based on costs, will ultimately be unsustainable and depend on holding down wages, thereby undercutting the premise of inclusiveness, and being vulnerable in the long term to the next low-cost production area. In other words, India’s most effective strategy in vying with Bangladesh or Vietnam for the leading position in this industry will in fact be to compete with China—that is, with thousands of local garment makers able to deliver on orders by securing all needed inputs in a timely fashion and at the needed scale from domestic producers, complemented by reliable imports, where needed. To compete globally in fashion garments, India would also need to have timely access to special fabrics produced in different parts of the world. India would be well-equipped to supply to domestic and regional fast fashion stores, which seem to be growing rapidly.³¹ Moreover, India could then also explore the possibilities of developing local fast fashion chains.

12. The social gains from an industry able to achieve that status would be enormous; but the regulatory barriers standing in the way are substantial. To analyze these barriers, it is necessary first to describe in turn each step in the supply chain, as a prelude to identifying the root causes for underperformance in each of them and across multiple segments.

C. THE STRUCTURE OF INDIA’S VALUE CHAIN

13. The textiles and apparel value chain as a whole is one of India’s largest employers. By some accounts, the entire chain—from weaving to garments—provides direct employment for about 29 million people.³² Many of these jobs are in relatively low-productivity handlooms and handicrafts and many serve the domestic market. The sheer size of the textile value chain, if

³⁰ Ghemawat and Nueno, “ZARA: Fast Fashion.”

³¹ For instance, Inditex Trent, the joint venture between Inditex and Tata Group’s retail arm Trent, generated Rs 405 crore (approximately US\$64 million) in annual sales with just nine stores, and is expanding. “Spanish Fast-Fashion Brand Zara’s Sales Matches Top Brands in India, 18 More Stores to Come on Soon,” *The Economic Times*, July 3, 2013, http://articles.economictimes.indiatimes.com/2013-07-03/news/40352021_1_zara-inditex-trent-brand-owner.

³² Or 45 million people, if including sericulture, handicraft, and jute. Planning Commission, “Twelfth Five-Year Plan (2012–2017): Volume II,” p. 123.

multiplied by indirect effects, and its bias towards semiskilled labor, with most manufacturers reporting a mere 4–6 weeks sufficient to train shop-floor workers,³³ make its competitiveness a *sine qua non* for inclusive growth. For inclusion to endure and have meaning, however, incomes must rise, which requires rising productivity, and those incomes must be sustainable, which requires global competitiveness across the value chain. Persistent protection for a large and uncompetitive industry is eventually liable to cause collapse, as happened to the textiles and apparel industry in so many countries after the Multi-fibre Arrangement (MFA) expired.³⁴

14. The apparel industry generates the most jobs, but cannot flourish without easy access to the rest of the value chain, as well as critical imports. Apparel accounts for roughly a third of the jobs in the value chain, or around 11 million jobs. While variance in reported estimates means one must treat this—and other jobs figures—with some circumspection, such a proportion tallies with the underlying labor characteristics of the segments in the value chain. The apparel segment is the most labor-intensive. To illustrate, consider the transformation of 30 tons of yarn per day through the production process until it becomes apparel. If modern equipment is used at full production levels, then the spinning, weaving, and processing stages will generate some 1,200 jobs; turning the resulting fabric into t-shirts will employ two to five times as many people, or 2400–6000. For cotton casual pants and men’s woven cotton shirts, numbers are even higher, as they require more standard minutes for production.³⁵ Apparel is, however, unlikely to have reached its maximum employment in India, whether: garments firms are uncompetitive enough that firms abroad can incur higher transport costs to use Indian yarn or fabric and still outbid them; or that Indian yarn or fabric is of low enough quality that it can only be used in low-quality, low-cost products; or that lack of easy access to critical imports hinders the apparel segment in responding effectively to fashion garment demands; or that pervasive levels of low productivity in traditional weaving keep employment levels elevated. In fact, as will be described below, all four factors are at work, to varying degrees. One of the most proximate causes, though, is the weakness in processing.

15. Processing and finishing together constitute the weak link in the chain, which is only growing weaker. Processing refers to the treatment and dyeing of woven or knitted fabric to make it ready to be cut and stitched into a garment. Without a strong processing industry, India’s apparel industry will reap no benefits from the country’s strength in cotton fiber spinning and weaving, since the grey fabric will have to be exported, processed and re-imported before garment makers can use it. However, India’s processing industry is currently gripped by two crises: one related to environmental regulations, the other concerning capabilities. Both will be

³³ Personal communication on initial findings in ADB interviews. Not surprising given the industry’s traditional role in creating employment for the unskilled and semiskilled. Stacey Frederick and Cornelia Staritz, “Developments in the Global Apparel Industry After the MFA Phaseout,” in: Gladys Lopez-Acevedo and Raymond Robertson, eds., *Sewing Success?* (Washington, DC: World Bank, 2012), p. 69.

³⁴ As also documented in: Lopez-Acevedo and Robertson, eds., *Sewing Success?*

³⁵ Based upon interviews in August 2013 with modern firms in each segment and communication with industry experts.

described in more depth below. In brief, widespread evasion of environmental regulations has led to judicial and now regulatory action enforcing “zero liquid discharge” in several States, resulting in hundreds of units being closed down.³⁶ At the same time, garment makers complain that local processing houses are simply unable to deliver large orders in time, are reactive rather than proactive in marketing and sales, and suffer continual quality issues. Of course, processing houses dispute this; on the other hand, the fastest growing garment exporter in the last decade is conspicuous for doing all of its processing in-house.

16. Weaving and knitting are cost-competitive at full capacity, but are dominated by small, informal firms. One of the mysteries of India’s performance in woven textiles is that, according to weaving machinery producers, it is enormously competitive. Using modern looms operating at full capacity, India’s production cost per square meter is US\$0.238-0.246, compared to US\$0.240-0.250 per square meter in China (Table 5). Since grey woven fabric is essentially a commodity, one would have expected Indian firms to take share from and invest more than Chinese firms, even with slim cost differentials. The opposite is the case, however, and by a dramatic margin. China now accounts for more than a third of the global trade in fabric.³⁷ Over the years 2005–2010, it accounted for almost 90 percent of the worldwide net increase in shuttleless looms, with its net *increase* in that period being 16 times India’s total installed *stock* of such looms (Table 2 2). China is particularly dominant in water-jet looms. Weaving with such machines requires very little labor: some of the largest units in India require a mere 20–30 employees, so inflexible labor laws seem an unlikely candidate for the barrier to investment.³⁸ As will be described below, the likely cause is that the cost comparisons mentioned above have two critical assumptions: that the machines used electricity from the public grid, and that they run at full capacity. Why these two assumptions might break down, and the effect on returns and investments, will be discussed below.

17. Spinning and the machinery it uses are by some distance the most competitive segments of the value chain. India is the world’s second-largest exporter of yarn, and has been maintaining that position since 2010.³⁹ This competitiveness has multiple sources. First, yarn is cheaper and easier to store than cotton bales, with a much higher ratio of value to volume, so it gains competitiveness from domestic supply. Second, while most modern weaving machinery in India is imported from Europe and East Asia, there is substantial domestic production of high-quality spinning machinery. As the CEO of a major European group put it, “India is

³⁶ The Madras High Court, in its order dated January 4, 2011, issued that: “i) All the CETPs/IETPs Bleaching & Dyeing units in TIRUPUR area shall be closed down forthwith by the Pollution Control Board and the Electricity supply shall be disconnected. ii) Such CETPs/IETPs/Units shall not be permitted to operate unless and until they achieve zero liquid discharge.” The Rajasthan High Court followed suit a year later.

³⁷ Technopak, “Textile & Apparel Compendium 2012,” p. 7.

³⁸ Restricting attention to the Industrial Disputes Act (1947), with its threshold of 100 employees, as most consequential, following the World Bank’s World Development Report 2013 on Jobs.

³⁹ For textile yarn (SITC group 651). UN Comtrade.

exceptionally strong in spinning machinery.”⁴⁰ Spinning in India is also concentrated in three very large clusters, which seem to reap substantial Marshallian economies: 40 percent of India’s production lies within a 150km radius of Tirupur in Tamil Nadu, with another 23 percent split between Punjab and Maharashtra (concentrated in Ludhiana, and the greater Mumbai area).⁴¹ The segment is the most organized in the value chain, with about 60 percent of firms being formal, versus almost no formal firms in weaving.⁴² Its firms are reaching scale, with industry sources citing the average size of a new unit at 20,000 spindles, or around 140–150 employees. Overall, India retains the world’s second-largest base of installed spinning machinery, with as much as a fifth of ring spindles.⁴³

Table 5: Cost Comparison of Weaving⁴⁴
US\$, 2012, Weaving Ring Yarn

	Brazil	China	Egypt	India	Indonesia	Italy	Korea	Turkey
Waste	0.007	0.007	0.007	0.006	0.007	0.008	0.006	0.007
Labor	0.058	0.025	0.015	0.011	0.019	0.221	0.062	0.057
Power	0.097	0.086	0.028	0.072	0.062	0.144	0.047	0.079
Auxiliary Material	0.039	0.040	0.055	0.054	0.054	0.077	0.049	0.064
Depreciation	0.076	0.068	0.051	0.062	0.054	0.119	0.061	0.063
Interest	0.044	0.024	0.038	0.041	0.030	0.046	0.017	0.034
Total Manufacturing Costs	0.321	0.250	0.194	0.246	0.226	0.615	0.242	0.304

US\$, 2012, Weaving Rotor Yarn

	Brazil	China	Egypt	India	Indonesia	Italy	Korea	Turkey
Waste	0.006	0.007	0.007	0.005	0.007	0.007	0.006	0.007
Labor	0.066	0.027	0.016	0.011	0.021	0.214	0.070	0.066
Power	0.085	0.076	0.025	0.063	0.055	0.128	0.042	0.070
Auxiliary Material	0.044	0.047	0.065	0.065	0.065	0.093	0.057	0.077
Depreciation	0.069	0.062	0.046	0.057	0.044	0.116	0.055	0.057
Interest	0.040	0.021	0.035	0.037	0.024	0.046	0.016	0.031
Total Manufacturing Costs	0.310	0.240	0.194	0.238	0.216	0.604	0.246	0.308

⁴⁰ Bernard Cruycke, CEO of ITEMA Weaving, cited in: *TextileFuture*, “The Future Prospects of the European Textile Machinery Manufacturers,” Issue September 2011, p. 9. <http://www.textile-future.com/>

⁴¹ Using 2008-09 data. Office of the Textile Commissioner, Mumbai, “State-wise Cotton Consumption by the Textile Mills,” <http://www.cotcorp.gov.in/statistics.aspx?pageid=3>

⁴² Based upon 2012–2013 provisional data, organized spinning mills (1,762 units) and composite mills (199) together amount to 1,961 units, while small-scale (SSI) spinning mills amount to 1,340 units. Ministry of Textiles, <http://texmin.nic.in/ermiu/texind.pdf>

⁴³ ITMF, cited in Technopak, “Textile & Apparel Compendium 2012,” p. 14.

⁴⁴ Calculations based upon: ITMF, “International Production Cost Comparison: Spinning/Texturing/Weaving/Knitting,” report, 2012.

18. **On the other hand, the installed capacity base of the industry is ageing.** Industry sources report that a large number of spindles are older than 20 years, which is supported by the fact that a fully modern industry would require only 56 percent of currently installed spindles to produce current levels of output.⁴⁵ India's investment is dwarfed by China, with China installing five times more ring spindles and six times more rotor spindles than India from 2005 to 2010 (Table 1). Moreover, the long-term employment prospects of spinning are not bright, if the industry is to remain competitive. Capital-labor substitution is pervasive in spinning, and is likely to occur rapidly as wages rise: industry consultants report that factories that employ 200 workers in India or China are operated with as few as 30 in Turkey. So while this segment remains relatively strong, threats to its competitiveness are emerging and, although those must be countered, the industry *on its own* is unlikely to be a source of inclusive growth.

19. **Low levels of investment mean that the textile machinery industry in India is dwarfed by that of China.** This discussion of spinning machinery naturally leads to machinery production for the value chain more generally. The growth of a domestic base for machinery production is a core focus of the textile strategy in the Twelfth Plan, given its importance for the textile value chain. However, it is also the most skill-intensive, and as such the global industry is dominated by firms producing in developed markets, particularly Switzerland, Italy, Germany, Korea, and Japan.⁴⁶ The only other significant base of production is China, where these firms have set up production due to the enormous demand for machinery there: in this context, losses in skills are outweighed by scale economies and the competitive need to be close to the customer. As a Swiss producer puts it, “firms that have not relocated their production to China have lost vertically in turnover in the last five years.”⁴⁷ Cost factors have little influence on such firms' location choices, so supply-side measures to attract them are liable to have little impact. As noted above, moreover, India's investment in machinery is current only a fraction of that of China, due to the competitiveness of the firms using the machinery.

20. **If, however, constraints to the textile industry's competitiveness would be addressed, unleashing widespread upgrading, then there would be demand for hundreds of thousands of new machines.** For example, were India's weaving industry to catch up with merely average levels of its competitors, and even more so if it were to reach China's current let alone future level, it could create a revenue opportunity of about US\$15–20 billion over the next decade in auto-loom alone, as 400,000–500,000 units were installed.⁴⁸ So the key to developing the textile industry must be first to tackle the underlying constraints to the competitiveness of

⁴⁵ Such capacity calculations are described in further detail in Section “Underutilization: causes and consequences” below.

⁴⁶ See, for example, the program for the ITMA conference.

⁴⁷ Antonio Staffoni, CEO of Swiss Santex Group, cited in: *TextileFuture*, “The Future Prospects of the European Textile Machinery Manufacturers,” p. 9.

