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Reigniting the Manmade Clothing Sector in India
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Reigniting the Manmade Clothing Sector in India

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Abstract

The clothing sector have traditionally been the most employment-intensive sectors in India. Despite the promise that the sector holds, the performance has stagnated in recent years. Since 2011, the real output of the textile sector has barely grown whereas that of the apparel sector has witnessed a significant slowdown. On external front too, the global market share has declined sharply post-2014 and have now been overtaken by Bangladesh and Vietnam. Our paper attempts to explain this recent decline and finds that the decline in India's clothing sector stems largely from its polyester-based clothing segment. More importantly, this decline does not emanate from any exogenous shock but has been a result of domestic policy choices made by India. At a time when domestic PTA production, a key polyester input, was declining, the government responded by imposing stiff anti-dumping duties on India's PTA imports. This was later followed by hike in import tariff on PTA. Both these measures led to an increase in market concentration in the production of PTAs that are essential for the sector to grow. Consequently, the manufacturing cost of polyester increased substantially which made our exports uncompetitive in the global market. As polyester is a key input for the man-made apparel segment, our productivity in the man-made apparel sector declined as well. More importantly, we find that this fall in productivity is largely accounted by top 10 per cent of the most productive man-made apparel plants.

Keywords: Manmade Fibres, Polyester Value Chain, Market Concentration, Textile and Apparel Sector

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1. Introduction

Nearly every successful economic growth take-off in post-war history in East Asia has been associated with rapid expansion in textile and apparel exports in the early stages (Economic Survey, 2016). In China, in just five years from 2001-2006, labour-intensive clothing and textile exports enabled the creation of 70 million jobs for workers with primary education (Los et al., 2015). In the case of India, increased textile and apparel exports explain the conversion of about 800,000 jobs from informal to formal between 1999 and 2011, representing 0.8 per cent of the labour force (Artuç et al., 2019).

However, despite the promise that the sector holds, the performance of the sector has stagnated in recent years. Since 2011, the real output of the textile sector has barely grown whereas that of the apparel sector has witnessed a significant slowdown (see Figure 3).

The situation on the external front is even more concerning. Our global market share has declined sharply post-2014 as we have been losing market share to global competitors and have now been overtaken by Bangladesh and Vietnam in recent years.

What explains the turn of events in India? Of course, there are some long-standing structural bottlenecks- fragmented value chain, complex labour laws; high logistical costs; land market frictions; high power costs—to name a few, that adversely hamper the productivity of the sector. However, these issues, though important, have existed for decades now and cannot fully explain the declining performance in recent years.

There have also been some external shocks in recent years. The era of hyper-globalisation that the world witnessed since the early 2000s is over and global trade is on a decline post-2011. Though these developments have affected the sector, it still cannot explain the decline fully as our competitors, facing the same adverse shocks, have continued to perform well in the external market.

One key India-specific shock has been the twin-balance sheet crisis that the financial sector faces. Post-2015, as the RBI forced the banks to come clean on their balance sheet, the NPAs of the banks swelled and it led to a sharp decline in credit flow to the commercial sector. Indeed, this is an important challenge as it greatly affected the fresh investments that the

firms could undertake. However, as discussed earlier, the issues facing the clothing sector predate the bank clean-up process.

So, what explains the decline in Indian performance?

First, we find that the decline in India's clothing sector stems largely from its man-made fibre-based sector relative to the cotton sector. The competitiveness of the sector particularly in the international markets is hindered by India's weak footing in the man-made fibre segment which creates a mismatch in the world markets where the demand for manmade fibre-based cloth dominates the demand for natural fibre-based clothing sector demand. This is not to say that the cotton sector has not witnessed a decline, but the decline is found to be muted relative to the man-made sector.

Second, the man-made clothing sector faces certain unique problems in its value chain, particularly in polyester which dominates the man-made fibre segment in India. The problems start at the very first level of the polyester value chain, the domestic production of PTA, the key intermediary input for the man-made fibre industry, which stagnated after 2010. This was followed by the Indian government imposing significant anti-dumping duties on PTA imports from major source nations as well as a hike in the import tariff rate. As a result, the domestic availability of PTA declined, their prices rose even when it was declining globally. These policy measures pushed up the cost of production for the man-made fibre producers which only affected the productivity of the downstream firms but also their ability to compete globally.

Third, as man-made fibre is the key input for the apparel sector, we find that the apparel sector loses its productivity and global market share due to the bottlenecks upstream of the value chain. Again, we find that the problem is much more severe in the man-made fibre apparel segment relative to the cotton sector.

The remainder of this study is organised as follows: Section 2 discusses the history of India's clothing industry and why this sector is so important to our economy. Section 3 describes the performance of the clothing industry in recent times in domestic production and exports. Section 4 analyses the textile sector and the role of manmade fibres in explaining its recent performance. In section 5 we discuss the cascading effects of the performance of manmade

fibre production on the manmade apparel segment. The government's policy response to the challenges in the clothing sector is documented in section 6. We conclude our study in section 7.

2. Textile and apparel sector in India- why it matters?

The clothing industry in India has a rich and illustrious past with there being a fair agreement that it is the fountainhead of the cotton cloth industry. The quality of the cotton cloth produced was fabled with several historical references of the cloth being so fine that it could be drawn through a finger ring. Till up to the 19th century, India was a monopoly for raw as well as manufactured cotton goods (Gandhi, 1930). The decline in the cotton industry by early the 19th century can be attributed to six factors. The first was the invention of the power loom and other mechanical techniques which made the production of fine cotton cloth cheap in England. This led to the export market for Indian cotton cloth to shrink. The second factor is that despite the higher efficiency of the mechanized production techniques in England, the handmade Indian cotton cloth could still be sold at a profit in England but the commercial policy of the British Raj which discouraged the manufacture and export of cotton cloth in India through very high import duties. The third factor was the systematic policies of the British Government which promoted the sale of British-manufactured cloth in the Indian markets. The fourth factor was the usurious treatment meted out to the Indian weavers by the East India Company which led to them abandoning their profession and shifting to cotton growing. The fifth cause was the British policies which encouraged the production and export of raw cotton which further encouraged traditional weavers to shift to cotton cultivation. The last and most enabling cause of the decline of the fabled cotton industry of India was the revolution in transportation technology including railways which made it possible to transport imported British Manufactured goods over a long distance at low cost and at the same time transport cheap raw cotton from the interiors of India to England for their manufacturing needs. As a result of the colonial policies, between 1747 to 1822, India was reduced from the status of a cotton goods manufacturer to a raw material supplying colony. While the traditional domestic manufacturing of textiles crumbled, British merchants figured that they could save on the freight to transport raw cotton to England and ship back the transformed goods by setting up power looms in India. The first cotton mill was set up using British capital in 1818 at Fort Gloster, Calcutta. However, the mill sector took only off after the exit of the East India Company from India with the encouragement of the British Government. The period post-1856 saw the rapid rise of the mill sector which was driven to a large extent

by pioneering Indian Entrepreneurs and led to the emergence of the Indian Cotton Mill Industry. However, the cloth produced in these mills was coarser and was no match to the handmade cloth produced in the yesteryears of the cotton industry before the emergence of British Influence (ibid). The cotton mill sector continued to grow robustly contributing significantly to employment generation, national income, and foreign trade. The dominance of the mill sector continued till the adoption of inward-looking industrial policies in the early years of Indian independence which placed a particular emphasis on the decentralized sector comprising handlooms and power looms. In 1951, the mill sector accounted for 78.6 per cent of cloth output and the remaining output was accounted for by the decentralized sector. The decades that followed saw the waning of the mill sector which in 1978 accounted for only 44.3 per cent of production. The decline of the mill sector also resulted in the weakening of Indian textile exports. In 1948-50, India accounted for 11 per cent of world textile exports which declined to only 2.4 per cent by 1978. Moreover, this period also witnessed a decline in the availability of cotton cloth for home consumption (Saha, 1982). The revival of the textile sector had to wait for the National Textile Policy of 1985 followed by the New Economic Policy in 1991. However, none of the policies that followed have been able to restore India's position in the world textile markets at the time of its independence.