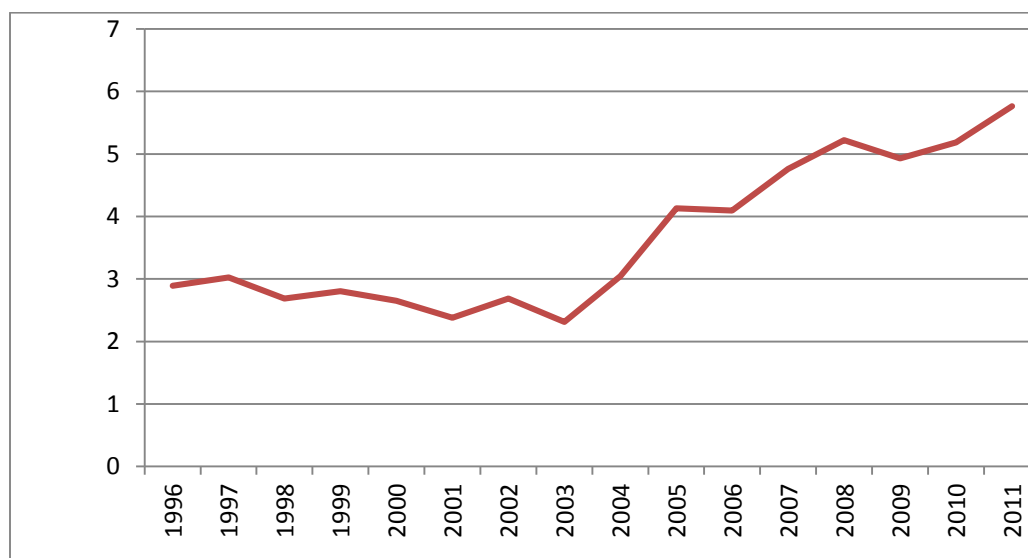
⁴⁸ Calculations based on India increasing its installed auto-loom and an estimated price of US\$30,000–US\$40,000 per auto-loom for Chinese shuttleless looms produced under joint venture. Imported shuttleless looms come with a higher price range of US\$75,000–US\$90,000 per auto-loom.

weaving and, to the extent they are interrelated, the competitiveness of other parts of the value chain.

21. **Last, India is self-sufficient in cotton, but synthetic fiber is dominated by a protected local oligopoly.** India is the world's second-largest producer of cotton. Over the last decade, cotton production has doubled with the introduction and rapid diffusion of new seed varieties (Figure 4). Traders report that cotton production in India is among the lowest-cost in the world.⁴⁹ The industry is diverse, from small-holder farmers to large concerns, and relatively well-organized, as demonstrated by the speed of diffusion of these varieties. While the Government of India sets a reserve price for cotton, so does China's, at levels consistently 5 to 10 percent higher than India's.⁵⁰ In 2012, cotton shortages elsewhere coincided with a substantial crop in India, resulting in escalating domestic prices as supplies were diverted to exports until the imposition of an export ban. In most years, however, the domestic yarn industry is fully supplied, alongside substantial exports. As is usual in a commodity market, spinning firms and intermediaries are most often "price makers," at least above the reserve price, except when occasional shortages cause price spikes. It is difficult to find much difference between the cotton market in China—the world's largest producer, which is similarly regulated and where market disruptions often cause much higher price spikes—and India.

Figure 4: Cotton Production in India, 1996–2011⁵¹

Million tons



⁴⁹ Leslie Josephs and Debiprasad Nayak, "India Bans Cotton Exports," *The Wall Street Journal*, March 6, 2012. <http://online.wsj.com/article/SB10001424052970203458604577262723464381722.html>

⁵⁰ Recently, China auctioned some of its huge cotton reserves and is still sitting on large and growing stocks, tempering prices. Lucy Hornby, "China strings out cotton auction," *ft.com*, November 29, 2013.

⁵¹ October to September. Ministry of Textiles Office of the Textile Commissioner (MTOTC), "Official Indian Textile Statistics," Section IV, Table 64, <http://www.txcindia.gov.in/html/comp%20table%20pdf%202011-12/officialindiantextile2011-12sub.htm>.

22. **The situation is very different in synthetics, the largest category of manmade fibers (MMF).**⁵² Production of MMF in China is highly competitive: no less than 150 producers are active in polyester staple fiber (PSF) only, mostly owned by private interests with the support of local governments.⁵³ In India, only a few firms (Reliance Industries, Indorama and Grasim Industries, a company of the Aditya Birla Group) have substantial production. After consolidation in the 1990s and 2000s, they account for more than 80 percent of the production of the most popular MMF.⁵⁴ Although official tariffs on MMF are low, often lower than in China, high anti-dumping tariffs—above 17 percent, and in absolute terms above US\$500 per ton⁵⁵—have been imposed against China, Korea, Indonesia, and other major producers. This protected oligopoly is then able to act as price-maker, and dictate the terms of supply.⁵⁶ The relative costs of this are only likely to rise in coming years, as Asia faces a general glut of MMF supply, which will lower costs outside but not inside India, and it is exacerbated by differential tax treatment, as MMF is subject to 10 percent excise tax, whereas cotton is not.⁵⁷ In fiscal year 2011–2012 the Ministry of Textiles proposed a “fiber neutral” policy that would eliminate this differential, but it has not been enacted in the face of opposition from cotton growers. It should be noted that in China, which has long encouraged MMF use, consumption of synthetics is 10 times that in India, but cotton consumption is almost three times higher as well, and cotton prices are sustainably higher than those in India. The consequences of this, as well as of other regulatory factors that similarly damage the competitiveness of synthetic-based products, will be explored in further detail below.

23. **Finally, the market of raw materials that serve as critical inputs for producing manmade fibers is characterized by even stronger concentration.** Only two large firms in India produce purified terephthalic acid (PTA), a critical raw material for the manufacture of polyester fiber, with the largest producer owning 79 percent of the total Indian production

⁵² Other MMF are those made from natural polymers and those made from inorganic materials.

⁵³ US International Trade Commission, “Certain Polyester Staple Fiber From China,” Investigation No. 731-TA-1104 (Final), June 2007, p. VII-2.

⁵⁴ Grasim Industries controlled 100 percent of viscose staple fiber production; Reliance and Indorama together accounted for 82.1 percent of polyester staple fiber. Ministry of Textiles, “Man Made Fibre: Section II,” Report prepared by sub-group on manmade fiber, 2010, p. 146.

⁵⁵ GoI, “Notification No. 23 /2012-Customs (ADD),” May 4, 2012, <http://www.cbec.gov.in/customs/cs-act/notifications/notfns-2012/cs-add2012/csadd-23-2012.htm>; GoI, “Notification No.22/2012-Customs (ADD),” May 2, 2012, <http://www.cbec.gov.in/customs/cs-act/notifications/notfns-2012/cs-add2012/csadd-22-2012.htm>. Interestingly, Pakistan recently rejected a request for anti-dumping duties on synthetic fibers. The Nation, “No Anti-Dumping Duty on PSF Import from China,” November 24, 2013, <http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/business/05-Aug-2013/no-anti-dumping-duty-on-psf-import-from-china>.

⁵⁶ This means that actual prices paid, and particularly delivery terms and conditions, diverge substantially from reported spot prices, such as for polyester staple-fiber, which are roughly at parity in China and India.

⁵⁷ Ministry of Textiles, “Man Made Fibre: Section II”; CRISIL, “Sector Focus: Textiles.”

capacity.⁵⁸ With substantial import duties, imports of these raw materials are only a fraction of domestic production.

D. TEXTILES SEEN FROM APPAREL BACKWARDS

24. **These different segments of the value chain often have conflicting interests.** For example, weavers and spinners have lobbied for removing excise taxes and anti-dumping duties from manmade fibers, both of which cotton growers and MMF producers resist. Apparel makers seek to have easier imports of processed fabric, but weavers, processors, and integrated mills disagree. While a domestic textile industry creates a favorable environment for the initial development of the apparel industry (by avoiding costs related to imports), its further growth is often hindered by the textile industry's lobby for import barriers, forcing the apparel industry to source locally.⁵⁹ Given the size of the value chain, each segment wields substantial influence, each commissioning reports to support their respective point of view. This is a potential explanation for the policy reliance on subsidies and schemes, which are least likely to arouse opposition from another part of the value chain (other than requests for expansion of the scheme). While this may not imply an automatic judgment about such schemes, it does mean that they are unlikely to reshape the business environment. Not all issues are amenable to win-win solutions, at least in the short term, so eventually the interests of one segment must be taken as a priority, even when striking compromises. Many of the issues identified above and below are of this type, so that short-term adjustment costs to other segments should be considered justified if they improve the competitiveness of a reference segment.

25. **This report will prioritize the competitiveness of the apparel segment above the others; it is this segment that will make or break inclusive growth.** As noted above, the apparel sector accounts for an overwhelming proportion of the job creation in the textiles and apparel value chain. If the apparel industry does not succeed, ten million jobs are at stake.⁶⁰ If it does, not only will it be able to sustain those jobs, but it may also witness rising wages, as has happened in the last decade in China. Conversely, if this does not occur—if the apparel industry wastes away or only survives through formal and informal protection—then it is hard to see how India will meet the targets in its National Manufacturing Plan.⁶¹

26. **As a result, the apparel industry's prospects will structure the remaining sections.** Section 2 will identify the specific choke points that result in a textile supply chain that is

⁵⁸ The largest firm has a production capacity of 2,050,000 tonnes per annum. A third firm, currently not in operation, accounts for 4.6 percent of total production capacity. Association of Synthetic Fibre Industry (ASFI), 2012, "2011–2012 Handbook of Statistics on Man-Made / Synthetic Fibre/Yarn Industry," Part 1, p. A–7.

⁵⁹ David Birnbaum, "Benchmark Study India," study prepared for AEPC, 2013, p. 101.

⁶⁰ According to a recent benchmarking study, "it is not unreasonable to suggest that unless India is able to reverse its current market share decline, the industry may lose 50 percent of its 2011 market share in the next three to five years." Birnbaum, "Benchmark Study India," p. V.

⁶¹ Still, some segments of the industry and/or some firms are likely to survive. Which product segments are most likely to do so under the current scenario is studied elsewhere. Birnbaum, "Benchmark Study India," pp. 131–304.

currently unable to deliver the supply the apparel industry would need to be competitive; Section 3 will consider the potential policy responses to these choke points; and Section 4 will conclude with some potential pathways to implementing them, and the impact they may generate.

SECTION 2: CAUSES

27. **Low utilization, market fragmentation, and slow diffusion of management capabilities are the proximate causes of the value chain's constrained competitiveness.** The value chain from apparel backwards is locked into small market niches, principally cotton-based commodity fabric and clothing. This implies that firms miss out on the peak sales season in developed markets, driving down utilization. At the same time, the supply chain is fragmented, so apparel firms complain they cannot source supplies and weaving and processing firms complain of stop-start production. Interacting with these two factors are relatively slow rates of diffusion of management capabilities among firms. While leading firms are able to overcome most constraints, most other firms learn slowly, if at all.

28. **The root causes of these are regulations that affect domestic and international trade, shelter firms from competition, and push up realized costs in practice.** First, the pockets of excellence around the country are poorly connected to each other, both in terms of cost and time—taking as much of each to ship yarn to Tamil Nadu from Gujarat as from Guangdong—and in terms of knowledge, as market middlemen struggle to establish a foothold. Moreover, in the center of the value chain, processing faces a crisis of its social “license to operate,” centered on its environmental record, which will disconnect the industry further if unaddressed. Next to this, weak monitoring and tying schemes to quantitative thresholds incentivizes firms to stay small, creating a dual market in which small, informal firms offer lower prices—until closed down. Alongside low domestic integration is low international integration, in particular for synthetic fiber and fabric, due to restrictive trade practices and an absence of a concerted drive to attract high-capability foreign direct investment (FDI). Finally, some of the “usual suspects” in the business environment, such as land price dynamics and power shortages, push up costs in realized operations.

29. The remainder of this section describes each of these constraints in turn. The next section will then consider the process and policy changes that might be undertaken to begin transforming this fragmentation into connection—locally, domestically and internationally.

A. UNDERUTILIZATION: CAUSES AND CONSEQUENCES

30. **Low annual capacity utilization and ageing technology is pervasive across the value chain.** Despite improvements as part of the economic reforms in the 1990s, capacity utilization remains suboptimal across the Indian textiles and apparel value chain. According to official figures, capacity utilization of the installed spindles and rotors, including small-scale units, is

estimated at 80 percent; of installed looms in the organized mills sector at 83 percent, and in the readymade garments segment at 70 percent.⁶² However, the methodology for these figures is at times unclear, and if taken as point estimates at a given period in the year may even be overstating utilization. Moreover, it is insightful to consider the amount of modern machinery that would be required to reach today's production levels in India. If replaced by modern machinery and assuming an operating utilization of 90 percent, it is estimated that only 56 percent of the current 49.2 million installed spindles are required to achieve current fiber output. More so, only a fraction—18 percent—of the 2.35 million looms in use would be needed to produce similar fabric outputs (Table 6). As such, it seems clear that either utilization is much lower than reported, or productivity and the use of modern technology is low, or—most likely—a combination of both holds true.

Table 6: Calculation of Modern Loom Required to Match Current Fabric Production⁶³

	Airjet	Rapier	Shuttle Loom	Total
Number of Working Days/Annum	360	360	360	
Picks/Meter	2,880	2,880	2,880	
Loom RPM	900	600	200	
Operating Efficiency (%)	90%	90%	85%	
Fabric Width (meter)	1.5	1.5	1.5	
Production (sq. meter)	607.5	405	127.5	
Production (million sq. meter/annum)	0.22	0.15	0.05	
Number of <i>Modern Looms</i> Required (each matching 100% current fabric production)	185,706 (for 100%)	278,560 (for 100%)	884,837 (for 100%)	
Hypothetical Investment in <i>Modern Looms</i> (%)	50%	20%	30%	100%
Number of <i>Modern Looms</i> Required	92,853	55,712	265,451	414,016
<i>Actual Looms</i> being Utilised				2,350,000

31. **This substantially damages India's cost competitiveness.** For an illustrative calculation of the effect of low utilization, assume that an average newly installed loom is only utilized at two-thirds' the level of China, because it is idle for a third of the year or is constantly turning over small orders (both of which occur for reasons described below). Depreciation and interest charges per hour will escalate (scenario 1). If the idle period is predictable and continuous, labor costs might be avoided during the idle hours. However, as most labor in the segment consists of machine tenders, this will not be the case if the idle hours are interspersed throughout production (scenario 2). A final reality adjustment to India's cost competitiveness comes through electricity charges: the comparisons above (Table 5) assume full grid connectivity. More realistically, with capacity shortages on average of around 10 percent of demand, escalating to above 30 percent in

⁶² Fiscal year 2011–2012 provisional figures. MTOTC, "Official Indian Textile Statistics," Section I, Table 41.

⁶³ Third author's calculations, based on: www.txcindia.gov.in.