Fast forward to the present time, the clothing industry comprising textiles and apparel has grown beyond cotton textiles and continues to be critical to the Indian Economy. While textiles and apparel may not generate as much value-added as high-skill manufacturing or services, they have traditionally been the most employment-intensive sectors in India. More significantly, they provide low-skill jobs that are suitable for the large workforce in India.

In terms of numbers, the sector's contribution to manufacturing output and manufacturing sector Gross Value Added (GVA) during the period 2011-2019 has averaged 9.5 per cent and 11.9 per cent³ respectively. However, the sector is the biggest employer after agriculture and employs 45 million people directly and 60 million people in allied sectors (Economic Survey, 2020). According to the Sixth Economic Census conducted in 2012-13, the sector accounted for 30.1 per cent of all labour employed in manufacturing and 8.4 per cent of all labour employed in non-agricultural activities and employs 38.1 per cent of all women

³ National Accounts Statistics, 2021

employed in manufacturing and 11.9 per cent of all women employed in non-agricultural activities.

Although there has been some decline in the labour absorption capacity of these two sectors post-2007, the sector still accounted for more than 20 per cent of the formal jobs in the manufacturing sector in 2018 (Figure 1).

What sets the employment generated by this sector apart is that it favours the employment of women. This is particularly significant for India given that it has witnessed low and declining female labour force participation levels. While the share of women in the total workforce of the non-textile and non-apparel formal manufacturing sector was an abysmal 15 per cent in 2018, the corresponding number for the apparel and textile sector stood at an impressive 33 per cent (Figure 2). Above all, the backward linkages of the sector to the rural economy give huge opportunities to millions of farmers, artisans, handloom, and handicraft manufacturers (Economic Survey, 2018).

Figure 1. Share of Textile & Apparel in Registered Manufacturing Employment

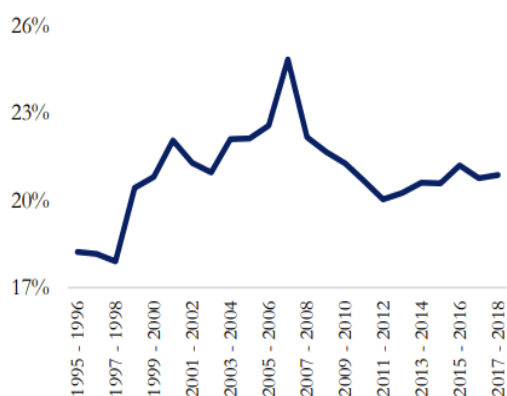
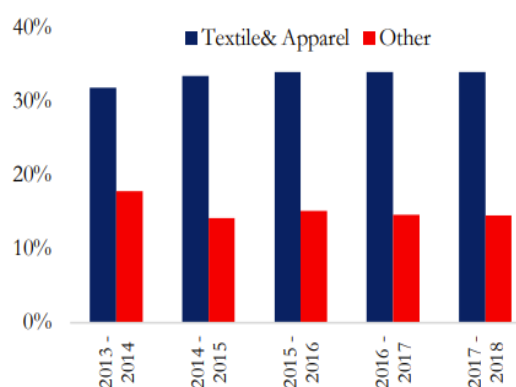


Figure 2. Share of Women in Registered Manufacturing Workforce



Source: Authors' estimate based on ASI Survey.

On the external front, too, the sector has contributed substantially over the years with the export share of the sector accounting for 10.6 per cent of total exports in 2020-21 and has generated an average of \$29.3 billion of net foreign exchange annually between 2011-2021⁴.

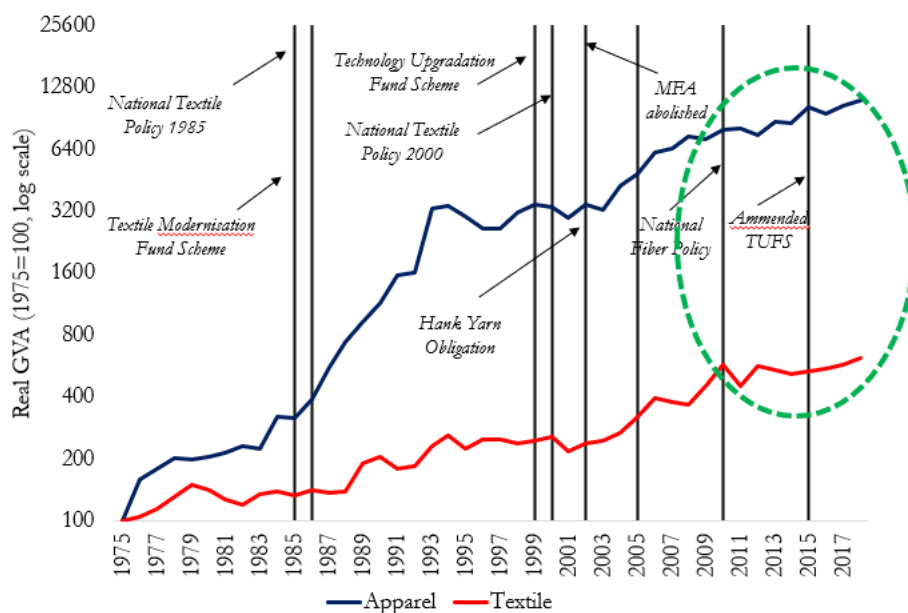
⁴ Export Import Data Bank, Department of Commerce, Ministry of Commerce and Industry.

While the contributions of this sector to Gross Value Added, Employment and Exports are adequately clear, the sector has an important role to play in aiding an economy's transition out of agriculture. The sector is the third largest generator of non-agricultural jobs for rural India and generates 25.6 per cent of all rural manufacturing jobs. Thus, this sector, with its significant contributions to manufacturing employment generation, contributes to not only decentralized employment generation but also helps move workers out of the agricultural sector which has a low GVA per worker of just Rs. 54707⁵.

3. Performance in recent times

Given the significance that the sector holds, it comes as no surprise the policy attention that has been accorded to it by governments over time. However, despite these policies, the performance of the sector has stagnated in recent years. Figure 3 below presents a timeline of important policy interventions by the government for the textile and apparel sector and the real GVA of the sector over time. As can be seen, since 2011, the real growth of the textile sector has virtually been zero. The apparel segment, though performed relatively better than textile, has witnessed a slowdown as well. On the external front as well, both sectors witnessed a sharp contraction in their exports post 2014 as seen in Figure 4⁶.

Figure 3. Real GVA of Textile and Apparel Sectors over time

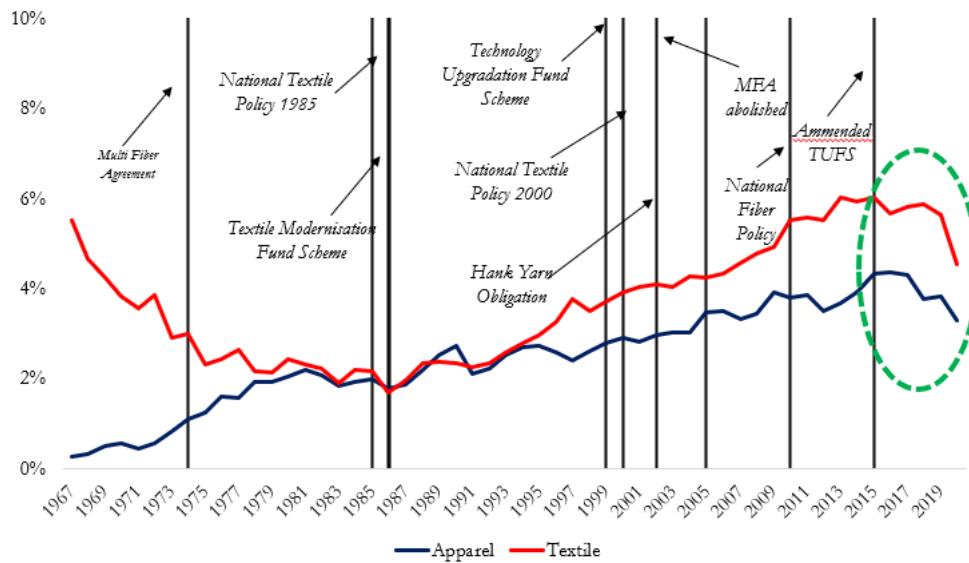


Source: UNIDO

⁵ The value added per worker is calculated using 2011-12 GVA values of Agriculture, forestry and fishing, and Manufacturing and employment numbers from Census 2011.