Tamil Nadu at present,⁶⁴ and self-generation costing approximately twice grid supply, it seems prudent to apply a fifteen percent increase in power costs (scenario 3). The resulting cost profiles for these scenarios are provided in Table 7 and demonstrate how the competitiveness of a segment like weaving evaporates.

Table 7: Reality-Adjusted Cost Profiles⁶⁵
US\$ Per Square Meter, Weaving Rotor Yarn

	Base	Scenario 1	Scenario 2	Scenario 3
Waste	0.006	0.006	0.006	0.006
Labor	0.011	0.011	0.017	0.017
Power	0.072	0.072	0.072	0.083
Auxiliary Mat	0.054	0.054	0.054	0.054
Depreciation	0.062	0.094	0.094	0.094
Interest	0.041	0.062	0.062	0.062
Total	0.246	0.299	0.305	0.316
Premium to China	-2%	20%	22%	28%

32. **A principal cause is that India is missing out on the synthetic export market in apparel, which cascades through the supply chain.** A historical bias towards cotton and against manmade fibers still affects India's downstream textiles and apparel industry today. India's export composition is skewed towards cotton garments. In fiscal year 2012, apparel constituted the largest share (40 percent) of India's textiles and apparel exports; it predominantly includes cotton garments (68 percent).⁶⁶ While the production of manmade fibers and yarn and the exports of manmade fiber fabric and readymade garments are growing rapidly, the full potential of the synthetic market is not being realized, particularly not in terms of apparel exports. While the share of cotton fiber in India's total textile fiber consumption has declined to 66 percent in 2012,⁶⁷ the worldwide cotton to manmade fiber ratio for the production of apparel is roughly the opposite. Cotton constituted only 32 percent and synthetic fibers 67 percent out of total world consumption of major textile fibers in 2013.⁶⁸ Worldwide, natural fibers are a

⁶⁴ Central Electricity Authority (CEA), "Load Generation Balance Report 2013-2014," Report, May 2013, http://www.cea.nic.in/reports/yearly/lgbr_report.pdf; *The Economic Times*, "South India to be worst affected by power shortages: CEA," July 21, 2013, http://articles.economictimes.indiatimes.com/2013-07-21/news/40709174_1_power-surplus-central-electricity-authority-fuel-scarcity.

⁶⁵ Base figures as per Table 5.

⁶⁶ Ministry of Textiles, "Export of Textile Items," <http://www.txcindia.gov.in/html/exp%20to%201112%2014012013.pdf>; India Brand Equity Foundation (IBEF), "Textiles and Apparel," March 2013, p. 15.

⁶⁷ Taking cotton and synthetic fiber as a proxy for total fiber. National Council of Applied Economic Research (NCAER), "Assessing the Prospects for India's Textile and Clothing Sector," July 2009, p. 11.

⁶⁸ ASFI, 2012, Part 2, p. I-7 (sources: ICAC Commonwealth Secretariat, International Wool Secretariat and Fibre Economics Bureau). FAO and International Cotton Advisory Committee, "World Apparel Fiber Consumption Survey," July 2013, p. 2. https://www.icac.org/cotton_info/publications/statistics/world-apparel-survey/FAO-ICAC-Survey-2013-Update-and-2011-Text.pdf

declining market, while synthetic fibers are growing and are expected to continue to do so due to a mix of push (agricultural land scarcity) and pull (price advantages, enhanced properties, and economies of scale) factors.⁶⁹ About 40 percent of the total US apparel market, or almost US\$30 billion in import value, is for manmade fiber garments. China is responsible for US\$13 billion in US MMF apparel imports, while India only takes a small share of US\$0.6 billion.⁷⁰

33. This results in a concentration of India's apparel production for the overseas spring/summer season. Predominantly exporting spring/summer cotton garments, India is losing out on the larger autumn/winter season market. This is reflected in significantly lower export values in the period of August to November, when Indian exports are low, with an average monthly apparel export value of about US\$890 million (compared to the remainder of the year, when average monthly export value reaches US\$1,240 million).⁷¹ In contrast, for other major garments exporters, the most attractive season in terms of global demand is precisely the garments winter season.⁷² Apparel imports by the US, the world's largest importer, are the highest during the period of June to October for the autumn/winter season (in stores from July till December) and the peak winter/holiday season (arriving in stores from late October). China's garments exports effectively respond to this attractive autumn/winter season and peak winter holiday demand, but the Indian export market is not taking advantage of this (Figure 5). As a consequence, while the world's major apparel exporters respond to two seasons and operate at peak production for nine months a year, India's factories only operate 6.5 months a year.⁷³

34. The missing winter season makes labor mobilization particularly difficult. Operating only six and a half months per year, the Indian apparel exporters cannot build effective employer-employee relations. Indian monthly attrition rates are particularly high compared to other garment exporting countries. Being a seasonal industry, keeping attrition low will always be challenging. However, in India, garment factories reported 10.4-12.4 percent of monthly worker attrition.⁷⁴ With so many people leaving each month, incentives for providing the most basic job training for basic skill acquisition, which occurs over a three-month period, are limited.

35. The "cotton trap" is related first of all to the protection and market structure of synthetic fiber and fabric. In recent years, custom duties on manmade fibers and taxation on goods made from manmade fibers generally have been reduced, but remain higher compared to those on cotton and cotton goods.⁷⁵ For instance, excise duties on the production of manmade

⁶⁹ Andreas Engelhardt, "The Fiber Year 2013," *International Fiber Journal*, June 2013, p. 28.

⁷⁰ For 2012. Otexa, "Major Shippers Report," November 8, 2013, China: <http://otexa.ita.doc.gov/msrcty/v5700.htm> and India: <http://otexa.ita.doc.gov/msrcty/v5330.htm>.

⁷¹ Using 2011/12 data, based upon AEPC internal report.

⁷² With EU and US being the largest importers of garments, this is the Northern Hemisphere winter.

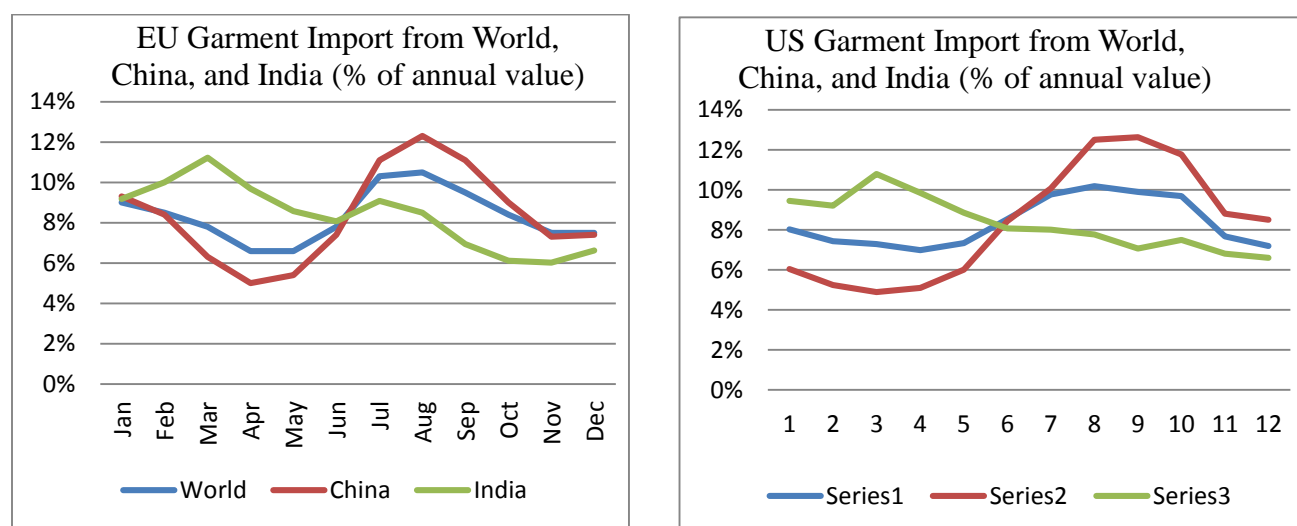
⁷³ Birnbaum, "Benchmark Study India," p. VI.

⁷⁴ Birnbaum, "Benchmark Study India," p. 84.

⁷⁵ NCAER, "Assessing the Prospects for India's Textile and Clothing Sector," p. 5.

fibers are 12 percent, while natural fibers (cotton, wool, and flax) are exempt.⁷⁶ Also, manmade fiber production is protected by a customs duty of 10 percent for most imports,⁷⁷ but anti-dumping restrictions increase those duties to the mid-teens for imports from Korea, China, and other principal producers. Total duty and tax rates for some fabrics add up to about 30 percent.⁷⁸ Both weavers and garment producers have lobbied for the removal of the excise duty and the anti-dumping provisions on synthetic fibers, but this has been resisted by cotton farmers and domestic synthetic producers. In the absence of a sustained process of engaging these stakeholders to find a positive-sum path to reform, such efforts seem to have largely stalled for the time being.

Figure 5: Seasonality in China and India⁷⁹



36. **Most garments producers identified not tariffs but operational customs difficulties as their principal constraint in importing high-quality synthetics.** The categorization of different inputs and goods has led to space for interpretation and negotiation, creating risks for the firms trying to import critical inputs for the production of garments with time-sensitive and tight production schedules. For example, one firm described how, in importing synthetic fabric, it might obtain pre-clearance for a shipment listed as a certain weight, but since fabric production is inherently unpredictable, the actual consignment could contain a few items at a slightly different weight.⁸⁰ Rather than accept this as falling within a tolerance band, customs officers would hold up the consignment on the grounds of applying a different tariff rate, or on suspicion

⁷⁶ Central Board of Excise and Customs (CBEC), “Central Excise Tariff 2012–2013,” http://www.cbec.gov.in/excise/cxt2012-13/cxt_1213-idx.htm.

⁷⁷ CBEC, “Custom Tariffs 2012–2013,” <http://www.cbec.gov.in/customs/cst2012-13/cst1213-idx.htm>.

⁷⁸ E.g., polyester staple plain weave and polyester filament. Birnbaum, “Benchmark Study India,” p. 101.

⁷⁹ Based upon average monthly import values in the period 2006–2012, calculations by Birnbaum, “Benchmark Study India,” p. 98.

⁸⁰ Garment exporters specifically complain that the advance licensing scheme is difficult to comply with, does not meet the flexible needs of the fashion industry and is not cost-effective for the small quantities of specific fabric imports needed. AEPC, “Pre-budget Memorandum 2013–2014,” January 15, 2013.

of tariff violation. In the interim, the firm would be unable to complete production, even if these fabrics made up only a small share of inputs.

37. **Domestic production of high-quality synthetic fabrics is constrained by market failures more than by technical factors.** As noted above, India is already producing large amounts of manmade fiber, so the main challenge is moving towards higher-quality synthetic fabrics that are readily accessible to the garment firms that require them. While foreign sources and inputs are one means to enable this, the other is domestic production of fabric combining synthetic and natural fibers. In processing manmade fiber, industry sources report that firms can largely rely upon similar machinery to that of cotton, albeit with some productivity differences (water jet looms being considered better suited to MMF) and requiring a one-off investment in the machinery of approximately 15 percent of the machinery cost. This implies that India's ability to enhance its production of manmade fiber is not hindered by substantial technical barriers. Instead, on the supply side, raw MMF supply is subject to the oligopoly and custom difficulties described above; equally importantly, and of more general consequence, on the demand side a crucial market institution is largely absent.

38. **A second cause of low utilization is an absence of formal aggregating agents and other forms of order distribution and market connection.** Indian garment exporters indicated that domestic supply of manmade fabric lacks the volume, quality, and consistency needed to meet their demands. While theoretically the capacity to produce substantial supply is there, the fragmentation of the industry as well as limited coordination between suppliers leave garment exporters without sufficient guarantees that their fabric orders will meet quality standards and timelines. One might expect aggregating agents to enter this space, to assist in delivering the right fabric at the right time. Indeed, in the 1990s, in response to the ever-increasing number of textiles and apparel-exporting countries in the context of the Multi-fiber Arrangement "a rapid process of third-party organising and supply sourcing functions spread throughout the developing world to provide access to established markets."⁸¹ Sourcing agents in importing countries increasingly worked through sourcing agents in supplier countries or large-scale manufacturing houses. These latter then sorted orders as they aggregate them, clubbing together volumes of like products to maximize the scale economies of individual production runs. Such agents, based in particular in Hong Kong, played and continue to play a vital role in structuring the value chain in China, aggregating and distributing orders and spreading manufacturing practices.

39. **However, these sourcing agents have struggled to emerge in India, trapped in a low-level equilibrium by difficulties in enforcing contracts or disciplining through reputation.** Within some clusters and segments, local agents do exist who play this role, such as "master

⁸¹ Raphael Kaplinsky and M. Morris, "The Asian drivers and SSA: MFA quota removal and the portents for African industrialization," in: Dorothy McCormick, Joseph A. Kuzilwa, and Tegegne Gebre-Egziabher, eds., *Industrialising Africa in the Era of Globalisation: Challenges to Clothing and Footwear* (Nairobi: University of Nairobi Press, 2009).

weavers” in Tamil Nadu. However, there is little evidence of them working across clusters or nationally. Global agents, such as Li & Fung, have established a presence in India, but industry sources report they have not expanded rapidly, especially in terms of domestic aggregation. While evidence is patchy, it seems likely that this market failure is created by low contract enforceability. Aggregating agents are only likely to survive if they can enforce quality and service levels of a large range of suppliers at once, creating the trust and relationship management that are critical to the sourcing process. Once established, such agents should be able to use their control of access to markets to generate compliance without recourse to contracts; however, to become established, they must themselves become trusted by buyers, so they must be able to enforce agreed service levels. This is difficult without contract enforcement. Hence garment firms, when asked about such agents, responded that they hesitated to use them, since “inevitably” the ultimate suppliers would deliver late to the agents, the agents would be helpless, and the garment firm would have to negotiate directly with the supplier.

40. **So the emergence of such agents is constrained by a low-level equilibrium:** without a broad base of buyers whose access agents control, such agents cannot discipline suppliers in the absence of contract enforcement; without being able to discipline suppliers, they cannot establish control over buyer channels. This is only exacerbated by the unpredictability of logistics in India, a result of state border crossings and road checks, which simply add a factor over which agents have little control but which erodes their value proposition: timely delivery at consistent quality. As a last note, the absence of intermediaries is likely to be particularly harmful for the sourcing of high-end, specialized fabrics, rather than for standardized commodities, since these come with higher monitoring and enforcement costs, which individual firms will find difficult to absorb in the absence of economies of scale. Without these agents to bring together a large number of orders for the same fabric, weavers and processors must start and stop production frequently as they produce one variety for one firm (even if a large one). Since some textile machinery, in particular modern looms, takes a long time to change over product type, this substantially reduces overall operating time.