⁶ The contraction is less pronounced if the WTO trade data is used instead.

Figure 4. India's Share in Global Textile and Apparel Exports over Time

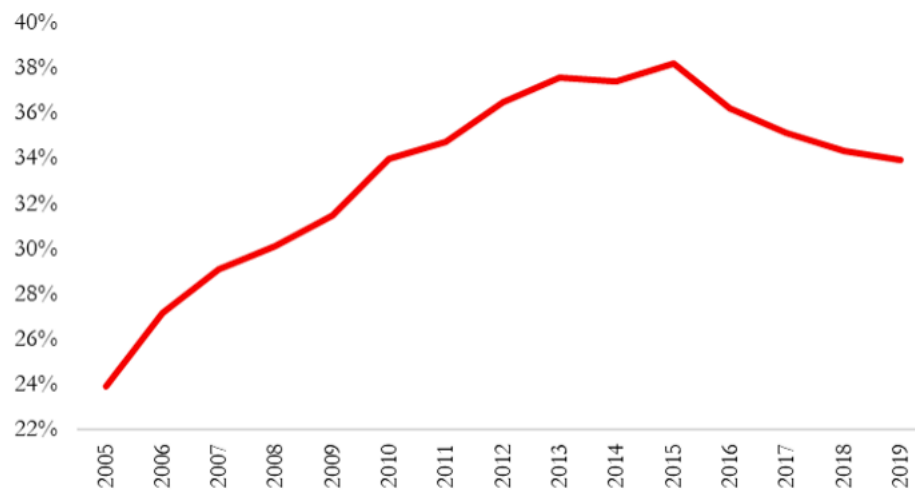


Source: UN COMTRADE

These developments are concerning and require urgent attention, especially at a time when our economy has been slowing down and unemployment levels are rising. The high-skill manufacturing and services sector which fueled much of India's growth acceleration is unlikely to meet the twin objectives of generating growth and jobs given the low labour intensity of the sector.

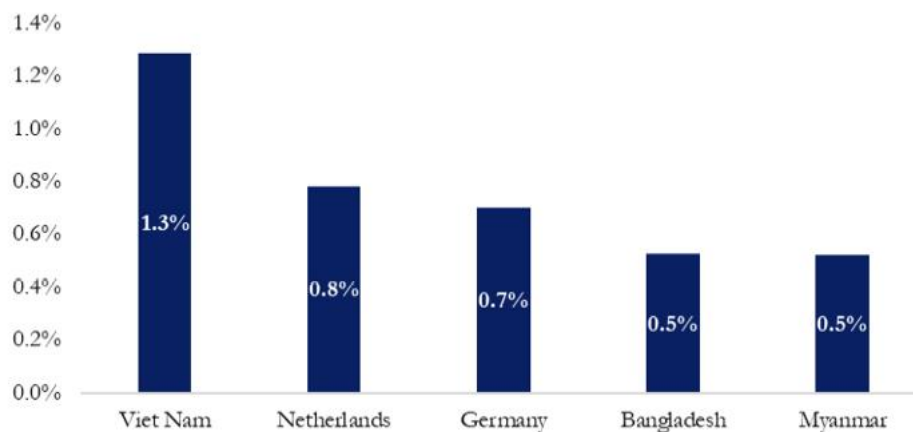
Addressing these concerns is specifically important from the external sector perspective. As wage levels rise in China and it cedes space in the low-skill manufacturing sector, especially textile and apparel, there is an opportunity for India to promote textile and apparel exports. As can be seen in Figure 5, since 2015, China has lost almost 5 per cent market share in world exports of textile and apparel products. This translates into roughly \$34 billion. However, India, so far, has failed to capture this space. Figure 6 shows the top five beneficiaries of China's loss in market share in textile and apparel exports between 2015 and 2019. Interestingly, India has lost out to even advanced economies like Germany and Netherlands. India must take remedial measures at the earliest to make sure that it does not lose out in the coming years.

Figure 5. China's Share in Global Textile & Apparel Exports



Source: Authors' estimate based on WTO data.

Figure 6. Top Five Beneficiaries of China's Loss in Global Exports Share in Textile & Apparel



Source: Authors' estimate based on WTO data.

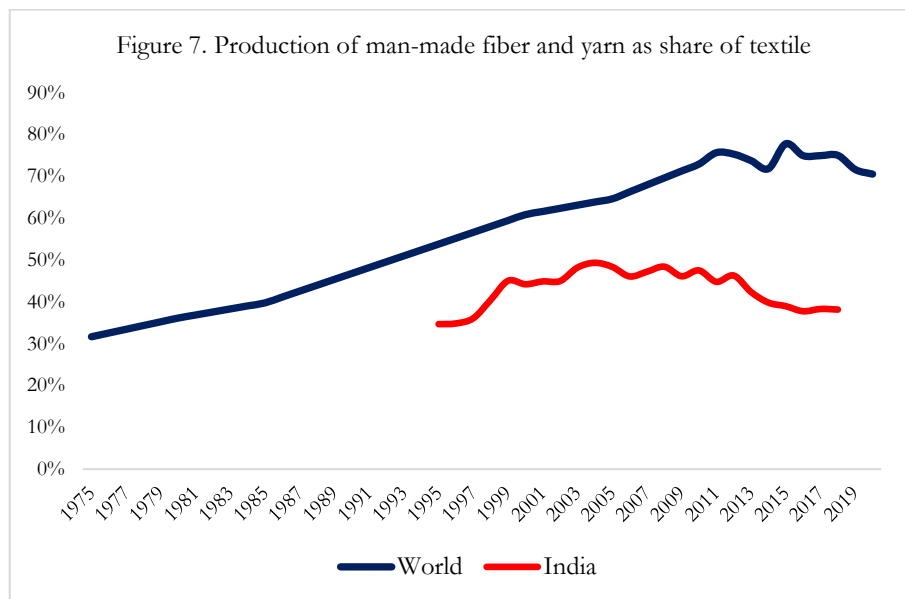
4. Decoding the problem

To understand the declining performance of the textile and clothing industry, as highlighted earlier, we look at the two sectors independently. We first start by looking at the textile sector, identify the challenges and then move to the downstream apparel sector to understand the cascading effect of these challenges.