41. **Low utilization from apparel backwards thus stems from the market structure of synthetic fiber and fabric and related problems of coordination.** While garment exporters are complaining about the limited local availability of specialized manmade fiber fabrics and import hassles, the fiber-producing units could say there is no latent demand. With many hurdles in the imports of MMF products still pending a solution, enhanced competition and availability by foreign suppliers is unlikely. As a result, textiles firms—especially small-scale weavers—operate at full capacity only a few times a year; have to stop production much more often than similar-sized firms elsewhere; are far less competitive on an annual than on an hourly basis; and struggle to generate predictable and sufficient revenues to pay back quickly, unless with exceptional management and embedded in well-functioning clusters. This is likely the reason why mechanized weaving has remained so stubbornly concentrated in only a handful of clusters in India, despite those clusters being in states with high costs and high land prices. By contrast,

textiles “moved West” in China much earlier, abandoning its traditional centers, such as Shanghai, by the early 1990s as intermediaries facilitated relocation.⁸² The lack of connective tissue in India’s textile value chain thus has wider ramifications than simply utilization, and leads into the more general topic of fragmentation, international and domestic.

B. TRADE BARRIERS AND FRAGMENTATION

42. **Unpredictability in customs increasingly hinders Indian firms’ integration in global supply chains. This is being addressed, but implementation is lagging.** Garment exporters, especially those exporting fashion garments, reportedly face constraints exporting their fashion garments as officers do not acknowledge the value of the product to be exported. Room for interpretation creates room for negotiation and thus creates delays. Another issue at customs was that not all ports operate 24/7; a delay in transit to the port could move the arrival time to a Saturday, resulting at some ports in further delays until the end of the weekend. This issue recently seems to have been addressed.⁸³ Uncertainty about possible delays combined with tight delivery deadlines imply that exporters risk not meeting their buyers’ deadlines. With today’s short lead times, such risks are substantial. Exporters report that, in some cases, they have even accepted higher transport costs by seeking faster alternatives such as air shipment, particularly for samples. While it is difficult to quantify the impact of such delays, since it results principally in firms not being considered for subsequent bids, several firms reported being downgraded several tiers in the sourcing lists of purchasers after their shipments missed deadlines. Such effects are liable to leave India continually trapped into exporting basic commodity clothing, and hence to restrict its growth, even if electricity suddenly became plentiful and labor laws relaxed.

43. **As well as the absence of national intermediaries, long and uncertain delivery times for domestic shipping fragment the domestic market.** One of the main challenges for Indian garment exporters in meeting large orders is compressing key components of the lead time to supply those orders quickly.⁸⁴ The first key constraint in doing so is the fragmentation of the national market, created by the time and cost to move supplies around India. For example, firms report that it costs Rs 5 per kg to transport cotton from Gujarat to Tamil Nadu, but only Rs 2 per kg to send it from Gujarat to China. Domestic regulations mean that domestic freight cannot travel by sea, so the same ships that take cotton from Gujarat to China cannot also take it to Tamil Nadu. Road freight is subject to a range of regulatory barriers, in particular check posts at state borders and permit checks. The result is that firms report it takes the same amount of time

⁸² Shahid Yusuf and Kaoru Nabeshima, *Two Dragon Heads: Contrasting Development Paths for Beijing and Shanghai* (Washington, DC: World Bank, 2010).

⁸³ Focus group discussion with garments exporters, August 13, 2013. Recently, a 24/7 customs clearance (launched as a pilot in 2012) was extended to include other ports as well. Ministry of Finance, “CBEC Extends 24X7 Customs Facility for Export Cargo from 1st July, 2013,” Press release, June 25, 2013.

⁸⁴ India scores lowest compared to seven other major export countries with regard to lead time. Birnbaum, “Benchmark Study India,” p. III. In sector interviews, we were quoted optimistic timelines, indicating the broader problem that many firms in the industry do not deliver upon their promises.

for goods from Delhi and from Shenzhen to reach Chennai (7–10 days). The causes of such long delivery times, and their unpredictability, are treated in depth in a separate report.⁸⁵

44. **These barriers to domestic connection have a range of effects on market structure, beyond mere costs.** First, they restrict the radius within which an apparel firm can effectively source, which is bounded by the need to receive material in time to meet their own purchasers' deadlines. So a needed quality of fabric might be available in theory in India, but not in practice to the firm that needs it. Second, even when a supplier does exist within the range imposed by slow and unpredictable domestic logistics, there will be fewer firms competing to supply a given good, which is liable to increase prices and decrease quality and service levels. Both effects then have a further, second-order impact, on management capabilities: the first, by lowering the number and range of suppliers brought into any purchasing firms' network; the second, by decreasing competitive pressure in the supply chain.

C. UNPROCESSED FABRIC

45. **General fragmentation is now being exacerbated by a crisis in processing, which, if not resolved, may snap the domestic value chain.** As mentioned in Section 1, the processing segment is facing a regulatory crisis. If this is not resolved, the overall textiles and apparel value chain is likely to disaggregate into two disconnected halves, one producing yarn and, in limited quantities, unprocessed fabric, both for export; the other using only imported, processed fabric to make garments. In effect, the textiles and apparel value chain would become analogous to the electronics industry in India as it stands today, with some segments integrated into global value chains, but no domestic integration, and hence low barriers for existing activities to simply move elsewhere.⁸⁶

46. **The origins of this crisis in processing are a cycle of increasing regulation, increasing violation, and decreasing trust.** Textile processing generates substantial byproducts, principally liquid effluents from the dyeing process. These effluents have historically been one of the largest sources of water pollution, especially when discharged with minimal or no treatment. As a result, environmental regulations—in India as elsewhere—have required increasing levels of effluent treatment from processing plants. However, making such regulations effective requires close monitoring and testing of the effluent discharge. Enforcement was widely circumvented by firms, leading to rapidly increasing river pollution and a judicial response, starting with the Madras High Court in January 2011, to mandate “zero liquid discharge” (ZLD).⁸⁷ This is widely in advance of the global industry, with large players such as Inditex,

⁸⁵ Luke Simon Jordan and Bertine Kamphuis, “Freight and Logistics in India: The hidden constraint on manufacturing growth,” unpublished draft report, October 2013.

⁸⁶ See the parallel study on electronics: Dieter Ernst, “Fast Tracking India’s Electronics Manufacturing Industry: Business Environment and Industrial Policy,” unpublished draft report, October 2013.

⁸⁷ Madras High Court order dated January 4, 2011.

H&M, and Gap committing to sourcing only ZLD products by 2020,⁸⁸ providing Indian firms' competitors almost a decade longer to find solutions.

47. **Since 2011, hundreds of plants have closed, and a series of policy responses have followed, with a durable solution still being sought.** Following the 2011 ruling, a wave of closures began with over 400 plants in the Tirupur cluster in Tamil Nadu (one of the largest in the country). Since then, a series of policy responses has included an allocation of Rs 200 crore in the Union Budget of 2010 for common ZLD facilities in Tirupur; further State-level allocations for common facilities; and the revision of a Common Effluent Treatment Plant (CETP) scheme by the Ministry of Environment and Forests (MoEF), with a subsidy of a maximum of Rs 20 crore, or 50 percent of the cost, for such common facilities.⁸⁹ As these policies indicate, the problem is one of scale: ZLD facilities are highly capital-intensive, creating large economies of scale.

48. **Those policy responses have run aground on the difficulties of gaining sufficient scale, and particularly of collaboration among units.** Officials in the states, as well as industry consultants and firms, reported that operational issues had blunted the effectiveness of the common facilities erected so far.⁹⁰ Effluent treatment is a complex process, and a common facility requires that all firms using it do minimal internal processing, so that inputs are of a homogenous quality. When many firms are using the same facility, there is a temptation for each firm to skip the initial, internal processing, since the costs of maintaining the facility are widely shared and cheating is hard to detect. This is a classic free-rider problem, one difficult to solve without strong bonds of trust among members or innovative means of collective monitoring and discipline. The smaller the median firm (excluding those that are vertically integrated), the more will have to be included to gain sufficient scale for a common facility, and the more difficult the problem of collaboration.

49. **Most of India's processing industry is either vertically integrated or tiny, and investment in it is lagging.** Processing fabric is more capital-intensive than in the apparel industry; however, historical legacies (e.g., small-scale sector reservations) have left this segment with a small-scale business model, while the current environment does not invite new investment to modernize dyeing and processing activities. In numbers, a survey by the Textiles Committee in 2005 revealed at least 2,500 processing plants in India, with less than 500 having a turnover above Rs 5 crore. Industry sources estimate that as few as 25 of those are operating with the latest technology machines. By contrast, in China, in 2006 almost 2,500 processing houses had a turnover of above Y 5 million, roughly equivalent to Rs 5 crore at today's exchange rates

⁸⁸ Zero Discharge of Hazardous Chemicals, <http://www.roadmaptozero.com/>.

⁸⁹ MoEF, "Revised Guidelines for the Centrally Sponsored Scheme of Common Effluent Treatment Plants (CEPTs)," <http://envfor.nic.in/downloads/public-information/revised-cetp.pdf>

⁹⁰ Interviews with officials in Tamil Nadu, Infrastructure Leasing & Financial Services Limited (IL&FS), and firms in Tamil Nadu.

(with statistics not available on units under that turnover).⁹¹ A recent, detailed project report for a common facility estimated that ZLD requires investment of at least Rs 100 crore to become economical.⁹² To illustrate what this implies for necessary collaboration, if the average firm using the common facility has a revenue of Rs 2.5 crore and a margin of 5 percent, some 160 firms would have to forego all of their profits to pay back the plant in five years, or half of their profit to do so in 10 years. For an average plant size of Rs 7.5 crore, the number required drops to around 50. In starkest contrast, one of India's largest fully integrated textile companies, with annual revenue of US\$2 billion, has implemented ZLD with barely a dent to its competitiveness.⁹³

50. The small size is encouraged by strong incentives for processing firms to “stay under the radar,” avoiding monitoring and availing SME schemes and exemptions. For most processing firms, not only does being small provide benefits in terms of access to government schemes, it also makes them harder to keep a close watch on than large units. As a result, they are effectively left without oversight in terms of environmental regulations, and can price their services far more competitively than larger, formal units.⁹⁴ As one firm put it, “the minute you succeed, you become swarmed with inspectors, so better to have a number of scattered, small units so you can operate in peace.” Another firm added that “if you don’t, the other small guys will undercut your prices and you’ll soon go under.” Unsurprisingly, the processing industry has remained dominated by small units and compliance with environmental regulations is particularly low.⁹⁵ With limited effective oversight and an active judiciary, the thousands of processing SMEs generating a large proportion of India’s total industrial pollution load have few other incentives than to lie low—until they are shut down by court order.

51. The result has been stagnating investment, and, most worrying, the decay of current or potential integrated clusters. Given the substantial policy risk around environmental issues, together with uncertainty about the apparel sector to absorb larger volumes, few textiles and apparel players have been willing to take the risk to expand into processing. Moreover, increasing nervousness by the Government over these environmental issues seems to be excluding processing from some important schemes. This is apparent, for example, in the Scheme for Integrated Textile Parks (SITP): it has been successful in attracting spinning and weaving firms, but reluctance to accept processing units in the parks means that apparel firms

⁹¹ National Skill Development Corporation, “Human Resource and Skill Requirements in the Textile Sector (2022)” Report, undated, pp. 15-16; third author’s calculations; China Council for the Promotion of International Trade, “China Business Guide, Textile Volume,” October 2007.

⁹² First author’s personal communication with project consultants (IL&FS) preparing a DPR for such a facility, December 2012.

⁹³ As seen and discussed in a visit to a processing facility in Delhi by the authors.

⁹⁴ As a sector insider mentioned at a textile conference in September 2013, “any industrialist will set up many small units.”

⁹⁵ World Bank, “Project Appraisal Document on a Proposed Loan in The Amount Of US\$25.21 Million and a Proposed Credit in the Amount of SDR 25.7 Million (US\$38.94 million equivalent) to the Republic of India for a Capacity Building For Industrial Pollution Management Project,” Report No.: 54364-IN, May 6, 2010, pp. 9–13.

have generally avoided them.⁹⁶ As the representative of one apparel firm said in an interview, “if you tell the Government you want to build an industrial park, they welcome you with open arms—if you tell them you want a processing plant in the park, they push you away just as fast.” In general, any cluster is unlikely to integrate across the value chain without a proximate processing unit, e.g., such that a single area might specialize in a particular type of men’s shirts, with weavers, processors, and garment makers all developing high proficiency in their production. These types of integrated clusters are often cited by the sector as a core strength of China’s industry. Given the domestic fragmentation described above, this would threaten to deepen the issues of under-utilization by breaking up or preventing even local coordination. As such, restoring trust between processing units, regulators, and civil society, as well as finding effective models to aggregate small units to achieve economies of scale and monitoring, must be considered urgent tasks for the industry.

52. Finally, even after a solution to the treatment problem is found, management capabilities in processing will need to be upgraded. The costs of effluent treatment can often be mitigated by simple management steps, such as tightening controls of leaks and other simple cost-saving techniques. Recent initiatives have shown these can save 20 percent of water and 30 percent of fuel use per ton treated.⁹⁷ For small units, the resulting savings are unlikely to be worth management time, and do not solve the central problem of attaining ZLD, but for large units the savings could be substantial. It is unclear how many large firms may implement such facilities, but most of the garment firms interviewed testified to widespread issues—as they perceived it—with the management capabilities of some of the larger, stand-alone mills. Many large garment firms described the frustration of dealing with these larger mills, from having to call back dozens of times to determine the status of an order to chasing instead of being chased by marketing and sales teams. Indeed, the slow diffusion of capabilities in textiles in India, in contrast to the same industry in China and some other industries in India (notably auto components), is, however, an issue that extends beyond the processing segment.