4.1 The global shift from cotton to man-made textile

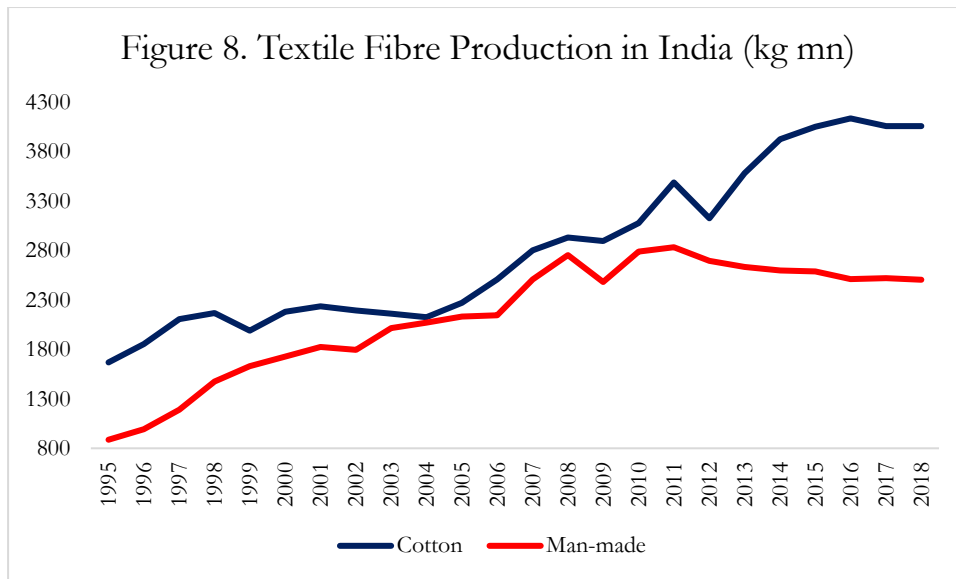
The global textile market, which traditionally used to be cotton dominated, changed fundamentally with the advent of manmade fibre. Manmade textiles have been a very recent entrant to the immensely long history of textiles but given their several advantages over natural textiles have now come to dominate world textile production. When compared with cotton, these fibres are cheaper, more durable, maintain creases, and allow greater flexibility in terms of design.

Manmade fibres/Yarns overtook natural fibre/yarns to produce textiles in the early 1990s. However, India seems to have bucked this trend and continues to remain dominated by natural fibre (Figure 7). Man-made fibre accounted for more than 70 per cent of global textile fibre production. In India however, the share of man-made fibre peaked at 48 per cent in 2004. Since then, the sector has witnessed a sharp decline in production and the share declined to 38 per cent by the end of 2020.



Source: Office of Textile Commissioner and CEIC

The decline in man-made fibre production largely explains the slowdown in the textile sector that we highlighted earlier. As can be seen in Figure 8, cotton fibre production continued to increase even when the man-made fibre segment was witnessing a decline.



Source: Office of the textile commissioner.

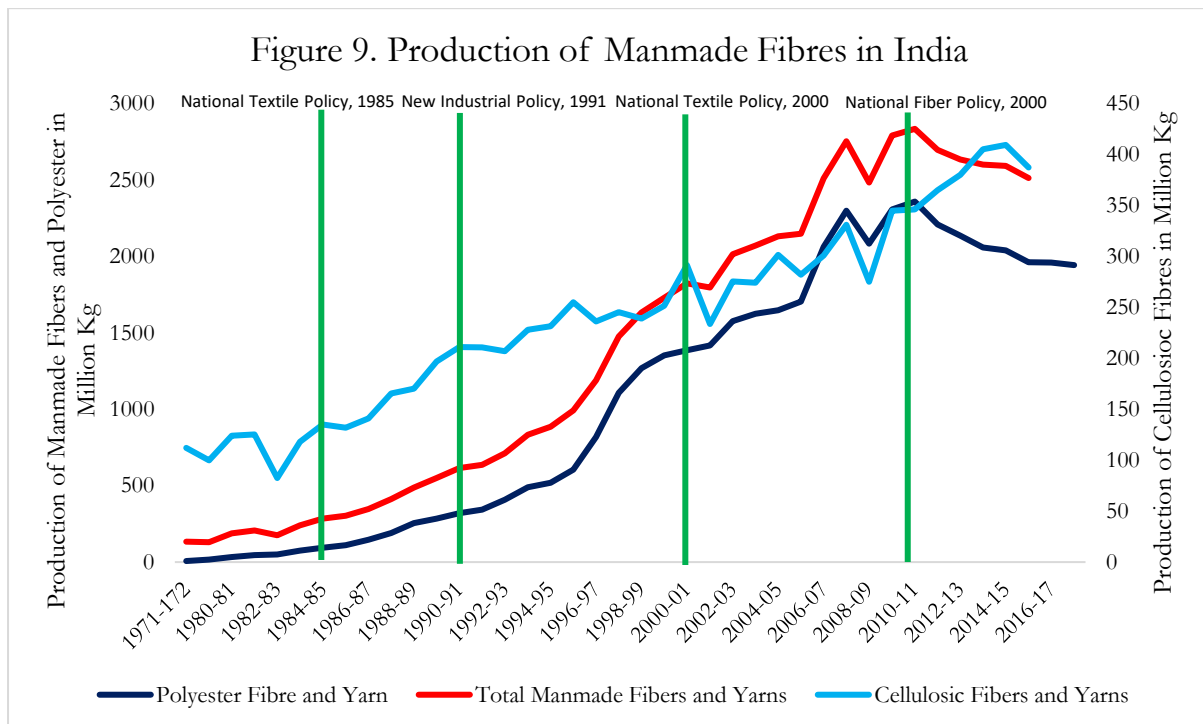
Before we try to understand the issues leading to the decline that we see since 2011, we look briefly into the history of man-made fibre production in India and try to understand why the growth of the sector was not as spectacular as in the rest of the world.

4.2 A brief history of man-made fibre production in India

The commercial production of manmade fibres began in India with the setting up of Travancore Rayons Ltd. in Kerala which was the first rayon factory in Asia("Better Tomorrows Await Travancore Rayons," 16th June 2014). Cellulosic fibres dominated manmade fibre production in India till the early 1980s. Here, again India was a decade behind the rest of the world in making this transition within manmade fibres/yarns. The spectacular growth in synthetic fibres/yarns was driven by polyester. The first Polyester Staple fibre plant was set up in 1963 by Chemicals and Fibres of India Ltd. (Invista, 2016) and the first polyester filament yarn was produced in India by Nirlon Synthetic Fibres & Chemicals Private Ltd. in 1967⁷. However, the sector remained small and highly protected in the pre-liberalization period. The small scale of operations of the plants resulted in high production costs which necessitated protection by the government from foreign competition on the grounds of this being an indigenous export substituting industry (Chakravarti, 1982). Another factor that led to the slow progress of manmade textiles was the implicit policy bias towards cotton textiles. For example, cloth mills were not allowed to produce pure manmade fibre fabrics and high excise duties. A major steppingstone for the growth of the manmade textile

⁷ Website of (Chemicals & Petrochemicals Manufacturers' Association- http://cpmaindia.com/pfy_about.php

industry was the Textile Policy of 1985. The policy provided full fibre flexibility and aimed to keep pace with the changes in the trend towards the use of durable synthetic and blended fabrics and the demand for these to be available at lower prices (Eapen, 1985). The drastic policy shift brought in by the Textile Policy of 1985 was further bolstered by the Industrial Policy of 1991 (*Report of the Expert Committee on Textile Policy*, 1999). The most significant improvement was seen in the production of polyester yarn and fibre post-1985. Between 1985 and 1991, Polyester production increased 3.6 times and from 1991-2000, production increased 4.2 times. The National Textile Policy of 2000 continued to maintain the fibre-neutral policy of its predecessor but did not manage to generate spectacular increases in production. From 2000-2011, polyester fibre production increased only 1.7 times. The lacklustre performance of the sector was identified by the Manmade fibre Subcommittee in 2010 and was reflected in the policy recommendation of the National Textile Policy, 2010. Despite the recommendation, there has been a steady decline in the production of polyester which is unlike the pre-2010 period, with the production in 2017-18 being only 0.82 times the production in 2010-11 (See Figure 9).



Source: Ministry of Textile, Govt. of India. (ON939), (ON1259) & Past Issues.

We next look at the polyester value chain and then proceed to decode the factors that could have led to the contraction in the production of polyester staple fibre and filament yarn.