D. MANAGEMENT CAPABILITIES

53. Management capabilities, especially those to manage deliveries and expand on time, seem to be diffusing slowly. Inability to deliver and expand on time is not only a function of the absence of effective third-party sourcing agents, trade barriers, or processing difficulties. Weaknesses in supply chain management capabilities at the firm level play a substantial role, exacerbating those constraints, even when indirectly exacerbated by them. The larger garments firms in India are mostly managed by technical staff; smaller firms are more often family-run

⁹⁶ Yannick Saleman and Luke Simon Jordan, “The Implementation of Industrial Parks Some Lessons Learned in India,” Report, Competitive Industries Practice, The World Bank, 2013 (submitted to the World Bank Policy Research Working Paper Series); ADB interview results on apparel firms avoiding parks, as shared with the authors.

⁹⁷ Susan Egan Keane, “Responsible Sourcing Initiative, Efficiency Improvements that Prevent Pollution and Save Money,” presentation, May 9, 2011.

businesses.⁹⁸ Strong management capabilities are often lacking, or diverted towards managing more urgent problems, such as dealing with power, customs or man-power challenges. Sourcing strategies involve choice among various supply markets and the choice among various supply channels. This requires substantial management capabilities to effectively assess hidden costs of different sourcing options, as well as identify optimal sourcing channels. For instance, double sourcing, i.e. the “use of one close, quick and expensive supplier and of one distant, slow and inexpensive supplier for the very same garment,” is a strategy that has effectively been used to minimize costs and keep flexibility at the same time.⁹⁹ Such a strategy might be applicable to the Indian domestic context where lead times of domestic suppliers can be unpredictable. However, our interviews found little evidence of the use of such strategies, and other empirical work has documented process gaps in such tasks as inventory control, even in clusters considered relatively advanced, such as Pune.¹⁰⁰

54. The fragmentation described above clearly plays a part in this slow diffusion, compared to, for example, the auto-components industry. As noted above, the absence of third-party agents removes a crucial market intermediary that could otherwise play a crucial role in diffusing capabilities. The same weaknesses in contract enforcement that hobble the emergence of such agents may also play a role in restricting the use of middle-managers in firms, although the existence of large, technical firms, and the general experience of the auto-components industry, caution against placing too much weight on this explanation. Indeed, building on a comparison to the latter industry, it is the lack of intermediaries that would seem more binding, since in autos the original equipment manufacturers (OEMs) could play the role of connector. Case studies from the outset of the auto boom, almost a decade ago, point to exactly this source of the rapid diffusion of world-class capabilities in that industry.¹⁰¹ Another difference has been the more national and integrated character of auto-components, driven in part by the larger, natural scale of components firms, and in part by their historically easier ability to integrate across states.¹⁰²

55. This is particularly the case for protection from domestic and international competition, in processing and in general. If a small group of domestic firms operates behind high trade barriers (whether de facto or de jure), then they can exist in a low-capability equilibrium, since buyers will lack the ability to force change by switching suppliers (as all offer equally low levels of service). If this, in turn, results in the purchasers being uncompetitive, and hence providing low levels of demand, the suppliers may be both protected and have poor

⁹⁸ Nicholas Bloom et al., “Does Management Matter? Evidence from India,” *The Quarterly Journal of Economics* 128, no. 1 (2013): 1-51.

⁹⁹ J. Åkesson, P. Jonsson, R. Edanius-Hällås, “An assessment of sourcing strategies in the Swedish Apparel industry,” *International Journal of Physical Distribution & Logistics Management* 37, no. 9 (2007): 740-762.

¹⁰⁰ Bloom et al., “Does Management Matter?”

¹⁰¹ John Sutton, “The Auto-component Supply Chain in China and India: A Benchmarking Study,” February 2004.

¹⁰² However, as shown by Jordan and Kamphuis, “Freight and Logistics in India” this is under threat, given the continued delays in integrating the national market and OEMs’ ever-greater shifts to lean production are starting to fragment even auto-components.

financial results. From our interviews, this appears to be the case for fabric supply, as apparel firms cannot obtain high-quality fabric, but integrated mills resist dismantling barriers to trade, citing their precarious financial position. The key to breaking such an equilibrium would be the gradual introduction of competition, through opening windows for trade liberalization, greater national integration, and the introduction of FDI, combined with forms of support for operational consultants to improve basic management practices.¹⁰³ Such support policies would, however, have to be substantially different from those of the past, many of which seem to have worked against, rather than in favor of, the diffusion of capabilities.

56. The general tenor of support policies protect small firms and subsidize capital, rather than protecting capable firms and subsidizing capabilities. This is not to say that such management capabilities do not exist. They clearly do, particularly among the stronger firms, whether the large integrated ones, or in high-performing clusters, such as Surat in Gujarat. In a well-functioning market, resources would be reallocated to the more capable firms, or clusters thereof. Less capable firms would be forced to invest in their own capabilities, or would go out of business, clearing the way for the stronger firms' expansion. However, less capable firms benefit from both formal and informal protection: formal, in the shape of subsidies, formal exemptions, and barriers to exit; and informally, through "flying under the radar." Many firms reported that the smallest units are able to violate costly regulations, undercutting the prices that larger units must charge, and thereby gaining an advantage that subsidizes their lower capabilities. Of course, some of the smaller firms are highly capable, but they also report staying small—and avoiding orders—for fear of attracting increased inspections and demands for informal payments. So large, capable firms face unfair competition from small, lightly regulated firms, and small, capable firms do not grow. The justification for the support to less capable firms may be to enable technology acquisition and upgrading, but this requires that such firms be disciplined to undertake the needed effort to upgrade, and, as described above, there is little evidence that this is occurring.¹⁰⁴ Instead, many schemes simply provide a direct subsidy to capital, or indefinite protection and support, with little means for discipline. As long as domestically the "carrots" (support from the Ministry of Micro, Small, and Medium Enterprises (MoMSME) and Ministry of Textiles (MoT) schemes and trade protection) so greatly outweigh the "sticks" (poor regulatory oversight), low-capability firms will be able to undercut higher-capability ones and subvert aggregation mechanisms or common action.

57. It is also not clear to what extent national associations have taken up the task of diffusing capabilities effectively. Experience elsewhere, especially in Italy, demonstrates that large firm sizes are not necessary for the spread of capabilities in textiles and apparel. There, industry associations played a crucial role both in spreading capabilities directly and in intermediating with government and with labor unions to strike common bargains in favor of

¹⁰³ Bloom et al., "Does Management Matter?"

¹⁰⁴ Mushtaq Khan, "Learning, Technology Acquisition and Governance Challenges in Developing Countries," unpublished monograph, supported by DFID.

such upgrading.¹⁰⁵ In doing so, however, they relied on exceptionally high levels of pre-existing social capital, and on government willingness to withdraw support if the overall industry did not fulfill its side of the deal.¹⁰⁶ In general, the ability of associations—local or national—to credibly commit their members to discipline is seen as crucial to public schemes to promote investment in intangibles, whether worker skills or firm R&D. Where these links are missing, even small, homogenous and developed countries such as Denmark and Finland struggle to achieve success in such schemes.¹⁰⁷ In India, some of the textiles associations have shown a strong ability to connect firms, though principally in areas of existing capabilities (above all in the south, through the South Indian Mills Association). However, many firms and government officials reported a perception that a substantial portion of the associations are primarily focused on lobbying for incentives and subsidies. How to build up associations' own capabilities on difficult soil is an important question, but also points deeper, towards the problems of common action.

E. COMMON THREADS

58. Across the value chain, multiple segments are trapped in similar problems, with long lead times and low capacity utilization constraining investment and jobs. As follows from the discussion above, the different segments in the textiles and apparel value chain are awaiting stronger demand downstream, while upstream players have worries about ensuring supplies. There is little foundation for joint action with mutual benefit, indeed often the opposite is the case, with each segment lobbying against the others, privately or publicly. The fragmentation of the critical middle of the value chain, with small informal processing units between larger weaving units and garment exporters, further complicates such coordination throughout the value chain. Lobbying, engagement in dialogue, and even investment itself is thus often about seeking rents (duties, market structure, etc.) rather than enhanced value addition and the promotion of industrial learning.

59. A complex set of inter-connected causes create these equilibriums. Figure 6 attempts to trace, in summary form, the interaction of regulatory constraints, common action problems, and interrelated outcomes that are at work. At its heart sit the twin problems of fragmentation and low diffusion, traceable to barriers to trade and contract enforcement difficulties, restricting the connections that can form among the elements of the supply chain. Customs difficulties likewise restrict the scope of common action by limiting the operational effectiveness of, for example, common marketing, and restricting the diffusion of capabilities by capping competitive

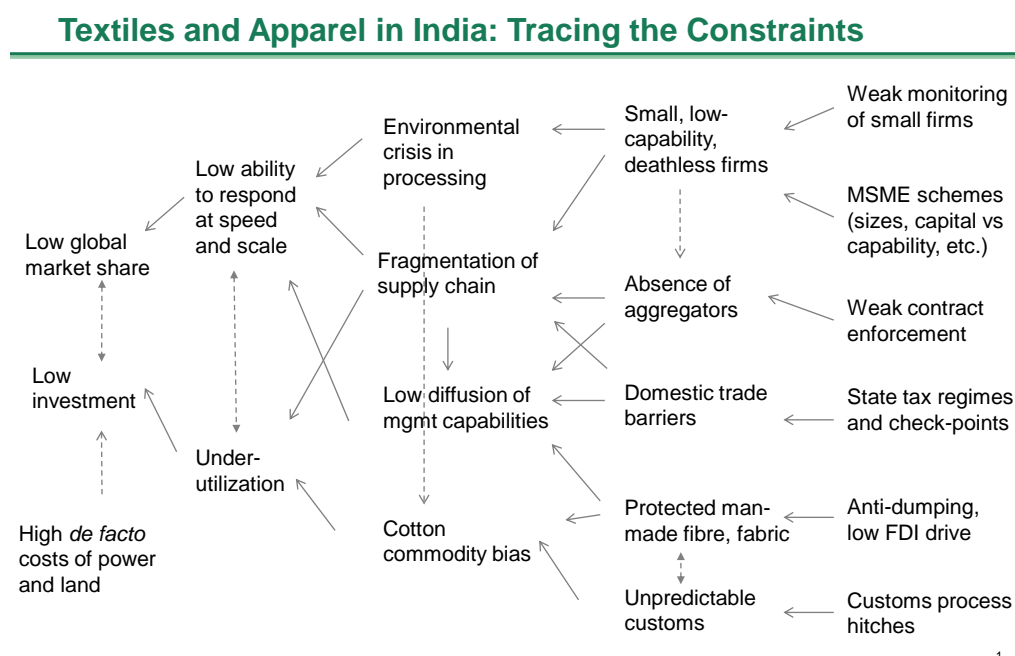
¹⁰⁵ Alberto Criscuolo, "Artisan Associations and Small Enterprise Development in the "Third" Italy," Unpublished Master's thesis, 2002.

¹⁰⁶ Ibid.; Robert D. Putman, with Robert Leonardi and Raffaella Y. Nanetti, *Making Democracy Work: Civic Traditions in Modern Italy* (Princeton: Princeton University Press: 1993).

¹⁰⁷ Darius Ornston, "Old Ideas and New Investments: Divergent Pathways to a Knowledge Economy in Denmark and Finland," *Governance: An International Journal of Policy, Administration, and Institutions* 25, No. 4 (2012): 687-710.

pressures. The result is that, instead of a single national industry benefiting from and competing with global supply, the value chain is characterized by isolated pockets, with fewer connections, smaller scale, little pressure to upgrade and transform, and a consequent proclivity to chase further protection and subsidies rather than productive common action.

Figure 6: Schematic of Constraints



60. **On the other hand, this bleak picture is neither universal nor pre-determined: such equilibriums can and have been broken in some parts of the industry in India.** One story that gives rise to optimism is provided by fittings: the small items such as lace and specialty buttons that make up a small portion of material but without which many garment orders cannot be completed. In May 2006, a scheme was introduced that allowed apparel firms to import such trimmings worth up to 3 percent of their export revenues, duty free but—just as importantly—hassle free. Apparel firms reported that this led to a surge in their use of such fittings, as they could compete for orders that previously had gone unfulfilled. However, when such demand was demonstrated, other firms became interested in the segment, and soon lace production began to expand rapidly in India itself.¹⁰⁸ When undertaken by high-capability firms, this turned out to be competitive with imports, and a similar dynamic repeated itself in other fittings segments, such as specialty buttons. The result was that, in time, the same garment firms reported using a declining share of their quotas for fittings, as they were able to source locally (one firm reported that over the last two years it has only used 70-75 percent of its quota). So the gradual

¹⁰⁸ This was also enabled by the development of lace machinery in China, such that capital costs for lace production dropped to one-fifth that of European technology (however, this was available to Chinese lace producers as well).

introduction of competition allowed the demonstration of demand, which subsequently led to local investment to meet this demand. If this experiment were repeated, for example, in high-quality synthetic fabric, it could play a substantial role in shifting the value chain towards higher-capability and more competitive supplies. On the other hand, this would increase competition for domestic production upstream in the value chain, which—these firms having been protected for so long—is likely to be fiercely resisted, even if over three to five years it is likely to result in a larger market and more productive and competitive producers.

61. **Moreover, “shock therapy” would likely be counterproductive, removing incipient capabilities and firms that could grow to compete.** In fact, it is unlikely that the instant, full opening of all segments to competition would be a route to long-term growth. This was attempted, for example, in electronics in the mid-1990s, and resulted in the decimation of local capabilities, from which the industry has still not recovered.¹⁰⁹ The existing value chain represents a base of capabilities and learning that is a substantial asset, even if it is not as globally competitive as it needs to be. This is not an excuse to continue protections indefinitely—in which case the asset would gradually lose all its value, just the same as if exposed suddenly to full competition—but it is a motivation to proceed gradually, reducing protection step by step. Naturally, though, this argument does not hold for *domestic* barriers to movement, and the integration of the national market in full and as quickly as possible remains an urgent need.

62. **So the route out is to follow a phased approach of providing support for capabilities, rather than capital, while gradually dismantling barriers to movement and competition.** In all, the choke points described above point to a clear agenda: capital or export subsidies and other common instruments are unlikely to be effective. What is needed is to remove the barriers to the integration of the domestic value chain, and its ability to source and compete globally, while supporting the diffusion of capabilities to manage environmental challenges and deliver on time and at scale, so that apparel exporters can break out of the trap of single-season, commoditized production. If that happens, then the cost structure and scale advantages of India may be unleashed; if not, then a fragmented industry will continue to be consigned to niches, with stagnant incomes for firms and workers, and its sustainability under threat. We now turn to the specific components of an agenda that might lead to the former.

¹⁰⁹ See Dieter Ernst, “Fast Tracking India’s Electronics Manufacturing Industry.”

SECTION 3: RESPONSES

A. *PHASE IN MORE COMPETITION, WITH INITIAL SUPPORT*

63. **Key segments of the value chain face implicit protection through trade barriers.** As described above, the apparel industry is unlikely to register strong growth unless the *de facto* protections for fabric, especially synthetic fabric, are gradually dismantled. Without this, India's entire value chain will lose out on the garments winter season, the most attractive season in terms of global demand. Enabling rapid access to large quantities of high-quality synthetic fabric must therefore be among the highest priority reforms for the sector. The same holds for MMF, where the current anti-dumping duties should be removed, if necessary with a phase-out window.

64. **These changes could be phased in to convince stakeholders of their benefits.** It is likely that cotton growers would object to the cheaper availability of MMF, even if in the long-run the case of China indicates that such availability would also raise demand for cotton. A second-best solution could be to provide a guarantee that the reserve price of cotton would be maintained (or even increased to that set in China). The current oligopoly would be likely to resist such a reform, requiring political will to be exerted in the interests of the tens of millions employed in the rest of the value chain.

65. **Another means to open the market could be to allow a specified percentage of their needs to be imported by firms without duty or inspection, subject to extremely stiff penalties for abuse** (such as having *every* shipment of any size inspected, plus substantial fines). Drawing on the example of fittings imports given above, garment or weaving firms could be given certificates worth a tenth of their exports; such certificates could be used for free imports of yarn or fabric. Over time this proportion could be raised, with the domestic industry expected to adjust to the competition. This would be particularly valuable for apparel and garment firms (which have suggested such a mechanism), as they could manage their use of such certificates to top up inventories and secure emergency, high-quality fabric for particularly important orders. Special attention should be given to new entrants or rapidly growing firms to prevent that such policies protect existing players against new entrants. More ambitiously, all inputs imported for the purpose of garment exports could be allowed to enter the country hassle free. Once again, the domestic processing houses and integrated mills would be likely to resist such a policy, although such resistance might be softened by temporary support schemes.

66. **High-capability foreign investment should also be attracted to demonstrate the effect of the ability to respond to orders quickly.** A long-standing justification for foreign direct investment is its role in demonstrating and diffusing new management capabilities. East Asian integrated mills and processing houses have a demonstrated ability precisely to deliver

with speed and scale, a capability so far absent in the industry in India.¹¹⁰ As such, another priority would be to facilitate the entry of foreign investors in integrated mills close to centers of apparel production. However, such investors are unlikely to commit until demand is proven, which is unlikely to occur until garment makers can sustainably bid for larger orders and winter collections, which in turn would require at least partial import liberalization. Since opening a protected sector to both foreign trade and investment at once would incur high political costs, trade liberalization might need to precede investment attraction. However, if the foreign investors facilitated also possess strong capacities for managing environmental costs, such facilitation would be an important subsequent step.¹¹¹ Korea, with its long history of textile production, its remaining base of high-tech firms, and its own advanced environmental regulations, could be a promising source of such investment. A concrete next step could entail in-depth interviews with successful, vertically integrated players in India and elsewhere (the later as potential FDI) to better understand why there are not more of them.¹¹²

67. Small, informal processing units need help to aggregate sustainably, but with the discipline of competition, through dismantling their formal and informal protection. As described above, the processing industry's proliferation of small-scale firms is one of the largest threats to the competitiveness of the entire value chain. These firms need to be subjected to a stronger inspections regime, not only to create a level playing field between them and larger units, but simply to preserve the social license to operate of the processing industry as a whole. The schemes that provide them exemptions and subsidies based on their small size likewise should be gradually phased out. However, these firms provide a base of capabilities about how to run processing houses. Those capabilities are an asset that would be inefficient to discard.

68. As such, the subsidies that currently keep the firms small should be replaced with schemes that encourage them to consolidate and regularize. This might take a form similar to the SITP, in which a number of smaller processing firms were required to merge into a single special purpose vehicle (SPV), which would then be eligible for funding to build ZLD facilities, with funding large enough to make a difference (and not requiring approvals at multiple tiers). These larger units would then be more easily and strictly monitored, but also eligible for support to build capabilities (e.g., some subsidies for technical and process consulting to cut down on

¹¹⁰ Another area that seems to be in need of foreign entry is trimmings, as identified by Birnbaum, "Benchmark Study India," p. 17. In today's fashion garments industry, buyers generally designate suppliers of trim items. As a consequence, "the major designated global trim suppliers have all set up branch factories in virtually every major garment-exporting country, with the notable exception of India."

¹¹¹ Foreign investment might also be attracted in synthetic fibers, to increase competition and reduce the current oligopoly, but given forecasts of a huge oversupply in Asia within the next two to three years this is likely to be difficult. Moreover, the issues in that segment could be addressed equally well by domestic or foreign investment.

¹¹² Interviews with transnational garment factories as part of an apparel export benchmark study suggest that India's relative low number of transnational garment factories is related to its (perceived and real) unreliable regulatory environment. Birnbaum, "Benchmark Study India," p. 89.

waste). After some cut-off date, firms not having crossed a scale threshold, on their own or via some equivalent scheme, would be subject to the full force of regulation requiring shut-down.

69. **Given the fragile state of these segments, and the need to retain a domestic value chain as a core competitive advantage, competition should be phased in.** A common thread above is that the immediate introduction of competition is likely to be both infeasible as well as damaging to the value chain's long-term prospects. On the other hand, growth will not be sustainable under the status quo. As such, two processes need to be undertaken together: gradually exposing the synthetic fiber and processing industries to competition, while providing support for the latter, in particular to gain the capabilities needed to survive. Unless this is done, the development of a full value chain capable of delivering large orders quickly and in all seasons is unlikely, and hence, so is the ability of the apparel industry to generate the growth and jobs needed to meet India's targets for the manufacturing sector. On the other hand, if done effectively, this can result in a virtuous cycle of new demand being created, new investment coming to supplement it, and a general increase in wages and jobs.

B. REMOVE THE BARRIERS TO MOVEMENT

70. **A high priority must be to ease the barriers to movement of goods within India, so firms can obtain needed inputs swiftly.** As noted repeatedly, in terms of the cost and time to move goods, Tamil Nadu is as integrated with Guangdong as it is with Gujarat. The value chain will not be able to combine localized scale, diversity of supply, and rapid response times if this remains the case. Achieving easier movement of goods internally requires investments and reforms of much wider scope than the textiles and apparel industry, in particular for implementation of the long-delayed national Goods and Services Tax (GST), the dismantling of check-posts, and continued infrastructure investment. While the MoT and textile industry's role here would be limited, at the least it should add its voice to the pressure for the implementation of such reforms. Moreover, the very large number of jobs at stake in textiles and apparel should be made part of the motivation for those reforms.

71. **Customs risk management systems (RMS) should be implemented more vigorously, as should announced policies on “no halting” of textiles and apparel shipments.** As well as easing domestic movement, exports must be made dramatically simpler. There have been policy movements in this regard, such as the announcement in 2012 of a “no stopping” policy, whereby customs officers would not be allowed to stop shipments in case of disputes, but rather could make note of and subsequently follow up on the case. However, apparel firms report varying implementation of this policy by port. Tutticorin in Tamil Nadu, for example, is said to now clear exports in a matter of hours (but only receives a few calls from shipping lines); at Mumbai, a few shipments were stopped in violation of the order, but the officers concerned were later reprimanded and, by some reports, removed; in Delhi, however, firms report the order is hardly heeded.

72. **More generally, India has begun to implement a risk management system for customs, which is designed to ease exports and imports.** Such systems have been increasingly common reforms around the world in the last two decades. Under these systems, firms with clean records of obeying customs regulations use a “green channel” that allows their shipments to be cleared without inspection, as long as paperwork (electronically filed) is in order. Inspection is thus shifted to a graduated “trust but verify” system, such that more honest firms are allowed more trust and less verification, enabling much smoother trade. An RMS for imports was formally notified in 2005 in India, and notice was given for its expansion to cover exports in June 2013.¹¹³ However, firms report that implementation at many entry points is in theory more than fact, with only the largest firms able to secure “green channel” treatment. Many are subject to intense scrutiny, with customs officers questioning the item value of pairs of socks being shipped to major US chains, or holding up large imports of fabric because one item differed in its technical specifications from the manifest. Universal implementation of RMS must be a priority, one much more important for export performance than further export subsidies or subvention schemes. Doing so will require stronger voice and accountability mechanisms vis-à-vis customs officers, balanced with much more severe penalties for violations.

73. **More rapid dispute resolution processes need to be put in place for clarifying inevitable tariff line disputes.** A third priority for customs reform is to streamline processes to clarify disputes on tariff lines. These arise when notifications exempt or lower tariffs on certain specific imports, or differentiate between products at a granular level (e.g., on the basis of the quality level of the fabric). Since production processes can be variable, and international standards evolve, these notifications can quickly become a barrier rather than a help, as shipments that differ slightly from the specifications are held up and disputes ensue over which policy is relevant. Such disputes are natural and inevitable; the issue is the length of time needed to resolve them, with firms reporting months to clarify regulations as files are passed between departments. As above, care must be taken to avoid dispute, and all firms interviewed agreed that penalties for violations should rise, but the relevant departments should consider putting in place a fast-track process to clear these disputes and allow production to proceed.¹¹⁴

C. SCHEMES NEED TO CHANGE

74. **Most current and prior schemes are subsidizing capital, rather than addressing the real constraints to the industry.** The most substantial scheme for the textile industry at present is the Technology Upgradation Fund Scheme (TUFS). Begun in 1999 for an initial period of five years, and repeatedly extended and modified thereafter, it provides a subsidy of some 15 to 25 percent of the cost of a textile machine that is less than 10 years old.¹¹⁵ As noted above, self-

¹¹³ Government of India, Central Board of Excise and Customs, Circular No. 23/2013.

¹¹⁴ An identical issue is faced by the electronics industry.

¹¹⁵ The scheme has a budget of Rs 11,900 crore (~US\$2 billion) for the 12th Plan period, and contains a number of variations, e.g., the subsidy can also be taken as a 5 percent interest rate subvention, has varying eligibility

generation of electricity and low capacity utilization may double the effective cost per square meter of weaving in India, making it more expensive than for any comparator, and almost as expensive as in the US.¹¹⁶ A subsidy to the cost of capital will not make much headway in this case. For any capital subsidy scheme to overcome the costs of low utilization and unreliable electricity it would have to subsidize almost 75 percent of the capital costs. Since this does not seem plausible, additional schemes of this sort or increased funding for them would seem to have little point. Since electricity availability is a larger issue, well beyond the textiles industry, any reform efforts should focus first on addressing the constraints to utilization.

75. A proliferation of schemes from different Ministries in itself furthers fragmentation, particularly when tied to size thresholds. Much of the remaining policy support for the industry derives from schemes tied to SME size categories. There are a multitude of such schemes: whether related to SMEs in general and under the purview of the Ministry of MSME; or run by the Ministry of Textiles at the Centre or in the States and defining eligibility through the MoMSME's criteria. Such schemes provide funding for everything from consultancy in lean operations to common facilities, and, most importantly, provide exemptions ranging from excise taxes to electricity duties. If there existed strong, well-functioning market intermediaries which could aggregate the capacity of many small units, these schemes could have substantial and beneficial impact. As it is, with the lack of scale to deliver large orders quickly being the root cause of the value chain's low performance, and few integrated programs to develop connective tissue among small firms, subsidizing a lack of scale is counter-productive at best. Reasonable size units in every segment substantially exceed the current thresholds even for "medium enterprises" in the manufacturing sector, namely Rs 5-10 crore in terms of investment in plant and machinery,¹¹⁷ by up to a factor of ten. A spinning, processing, or weaving unit employing 200 to 300 people—"medium" by almost any standard—requires investment of Rs 120 to 200 crore, a garment firm employing around 1,000 people requires Rs 40 crore. In particular, a moderate-sized new processing plant (with advanced equipment) will cost Rs 150 crore. In other words, the new units required to meet the environmental challenge are explicitly excluded from a vast range of schemes, which their old, informal, and often unmonitored competitors can avail.¹¹⁸

76. The Scheme for Integrated Textile Parks has facilitated some forms of common action, but could do more to support capabilities and integration, especially for processing. SITP has had an unusual ability to bring otherwise scattered firms together to get things done and to form clusters.¹¹⁹ However, albeit less prone to failure than most, it remains an industrial park

requirements depending on the sector, includes some foreign exchanging hedging, and so on. Maharashtra, Gujarat, Madhya Pradesh, Rajasthan recently announced additional top-ups.

¹¹⁶ Using the calculation presented in Table 7, with the cost of weaving in the US at US\$0.334 per square meter (IPCC, 2012) and the reality-adjusted cost in India at US\$0.316.

¹¹⁷ As per Micro, Small & Medium Enterprises Development Act 2006.

¹¹⁸ Based on units sized to produce or process some 15–20 tons per day of material in wovens, or 25–30 tons per day in knitted fabric. Industry interviews.

¹¹⁹ Saleman and Jordan, "The Implementation of Industrial Parks: Some Lessons Learned in India."

program, with all the limitations thereof, and is unlikely to address the root cause issues affecting the industry. Moreover, it has been most successful in areas with pre-existing industry and high social capital, so that one entrepreneur could mobilize a group to pursue collective action; and in textiles and spinning, whose lower labor demands make them more amenable to locating further from cities, where land prices allow expansion.¹²⁰ Where it has taken root, its success will only be meaningful if the forms of common action it induces are used for “softer” activities than construction, namely common marketing and common purchasing. Finally, as described in the section on processing above, the scheme needs to effectively integrate processing, or the “integration” in its title will be elusive.