4.3 The polyester value chain

In this section, we describe the polyester value chain to see how the problems in the upstream stages of production can have a cascading effect.

The production of polyester cloth starts with Paraxylene (p-xylene) which is an aromatic hydrocarbon obtained primarily from the purification of crude oil. Paraxylene is the precursor for Purified Terephthalic Acid (PTA) which is the most important input for the production of polyester fibre and filament yarns. Polyesters are produced by the polymerization of PTA and Mono-Ethylene Glycol (MEG), an organic chemical which is the second most important input used in the production of polyesters. The polyesters are processed as staple fibres (PSF) or Filament. Continuous filaments called tow are produced by the melt spinning process and subjected to further processing such as drawing, crimping and spin finishing. PSF is obtained by cutting the filaments into fixed lengths fibres of length similar to cotton fibres. Polyester yarn is produced either by grouping the filaments or by spinning the staple fibres in the same way as cotton or wool yarn is produced. At this stage, polyester fibres can also be blended with natural fibres to combine the desirable properties of both types of material. The yarns are then woven into fabric which is then processed further to improve its quality.

India is the second largest producer of polyester in the World with state-of-the-art production facilities such as the Integrated PTA and polyester production of Reliance Industries Ltd., which is the largest polyester fibre and yarn producer in the world, and Indo Rama Synthetics (India) Ltd. which operates India's largest dedicated polyester manufacturing unit in a single site. However, the weak links in the chain are the sub-sectors of weaving and processing which are extremely fragmented and lack the scale to compete in world markets. This adds to the lack of competitiveness of the apparel sector which too is very fragmented(GOI).

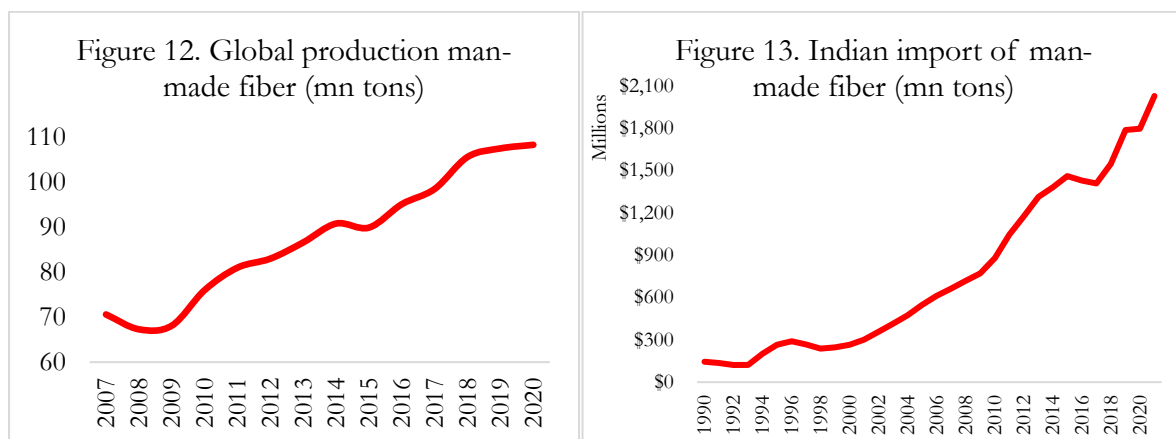
Given, that the textile sector in India has very limited import intensity, any lack of competitiveness in the upstream sectors compounds itself for downstream industries. With this context, we discuss the issue of declining production of polyester staple fibre and yarn (which from hereon will be referred to as polyester fibre for brevity) production in India observed in the years post-2010.

4.4 Understanding the decline in man-made fibre production

What explains the decline in the performance of polyester fibre production post-2011? There have been long-standing structural issues that the manufacturing sector, especially in the apparel and textile sectors, has had to face that are detrimental to the competitiveness of the

sector. These issues, such as complex labour laws, logistical issues and small production scales have been discussed at great length in the existing literature. In addition to these, manmade fibre production in India has faced certain unique structural issues of its own and was discussed in the Manmade Fiber Subgroup Report (2010) released by the Ministry of Textiles, Government of India. The first is the highly concentrated nature of production with the top two producers for each manmade fibre or yarn type accounting for more than 60 per cent of production. The Second was the high cost of debt servicing faced by manmade fibre producers when compared to the rest of the world. These issues, though critical, have been in play for decades now and cannot fully account for the recent decline in the performance of the sector.

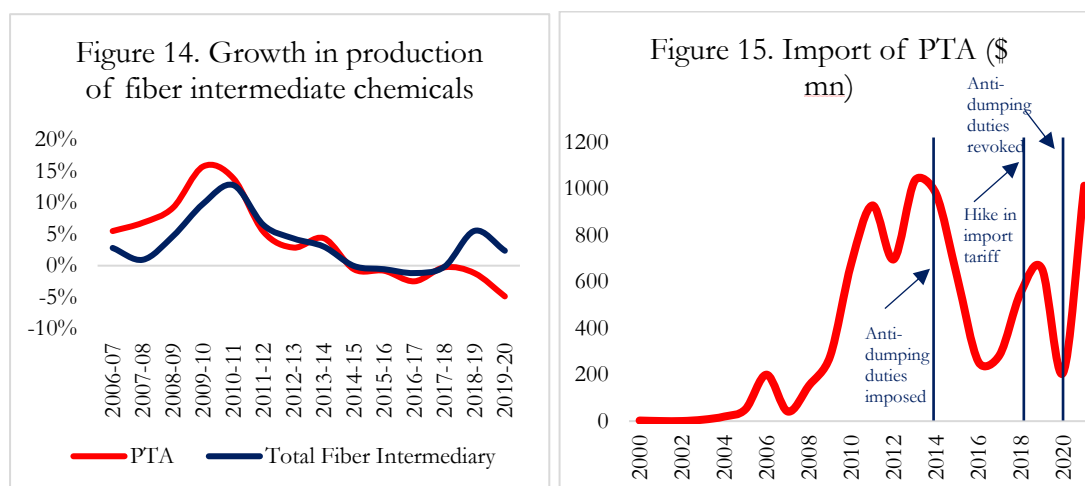
The immediate question that arises is whether the decline that has been observed in India has been a result of global production trends. In Figure 12, we see that the production of manmade fibre in India has declined despite the steady growth in the global production of polyester fibre in the post-2010 period. Additionally, as can be seen in Figure 13, India’s import demand for man-made fibre continues to grow at a robust pace. This implies that the global, as well as Indian demand for man-made fibre, continues to remain high and we cannot attribute the decline in India’s domestic production to demand-side factors.



Sources: CEIC and UN Comtrade

A key reason for the declining production of polyester fibre has been stalled progress in the domestic production of key chemical intermediaries since 2009. As described in the last section polyester fibre production primarily uses two key inputs. The most important input is Purified Terephthalic Acid (PTA) and the second is Mono-ethylene glycol (MEG). Using the unit-level data from the Annual Survey of Industries 2018-19 we find that PTA accounts for roughly 71 per cent of basic inputs while MEG accounts for 23 per cent. The significance of

PTA in the production of polyester is hence extremely significant. However, it is observed that the growth of domestic production of PTA, as well as other chemical intermediaries for polyester production, has witnessed a sharp decline since 2010 and the production has witnessed virtually no growth since 2014 (see Figure 14). As the domestic PTA production stagnated, the demand for imported PTA rose sharply to 140 per cent between 2008-2013. However, since then the trend was reversed, and imports contracted by more than 50 per cent (see Figure 15) only to recover after the reversal of the anti-dumping duty.



Source: Chemical and Petrochemical Statistics at a Glance 2020, GOI.