77. There are some schemes that support some root causes, though their designs need to be tweaked if they are to be more effective. As noted above, the Ministry of MSME and other agencies have tried to fashion schemes to address more root-cause issues, such as the diffusion of management capabilities and the difficulties in financing and operating effluent treatment. However, even the State agencies most successful at promoting such schemes (e.g., those in Tamil Nadu), have reported lackluster demand. This is most often because the schemes are cumbersome and detached from the real prices of goods and services: the lean management scheme, for example, provides a subsidy of Rs 2 lakhs per firm, hardly enough for a few days of a high-quality consultant; and the CETP scheme provides a mere Rs 20 crore for a CETP facility, whereas zero-liquid discharge can require capital costs of Rs 100 crore plus. Moreover, the CETP scheme requires concomitant approval of State and Center, which is notoriously difficult to obtain. As a result, the schemes have gone largely unused.¹²¹

78. The need of the hour is then a substantial shift in the policy agenda, towards tackling the root causes of the textiles and apparel industry’s faltering growth. Traditional policy responses are therefore unlikely to unlock the industry’s growth. Measures such as freight subsidies or other sops to MSMEs (as currently defined) are particularly liable to be ineffective, if not directly harmful.

79. On the other hand, the positive story is that the industry has not gone into remission, and retains an exceptionally strong base from which to build. Many firms, when interviewed, stated that in fact the quality of management had gone up in the industry, as weaker firms had been eliminated in the downturn. So if the root causes of low growth are tackled, the industry could be in a position for a sustained upswing, as the only viable alternative to China. Seizing that potential, however, will require a different agenda to subsidies and schemes and a

¹²⁰ Apparel firms in the north, for example, have made little to no use of the scheme.

¹²¹ Similarly, two World Bank projects in this sphere over the last two decades, which were similarly designed, were closed with the outcome of both projects rated moderately unsatisfactory, according to Independent Evaluation Group (IEG), “Project Performance Assessment Report: India: Industrial Pollution Control Project (Loan 3334-IN and Credit 2252-IN) and Industrial Pollution Prevention Project (Loan 3779 & 3780-IN and Credit 2645-IN),” Report no. 38472, January 25, 2007, p. 18.

concerted effort to create consensus on some difficult reforms and opening of the market, if with some temporary supports to ease the transition and make the agenda possible.

80. **Among schemes themselves, the most important general shift is to prioritize capabilities over capital.** There has been strong recent evidence that management capabilities among firms in India could derive substantial gains from subsidized provision of world-class technical assistance. Current provisions for capital subsidies might be profitably redirected towards such underwriting of the acquisition of such capabilities. However, this would need to be done with care, with frequent revision of the design details, and, above all *without* limitations to ‘SMEs’ as currently defined (i.e., either without size restrictions, or with much larger definitions of “small” and “medium”). A World Bank review of such technical assistance schemes has emphasized that they must be decentralized, and customized to individual firms’ needs; and that interventions need to be substantial, as a few days’ training usually has little impact, versus several weeks of support.¹²² A putative scheme might, for example, draw on an empanelled list of supply chain and delivery planning consultants, with flexibility left to firms drawing on such support to define the terms of engagement, but grants released in tranches that are conditional on performance (for example, meeting productivity targets).¹²³

81. **Any such scheme though would not have durable impact unless paired with measures to increase the rigor of competition, domestically and internationally.** This would provide needed discipline, such that firms that failed to exert sufficient effort to upgrade their quality or productivity would fall by the wayside. Without such discipline, any support is liable to fail.

D. LINKS TO BROADER REFORMS

82. **The ongoing debates about power sector reform will clearly have a substantial impact on the value chain, particularly weaving.** As noted above, with access to uninterrupted grid power, weaving in India is competitive; without it, even high-capacity utilization does not suffice. Schemes to subsidize diesel generation are unlikely to make more than a small impact, and the issue is as much avoiding interruption as the price of self-generating, since a high-end weaving machine is costly to restart if stopped unexpectedly.¹²⁴ This issue is acute, though less so, for spinning (which has a higher process tolerance for stoppage), even less so for processing and least of all for apparel, which is low in its power intensity. So the longer term prospects of weaving in India, with the several lakhs of new machines that ride on it, and the similar number

¹²² Levy, Brian, with Albert Berry, Motoshige Itoh, Linsu Kim, Jeffrey Nugent, and Shujiro Urata, “Technical and Marketing Support Systems for Successful Small and Medium-Size Enterprises in Four Countries,” *World Bank Policy Research Working Paper* 1400, 1994, <http://go.worldbank.org/QHVUM8ECQ0>.

¹²³ The tranching disbursement procedures of the SITP and of many R&D grants provide fertile grounds for learning.

¹²⁴ The power consumption profile of such machinery, with its pronounced peak at different times of the day as production runs begin, makes difficult the use of, for example, distributed solar or other forms of renewable energy, and leads to firms’ heavy reliance on diesel generators.

of higher income jobs that come with supervising those machines, will ultimately remain hostage to solving the power shortage issue in India's states.

83. Finding new ways to strengthen the environmental compliance framework will be necessary to salvage processing and could be a model for other sectors. The potential support scheme described above for small-scale processors might provide a bridge mechanism for the upgrading of the processing industry. If this can be done effectively, the policy innovation might provide a model for other sectors that face the same problem of a large number of small polluters that need to be aggregated. The clearest example is leather processing, where leather plants are also now being told to implement ZLD, an even steeper requirement than for textiles.¹²⁵ Unless the framework for environmental regulation, monitoring and enforcement is substantially reformed, to make it more credible, more predictable, and less a source of antagonism between all stakeholders, the processing industry—and others like it—is likely to lurch from one crisis to another until it disappears.

84. The labor environment is cited as a constraint, in particular by apparel firms. There are a number of contrary indications about the importance of labor regulations in constraining different parts of the value chain. As noted in the World Development Report (2013), in India the key labor constraint is the Industrial Dispute Act (1947), which involves the State in any decisions to fire employees when firm size exceeds 100 employees. Any mid-sized firm will cross this threshold, but the volatility of the industry will place a premium on the flexibility that these regulations restrict. The response has been the widespread use of contract labor and other means to avoid permanent employment, with many apparel firms having a *de facto* size of many times the Act's limit. However, the use of such tactics has in turn been linked to rapid turnover, with most shop-floor employees lasting less than a year, given low incentives to remain in one firm (and many firms' own desire to keep attrition high to prevent disputes). Basic skills can be imparted in a month or two, but more advanced supervisory skills are reported to require several years of shop-floor experience.¹²⁶ Unless these issues are addressed, for example through new forms of labor contracts, the supervisory and mid-level skills shortage is likely to continue.¹²⁷ Other problematic regulations cited by the apparel industry include constraints on overtime (and female adolescents' working hours) imposed by the Factories Act (1948). Coordination issues are also at work here on a deep level: without institutional forms of industry-labor cooperation, whether through unions or high-quality labor brokers, active labor market interventions to

¹²⁵ A leather cluster in Uttar Pradesh was recently notified it may have to introduce zero-liquid discharge in its tanning processes, which the cluster protests is an unprecedented requirement for tanning.

¹²⁶ Petra Sonderegger and Nimesh Mehta, "Tamil Nadu Manufacturing Skills Delivery," Unpublished draft report, October 2013.

¹²⁷ This is also unlikely to be solved by the various "Skills Missions," whose focus on achieving "big headline numbers" has skewed them away from such mid-level skills towards large-volume, entry-level placements.

support skills are unlikely to have much benefit.¹²⁸ However, these issues are being tackled in other, more dedicated studies, and so will not be pursued further here.

85. Cutting across all the segments is the importance of fixing contract dispute resolution, which prevents scale and collective action. The problems in contract dispute resolution are a regulatory constraint barely mentioned, because even more than labor regulations, firms “have learned to live with it” (and no firm interviewed took credibly the idea of suing for breach of contract to remedy a supply problem). Yet addressing it could lead to some of the largest long-term gains, because the means of living with it are precisely those that work against the scaling up of the rest of the industry.

86. The first such means is for individual firms to bypass sourcing or aggregation agents, who cannot enforce the contracts they write with suppliers, to deal with supplier firms directly. As described above, this fragments supply and demand, generating a low-utilization equilibrium in which end-user firms cannot find material if their usual suppliers do not produce it, and supplier firms complain of low utilization. Mid-tier agents cannot substitute the effects of reputation in a repeat game, because lack of performance is so universal that threats to drop firms are unlikely to be credible. As Hirschmann described it, exit is an ineffective customer response if the quality problems affect all the alternates.¹²⁹ Note that this marks a stark contrast to, for example, the auto industry, where the OEMs were in precisely the position to intermediate and both promote capability diffusion and discipline those who lagged behind. The textiles and apparel industry contains few to no such players.¹³⁰ For them to do so, they must receive the legal and other support needed to enforce quality, or the equilibrium will persist.

87. The second coping mechanism is vertical integration. This is a natural response to the high transaction costs and proliferation of hold-up problems caused by weak contract enforcement.¹³¹ It is noticeable, for example, that one of the most successful new garment exporters of the last decade, Alok Industries, is completely integrated vertically, with its own spinning, weaving and (zero liquid discharge) processing mills. Founded in the late 1980s, it now employs about 30,000 people. However, it is unique for another reason: the professionalism of its management, which reportedly contains few to no family members.

88. These coping mechanisms reinforce fragmentation, and work against scale. They are unlikely to be fixed until contract enforcement is. Alok and other large firms seem

¹²⁸ They do not even in Denmark, as can be read in Darius Ornston, “Old Ideas and New Investments.” For the issue of labor brokers and market-makers, see Sonderegger and Mehta, “Tamil Nadu Manufacturing Skills Delivery.”

¹²⁹ Albert O. Hirschman, *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States* (Boston: Harvard University Press, 1970).

¹³⁰ In China, anecdotal reports suggest the first agents were from Hong Kong and Taiwan and were able to secure local authority’s intervention on their behalf by holding out the promise of access to foreign know-how, but intermediated through people culturally similar (and often with access to local social capital). In this way the agents were able to become established without a general ‘rule of law.’

¹³¹ As in the classical theory of the firm, developed by Coase and Williamson.

exceptionally able to manage such problems, but the industry's broader growth cannot take place solely on exceptions. For the industry to grow at scale, management capabilities must diffuse among the broad swath of merely above-average firms. Those firms must then sell to and purchase from intermediaries that can make markets across the value chain. Feasible contract enforcement will not be sufficient for those outcomes, but it is necessary. Other means of supporting the growth of such agents will run high risks of simply creating distortions, as have well-intentioned attempts to promote "market makers" in other markets, from agricultural produce to financial markets. These agents are natural to the industry, if they have the tools to serve their function. Without swifter and better contract enforcement for buyers, the value chain is likely to remain not only small—which may not be a problem if it is connected—but it will remain small *and* fragmented, and hence fundamentally uncompetitive.

E. THE FORM AND FUNCTION OF POLICY DIALOGUE

89. **Overall, multiple agendas can be crafted from the reforms above. One, the narrower, focuses on the reforms that just seek to boost apparel.** The processing and weaving segments are left to themselves. Reforms are focused on the health of the apparel sector alone, given its disproportionate job creation. Customs processes are overhauled (e.g. hassle-free import of fabrics); protection on fabric is gradually but inexorably removed; and new contract types are introduced to ameliorate labor issues. The environmental issues caused by processing faster, leading to the long decline of the segment, are not addressed and weaving does not overcome its power and capacity utilization difficulties. India makes some inroads into non-cotton markets, and captures some new niches, so that it pulls even with Bangladesh and Vietnam in apparel, and maintains its second place in the global yarn market.

90. **A more ambitious agenda would seek to rejuvenate the entire value chain, setting the stage to become the next market leader.** In addition to the customs reforms and the dismantling of protection, this would require the type of sophisticated support measures for capability diffusion, processing aggregation and foreign investment, and the removal of anti-dumping duties on manmade fibers described above. It would require the broader reforms to be pursued as well: without power reforms, weaving will not be competitive; without contract enforcement, the whole value chain will remain fragmented; without the reform of MSME schemes more broadly, it will remain subscale. Most of all, a comprehensive effort would be undertaken to reform the processing segment, without seeking to protect it again from global challenges or to overly subsidize the costs it must bear for environmental sustainability. This would be complemented by a process to generate acceptance and understanding of the inevitable environmental risks (a process only feasible if the processing industry itself becomes a trusted partner in dialogue). If this can be done, though, in this scenario the whole value chain might begin to capitalize on its inherent strengths, which are unmatched by other competitors of the future.

91. **The resulting agendas, which overlap, can then be organized as in Table 8.** This presents and orders the reforms and support measures discussed above. It divides them into those that are specific to the different segments of the textiles and apparel value chain, and economy-wide reforms that cut across it. It likewise divides them by whether they are part of the “narrow apparel” or the “ambitious textiles and apparel value chain” agendas.

92. **Implementing even the narrower agenda will require a different kind of policy dialogue; the ambitious agenda will run extreme risks without such a change.** The more general change needed is one of the basic mindsets behind schemes and interactions among the stakeholders in the value chain. Implementing such an agenda however is unlikely under the current forms and function of policy dialogue among the different segments of the value chain, different stakeholders, and the government. That dialogue is characterized by firms and policymakers alike as having an emphasis on schemes rather than reforms and a desire to protect all participants at once, rather than broker compromises and make difficult decisions. The result is that all parties put forward maximal demands: fabric producers claim lower protection will bankrupt them; fiber producers maintain anti-dumping tariffs are the only bulwark for domestic production; small producers clamor for capital subsidies as they attempt to survive fluctuating power; and so forth. More broadly still, there is deep distrust of the industry by those that would have to participate in reforms, whether customs officers or environmental stakeholders. Unless this is addressed, inevitably there will be a hue and cry regarding each aspect of reforms, and few will get done, except for schemes and subsidies as in the past.