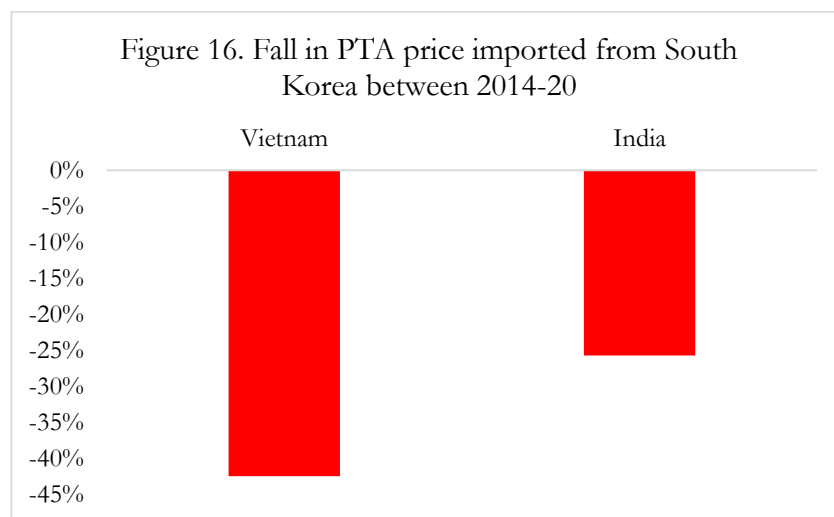
But why should India's imports of PTA be falling precisely at a time when faced with falling domestic production? The answer to the questions lies in two policy interventions that the government introduced in the post-2010 period. First, the government imposed anti-dumping duties in 2014 on PTA imports from major source countries, making the import prices prohibitive. Second, in 2018, the government hiked the import tariff on PTA from 7.5 per cent to 10 per cent which further pushed up import costs.

At a time when the import of PTA was at an all-time high, the anti-dumping duty was imposed based on a petition filed by the two largest PTA producers: Reliance Industries Ltd and Mitsubishi Chemical Corporation India Ltd with the Director General of Trade Remedies (DGTR) in October 2013 for unfair trade practices by major PTA exporters to India. Consequently, an investigation was conducted by the Directorate General of Anti-Dumping & Allied Duties, and it recommended the imposition of anti-dumping duties. The government finally imposed anti-dumping duty on PTA, in the range of \$24 to \$117 a tonne, on imports from China, South Korea, Thailand and the European Union (Thakurta, 2014). Later, in 2016, anti-dumping duties ranging from \$84-\$168 per ton were imposed on PTA imports from Taiwan, Malaysia, Indonesia, and Iran. The duties, when first imposed in

2014, were supposed to be for 6 months. However, the validity of the duties kept getting extended and it was only in July 2020 that the government announced to roll them back.

As these countries accounted for nearly 90 per cent of India's total PTA imports, the anti-dumping measures, followed by tariff hike in 2018, resulted in India's PTA imports contracting by almost 35 per cent between 2014 and 2019. The anti-dumping duty was finally rolled back in 2020, and it has been followed by sharp increase PTA imports.

This was also the time when global oil prices, the key determinant of PTA prices, were falling from a historical high. Crude oil prices fell by almost 42 per cent between 2013-20. However, the imposition of anti-dumping duties followed by a hike in import tariff for PTA, ensured that the fall in PTA prices in India was much weaker relative to global prices. As can be seen in Figure 16, the price of PTA imports from South Korea fell by 42 per cent in Vietnam whereas it declined only by 26 per cent for India.

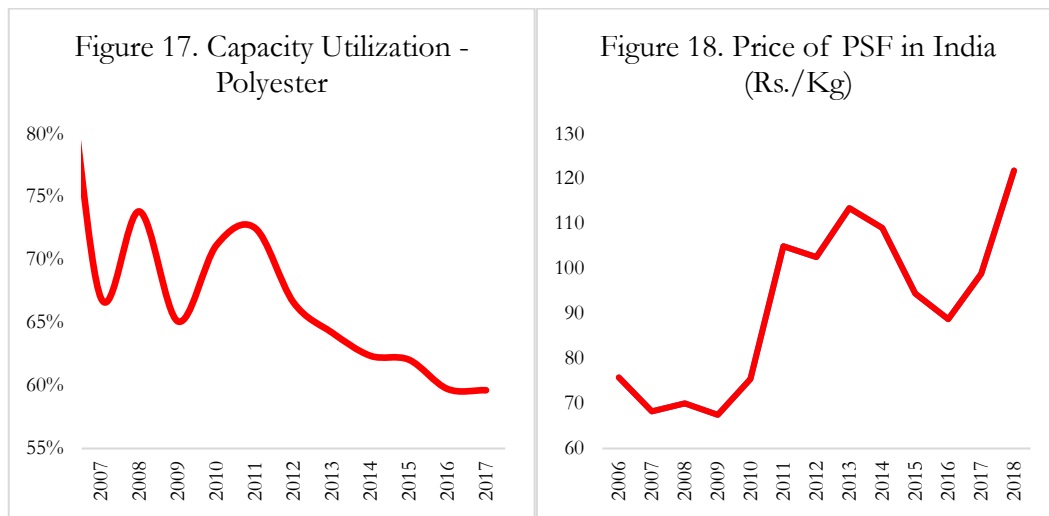


Source: Authors' estimate based on UN Comtrade and WTO data.

The contraction in domestic PTA production followed by the contraction in imports, at a time global PTA prices were declining, made domestic PTA prices relatively more expensive than that of our competitors. The impact of rise in relative PTA prices adversely affected polyester producers who purchased PTA from the open market. In contrast, the integrated PTA and Polyester producers like Reliance Industries benefitted from the duty as they could employ PTA in their polyester production at a significantly more competitive price (Thakurta, 2014). Moreover, the duty increased concentration in an already highly concentrated sector. For instance, the Herfindahl-Hirschman Index for

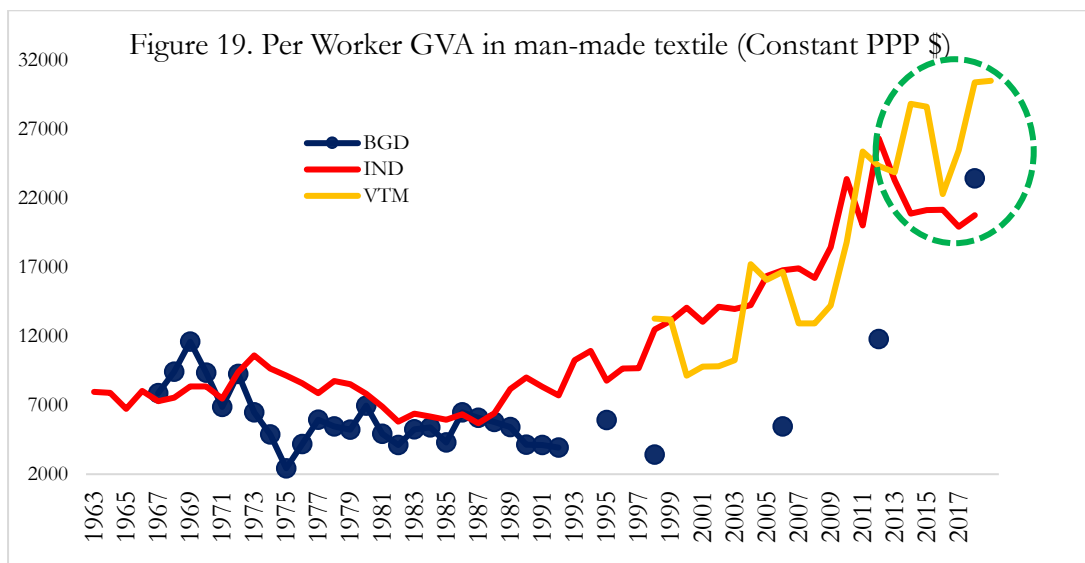
polyester staple fibre production increased from 0.41 in 2013-14 to 0.92 in 2018-19, where a sector with an index greater than 0.25 is considered highly concentrated.