Table 8: A New Reform Agenda

	Segment specific	Economy-wide
Apparel	<ul style="list-style-type: none"> • Allow hassle-free import of fabric, especially synthetic fabric • Continually reduce protection on fabric, but with time-bound support for mills • Implement “no stopping” notices on both customs and internal state borders • Introduce rapid dispute resolution for clarifying tariff lines disputes • Introduce more flexibility in overtime arrangements 	<ul style="list-style-type: none"> • Implement national GST • Implement Customs RMS • Implement alternative contract types to address retention, absenteeism, labor disputes
Textiles and apparel value chain	<ul style="list-style-type: none"> • Undertake a scheme to aggregate small, informal processing houses to make environmental investments affordable, linked to stepped-up enforcement (plus, e.g., minimum operating size requirements) 	<ul style="list-style-type: none"> • Dramatically improve contract dispute resolution • Reform environmental sustainability framework • Address power shortages

	<ul style="list-style-type: none"> • Attract foreign investment in specific segments with high potential spillovers for the overall value chain (e.g. processing, trimmings) • Reorient all schemes to subsidize capabilities instead of capital • Rationalize support schemes and remove or substantially enlarge size thresholds • Reform the structure of policy dialogue, e.g., with process for incremental scheme adjustment, technical committee reform • Remove anti-dumping duties on PSF 	<ul style="list-style-type: none"> • Reform the overall framework of support schemes for SMEs
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93. **One way to do so may be to introduce greater elements of time, adjustment, and trade-offs into policy formulation and enactment.** To date, many policies in the sector, at the Central or State level, have tended to be in the form of final outcomes and absolute decisions on principle, versus more time-bound, incremental changes. The contention over a possible National Fibre Policy in 2011–2012 was perhaps an example, ending in gridlock over an optimal excise price on fibers; the time-bound window for fittings would be an example of a more productive process. Moreover, implementation needs stronger monitoring, involving Government, the private sector, and civil society representatives in *regular* (as opposed to ad-hoc) forums. These should also ensure the continuous improvement of the schemes themselves; at present, if a scheme is overly complicated, or overly generous, or for other reasons not achieving its desired result, the revision process is lengthy and difficult. Overall, the policy process needs to be more about the timing and phasing of change, give-and-take between competing interests, and ongoing refinement, than a matter of one-off decisions.¹³² To this end, the Government needs to play a more proactive role in facilitating compromises among competing interests, rather than assume the position of sitting in final judgment between them. Without such a process, the textiles and apparel value chain is likely to continue to miss its potential for growth.

94. **A pre-condition for doing so, however, will be ensuring the underlying stability of the principles behind the policies, and of bargains made in policy formulation.** It may go without saying, but if policy bargains cannot be respected in the course of implementation, then building the capacity to make such bargains is liable to be fruitless. As has been noted of bureaucracy and policy dialogue in the United States that if those unhappy with a deal can simply appeal it elsewhere, no participant will have a strong incentive to engage in difficult

¹³² The India Backbone Implementation Network (IbIn), a recently launched initiative of the Planning Commission of India and the private sector, is an attempt to spread the capabilities to undertake just such processes.

discussions.¹³³ The result is that stakeholders will organize, as now, principally around obtaining subsidies, and seeking to obtain satisfaction through the judicial process.¹³⁴ Without the capability to make, enforce and stick to policy compromises, with predictability and an absence of sudden policy responses,¹³⁵ the reform agenda for the sector is unlikely to be realized.

95. **On the other hand, the key reforms cannot wait for these structural changes to occur.** Changing the form and substance of policy interaction is a long process: even in a much smaller country, such as Malaysia, and with the Prime Minister's weight behind this sort of reform, enacting it is expected to take anywhere from five years to a decade. In the interim, the global apparel industry is shifting, and opportunities today may not exist in the future. As such, the goal should be to change "being" by "doing," as that same Malaysian effort describes it: to achieve results now, but achieve them in a new way, and in so doing to plant the seeds for more fundamental change in the long term.

96. **To return to the agenda set out above implies tackling, first, the opening up of the fabric sector, customs processes, dispute resolution (for clarifying tariff lines disputes), and processing aggregation.** The Government could set a series of goals for multiple intermediate actions and pursue them one-by-one, through a process that builds trust. To gain momentum, such an initiative should avoid the most contentious issues at first, such as fiber policy, and concentrate on areas where a compromise may be within reach, for example in fabric, or in areas where agreement in principle exists but operational details are proving difficult, such as customs operations. This effort could be complemented by tackling one or two initiatives that require policy innovation—such as the green aggregation of the processing industry and the reform of schemes to support capabilities—before moving on to more difficult terrain, such as contract enforcement for buyers and agents (further rationale for this sequence is described below).

97. **Importantly, any dialogue process would have to see as its goal not merely formulating and enacting a policy, but jointly monitoring its impact and conducting iterations afterwards.** The process mandate, in other words, should be for six years rather than six months. The devil will be in the details, to avoid "talk shops," but such processes do not lack precedent, and the capabilities to undertake them are being diffused through the India Backbone Implementation Network (IbIn). If approached successfully, however, the seeds would then be planted for a larger, more ambitious effort, one that will doubtless be difficult and bound to

¹³³ James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1989).

¹³⁴ In fact, the recent upsurge in judicial activism may be dangerous to the long-term health of policymaking in India for precisely this reason. Wilson documents the effects of similar judicial developments in the US from the 1960s onwards, with consequences on policymaking that are still felt today.

¹³⁵ For example, the newly released sector skills plan for Textiles contains as one of its first proviso the Government's right to halt any project. Giving prominence to such clauses is unlikely to further the type of planning and risk-taking needed for stakeholders to make substantial compromises with each other.

encounter resistance but which is the only way forward in seeking to secure the tens of millions of jobs that are at stake.

SECTION 4: CONCLUSION

A. *THE POTENTIAL OF CHANGE*

98. **The differential in exports between high- and low-growth scenarios is vast, amounting to a two-fold difference in exports in 2021.** Extending the targets contained in the Twelfth Plan, as a high scenario, would result in approximately US\$110 billion in exports in 2021. In contrast, the moderate projections by industry would result in approximately US\$60 billion in that year, while continuance of recent five-year rolling growth rates for the next decade would result in growth to only around US\$50 billion. Of course, an even lower figure would result from the most recent year's trends, in which growth was static, leaving exports in the range of US\$25–30 billion. The differences among these scenarios are meaningful fractions of India's current account deficit in 2013, though, as noted repeatedly above, higher exports will require higher imports. Nevertheless, the *difference* between status quo and the full potential of textiles and apparel in India is equivalent to a multiple of the size of the whole industry today.

99. **While net job impacts are impossible to estimate, the industry's jobs would be more secure, sustainable, and at higher incomes.** Given the industry's existing low productivity and low utilization, this more rapid growth would be unlikely to lead to the creation of a vast number of net new jobs. However, the existing workforce in the industry would become more productive, with the likelihood of substantial increases in income levels. Given that the industry employs tens of millions, increasing income in these jobs would give a large boost to inclusive growth. Moreover, the counterfactual is not the maintenance of these jobs, but the likely shrinking of employment, as stagnant or declining industry revenues coincide with moderately increasing productivity growth and the continuing substitution of capital for labor.

100. **An increase in global market share to match China's current presence would create exports worth just over 10 percent of India's GDP today.** As noted above, as China rotates out of the textiles and apparel industry, no other country is alone capable of picking up its market share except—at the limit of ambition, and over the long-term—India, which has the potential scale and the presence of the full value chain. If it could do so, this would imply exports growing to some US\$250 billion, China's exports in 2012. Indeed, if global trade in textiles and apparel continues to grow at roughly 7 percent per annum, this absolute value would be less than 10 percent of the global market in the mid-2020s. On the other hand, it would represent over 10 percent of India's nominal GDP today (though, again, imports would rise too). Such growth would likely catalyze even more substantial growth through effects on the non-export value chain, the stimulation of local capital goods in textile machinery, and induced effects through higher incomes across the industry. Achieving such an ambitious goal is, however, likely to be

impossible without—at the very least—coordination and collaboration to execute the ambitious reform agenda, both within and beyond the textiles and apparel industry.

101. **Realistically, much of the impact will be concentrated in States with existing concentrations of industry, until domestic fragmentation is decisively overcome.** Even in the most ambitious scenarios, it remains likely that investment and production will continue to locate in the traditional centers of the industry in the short to medium term. The common theme throughout this study has been the importance for apparel and textile firms of, first, collective action, whether in securing and dividing orders, purchasing in bulk, or engaging in policy dialogue; and, second, the easy availability of key inputs, which may not mean having suppliers collocate but does imply being near others who know where to find supplies, and the suppliers themselves being easy to find. Moreover, firms need to be easily identified and reached by global purchasers: even in China, only the construction of extensive high-speed rail, allowing inland firms to reach coastal buyers easily and frequently, has been able to shift production away from the coast.¹³⁶ Until a strong base of intermediaries is in place, able to transfer the trust and connection of local clusters across State borders, these connections will remain localized in existing areas.

102. Hence, though some firms may shift to second-tier cities close to the major metropolises—and the two largest clusters in the country, near Tirupur and Surat, are already in second-tier cities—they are unlikely to move to virgin territory, at least until states with existing industries are entirely saturated. On the other hand, those states do require new pools of industrial labor, and there is anecdotal evidence that almost a fifth of the entering labor pool in Tamil Nadu's textile industry is from low-income states, especially Odisha.¹³⁷ Even if investment does not take place in low-income states, the gains from the positive reform scenarios are likely to accrue to the residents of those states; even if such growth is not inclusive among geographic units, it will be inclusive among people. On the other hand, once the market is integrated—such that a firm that moves across a state can retain its customers and its suppliers via trusted intermediaries and be assured of timely deliveries in a reasonable timeframe—then the industry will, as it has in China, naturally move out of high-cost locations into low-income States.¹³⁸ Without integration, cost differences alone have not and likely will not induce investment in other States, no matter the improvements in their theoretical investment climate.

¹³⁶ A Changsha firm reported 50 percent order increases because of improved buyer contact thanks to high-speed trains. Keith Bradsher, "Speedy Trains Transform China," *The New York Times*, September 23, 2013.

¹³⁷ Sonderegger and Mehta, "Tamil Nadu Manufacturing Skills Delivery."

¹³⁸ A few interviewed garments firms (December 2013, Gurgaon) expressed interest in setting up factories in Bihar, because of market access (Bihar and its neighboring states and Nepal), the availability of laborers, the absence of a textiles and garments policy, and the willingness of the Government of Bihar to engage in a meaningful dialogue with the industry on such a policy. However, while the investment climate in Bihar has radically improved during the last decade, investors are still reluctant to invest in assets—that is, land and infrastructure.

B. *PATHWAYS TO IMPLEMENTATION*

103. **It would be wishful thinking to presume that such reforms will lack opponents.** The reforms described in Table 8 are not without cost. They will be vigorously resisted by inefficient industries that are currently protected, by small firms that fear growing large, and by the informal interests that benefit from restrictive and discretionary regulatory regimes. The more other stakeholders are uncertain about the dynamics of long-term growth, the more likely they will be to opposing reforms. For example, cotton growers have in the past opposed reforms that would make manmade fibers more widely available, for fear they would depress cotton prices. As noted above, with sufficient vigor in the reforms, the opposite might in fact occur: the apparel industry, liberated to take share in garments that use synthetics, would increase cotton use across the value chain. However, it is wishful thinking to believe that cotton farmers, or other such interests, will be easily persuaded to take such risks, necessitating a deep, continuous process of consensus building, and, most importantly, building credibility through action.

104. **But a developmental coalition exists that could propel change.** There are a wide range of interests that would support change, beginning with the millions employed in the industry. A number of States have economies highly dependent on the value chain, and could be allies in reform. The loosely organized, dispersed producers at present operating well below capacity could be strong allies in a process of reform, if given a credible vision of how that reform will benefit them. Most of all, there are the growing and capable firms across the value chain, which, if strengthened within the industry instead of penalized, could create an increasing constituency for change. It will be difficult to piece together this sort of coalition, but it is necessary for the long-term health of the industry, and could be twinned with a careful sequencing of reforms that escalated from the simpler to the more difficult, aiming to strengthen the developmental coalition as it progressed.

105. **Sequencing and credible commitment to policy continuity will be important to avoid strong opposition to reforms.** For instance, inefficient mills, many in poor financial condition, would resist duty and hassle-free import of fabric: some might be brought on board if the scheme starts small and gradually expands, and if such mills are also eligible for interim support. As a first step, various policy options for facilitating the easy sourcing of (manmade fiber) fabrics should be identified and evaluated carefully, both in terms of their consequences for different parts of the textiles and apparel value chain as well as their wider economic impact. In the end, however, this is likely to require a difficult decision, though one against a relatively small interest, so long as it is not seen as a threat by the broad mass of cotton weavers. As above, a coherent long-term growth and reform agenda will thus need to be communicated aggressively.

106. **An industry in which the balance of interest is shifting to growing, capable firms, as opposed to small, protected ones, would then be a strong partner to engage in economy-wide reforms, such as continual customs reform.** The price of such reform would have to be far more stringent penalties for violations of regulations, enough to threaten the continued

operation of weak firms, which more capable and growing firms would be willing to accept; in exchange, young firms and those with clean track records—regardless of their size—should have access to green channel facilitation. Such full implementation of a risk management system would, however, require sustained consensus and trust building between industry and the Customs Service. Without this, yet more notices without ground-level buy-in would likely be sabotaged.

107. **The most significant and enduring changes, though, must be fundamental: the GST, the end of checkpoints, and the end of paying firms to stay small.** Finally, an industry that was globally open, with a healthier balance among its constituents, shifting continually towards more medium-sized and capable firms, would, hopefully, have the type of weight in policy dialogue that could shift broader reforms. In that case, aside from the problems of electricity and space, the focus of Government and industry should then shift strongly towards promoting broader reforms: namely, the GST and accompanying end of check posts; and the sustained reform of cross-industry schemes that pay firms to stay small.

108. **In the best scenario, these changes would combine to restructure the industry's relationship with government and society, facilitating continued change.** If this agenda can be achieved, a vibrant, strong, connected, and globally competitive textiles and apparel industry in India could drive growth and rising wages. Even if an initial set of reforms did not achieve all its goals, an enhanced process of policy dialogue could lead over time to more long-lasting and profound changes. Namely, the forms and institutions of collective action would, it might be hoped, change their “being” through doing, becoming more representative of growing and capable firms, and more trusted partners in the rest of society. That would then smooth the path for future reforms, allowing for more rapid adjustment and hence the type of endogenous policy learning that is the surest route to long-term growth.

109. **Change needs to start now. The window of opportunity is closing quickly.** There is little time to waste. Anecdotal evidence suggests that the purchasing agents who shape global production are passing India by. This, after a few years of intense interest in the country in which they sought alternatives to China. As such, reforms to the business environment facing the textiles and apparel industry are urgent, before increasing scale and cluster economies in competitor economies increasingly lock in the shape of the industry for the next decade. On the other hand, such reforms are within reach, and if the journey starts now, if the hard reforms are made and the trust and cooperation built that will lead to policy learning over decades, by 2030 India could aspire to dominate the world textiles and apparel industry much as China does today.