Faced with higher input prices relative to global competitors, the polyester fibre produced by producers procuring PTA from the open market became relatively uncompetitive compared to those firms that produced their own PTA. This resulted in a deterioration of capacity utilization of polyester production as seen in Figure 17. Consequently, the firms had to pass on the higher production costs to the final output (see Figure 18).



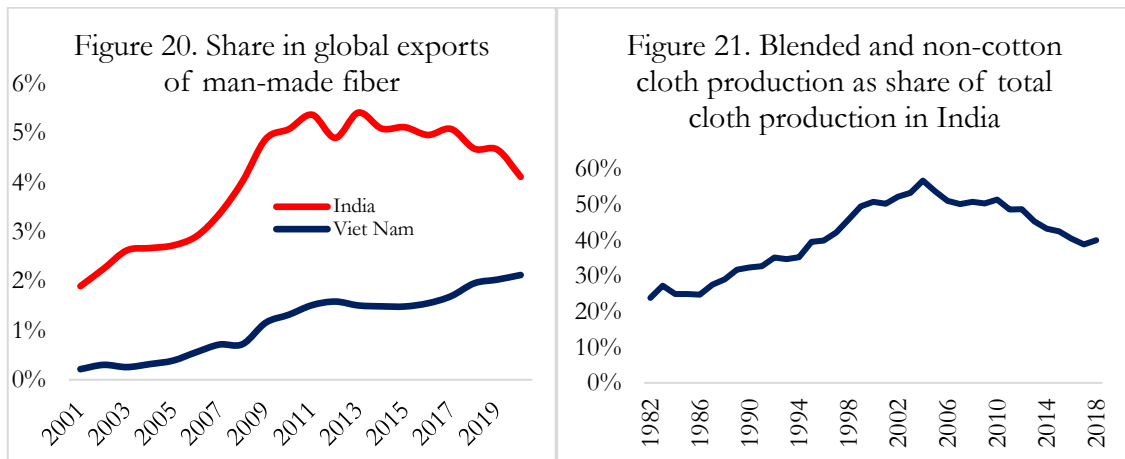
Source: Office of Textile Commissioner.

All this ultimately led to a productivity decline in the firms, even as their global competitors were gaining productivity (see Figure 19). In fact, per-worker output in the man-made textile sector in India has fallen below that of Bangladesh and Vietnam.



Source: UNIDO

With the rising cost of production, declining productivity, and rising output prices, the man-made textile sector lost out on the external front. India's global share in man-made textile exports has declined by almost 1.5 percentage points, more than half of which has been captured by Vietnam (See Figure 20).



So far, we provide a compelling argument that helps us understand the decline in man-made fabric production and exports by India. One would expect these changes to feed downstream of the textile value chain. For instance, looking at the share of blended and non-cotton cloth production in India in Figure 21, we see that cloth production slowed down drastically post 2010 and a fair share of this is polyester and polyester blended fabrics.

5. Cascading of Problems from Manmade Fibre to Manmade Apparel

As manmade textile is the most important input that goes into the manufacturing of manmade fabric apparel, it is natural to expect that the sluggish performance of the former should adversely affect the latter.

Unlike the manmade fibre producers who are few, the manmade fabric-based apparel segment has many factories. In fact, in 2010-11, 44 per cent of factories produced manmade fabric-based apparel. To analyze these factories, we use unit-level data from the Annual Survey of Industries for the years 2010-2019 to understand what has happened at the factory level that can explain the decline that is observed post 2016-17.

5.1 Defining the Manmade Apparel Sector

Identifying factories that produce manmade made apparel is particularly challenging as there is no National Industrial Classification (NIC) code for manmade apparel. We identify man-made fabric-based apparel producers by analyzing their input use. Table 1 provides the National Product Classification for Manufacturing Sector (NPCMS) codes for the inputs that help us categorize apparel factories as manmade apparel producers.

Table 1		
S.No.	NPCMS 2011 revised code	Description
1	262	Manmade staple fibres
2	264	Textile yarn and thread of man-made filaments or staple fibres
3	267	Woven fabrics (except special fabrics) of man-made filaments and staple fibres
4	355	Man-made fibres
5	2654	Woven fabrics of wool or fine animal hair, containing less than 85 per cent by weight of wool or fine animal hair
6	2663	Woven fabrics of cotton, containing less than 85 per cent by weight of cotton, mixed mainly or solely with man-made fibres
7	2682	Woven pile fabrics and chenille fabrics (other than terry towelling and narrow fabrics) of man-made fibres
8	2689	Woven fabrics (including narrow fabrics) of glass fibres
9	2792199	Felt, manmade fibre, n.e.c

A factory whose 80 per cent of material input costs⁸ are composed of the inputs categorized in the NPCMS codes provided in table 1 is categorized as a manmade apparel producer. We contrast the performance of the manmade segment with the cotton segment of apparel and hence do a similar classification for cotton-based apparel (See Table 2).

Table 2		
Sno.	NPCMS 2011 revised code	Description
1	2616	Cotton, carded or combed
2	2635	Cotton sewing thread
3	2636	Cotton yarn (other than sewing thread), containing 85 per cent or more by weight of cotton
4	2637	Cotton yarn (other than sewing thread), containing less than 85 per cent by weight of cotton
5	2661	Woven fabrics of cotton, containing 85 per cent or more by weight of cotton, weighing not more than 200 g/m ²

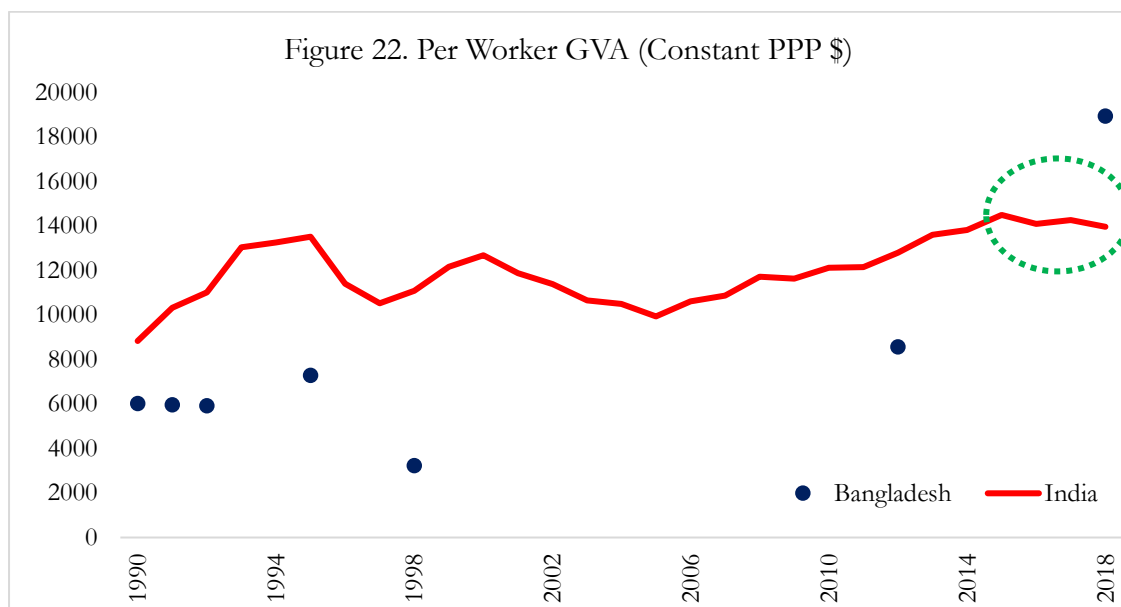
⁸ Material inputs include all imported inputs and basic inputs for production as classified by the Annual Survey of Industries.

6	2662	Woven fabrics of cotton, containing 85 per cent or more by weight of cotton, weighing more than 200 g/m ²
7	2669	Other woven fabrics of cotton
8	2681	Woven pile fabrics and chenille fabrics (other than terry towelling and narrow fabrics) of cotton
9	2684	Terry towelling and similar woven terry fabrics (other than narrow fabrics) of cotton
10	2792104	Felt, cotton
11	2819001	Fabrics, grey/ unprocessed, cotton, knitted/crocheted
12	2819003	Fabrics, dyed/ processed, cotton, knitted/crocheted

We now move to analyze the behaviour of these groups of apparel producers.

5.2 Analysis of the Manmade Fabric-based Apparel Sector

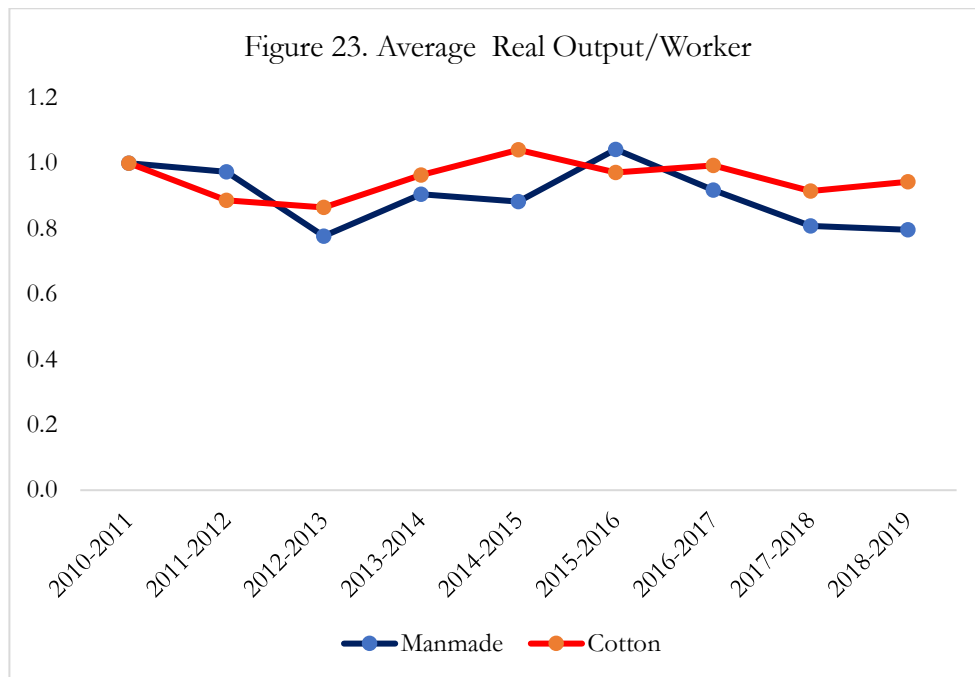
We begin by analysing the productivity of the overall apparel sector by looking at the GVA per worker. The average productivity of the sector hardly improved between 1990-2004. However, post-2004 the sector witnessed a strong productivity surge as it increased by almost 50 per cent by the end of 2015. Since then, the trend has reversed and there has been a decline in the productivity of this sector. It is a matter of grave concern that the Indian apparel sector has been losing productivity at a time when our competitors, such as Bangladesh, continue to witness a surge in their productivity (See Figure 22).



Source: Authors' estimate based on UNIDO

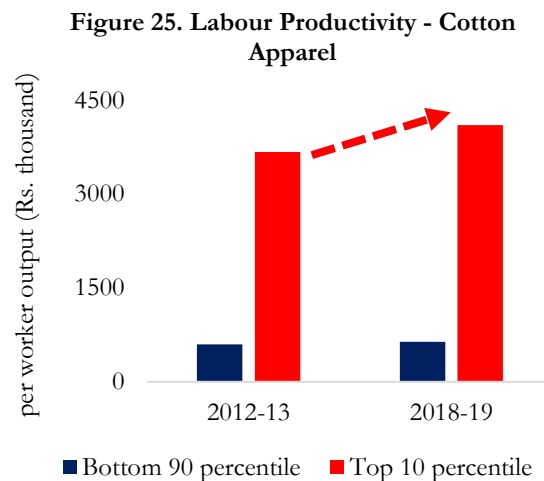
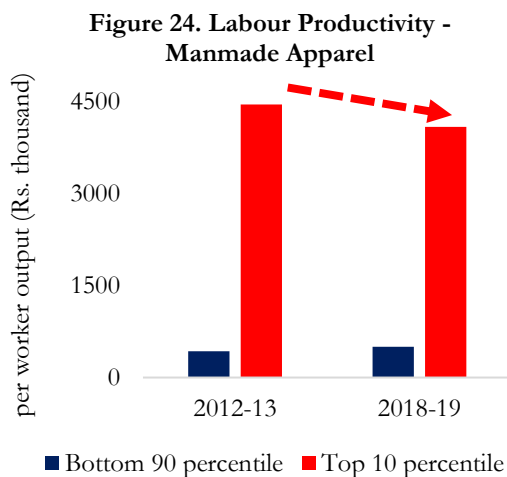
We analyse the factors that could have led to this decline in productivity by disaggregating the apparel sector as manmade (MMF) and cotton fabric-based apparel. The labour

productivity in MMF-based apparel sector declined by more than 23% between 2016-2019. In comparison, the labour productivity declined by only 3% in the cotton apparel segment.



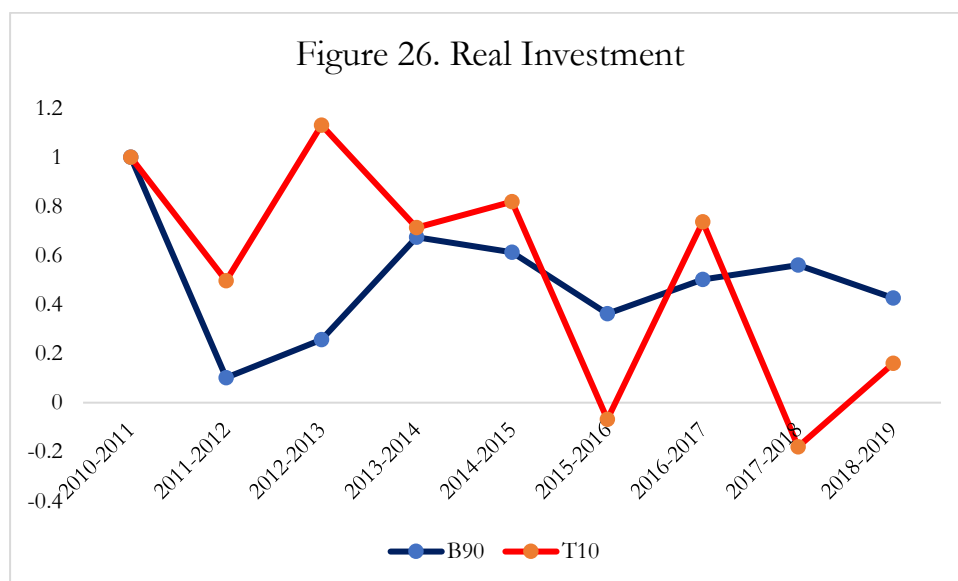
Source: ASI data. Labour productivity has been normalized to 1 for the year 2010-11.

The worrying trend is that the decline in labour productivity of MMF apparel manufacturing firms is entirely driven by the most productive firms. The per-worker output of the top 10 percentile of most productive MMF apparel manufacturing firms declined by nearly 10 per cent between 2012-13 to 2018-19. During the same period, the rest of the firms saw their productivity rise by 16 per cent. In the cotton apparel segment, as well, the top 10 percentile of firms witnessed a 12 per cent increase in their productivity (See Figures 24 and 25).



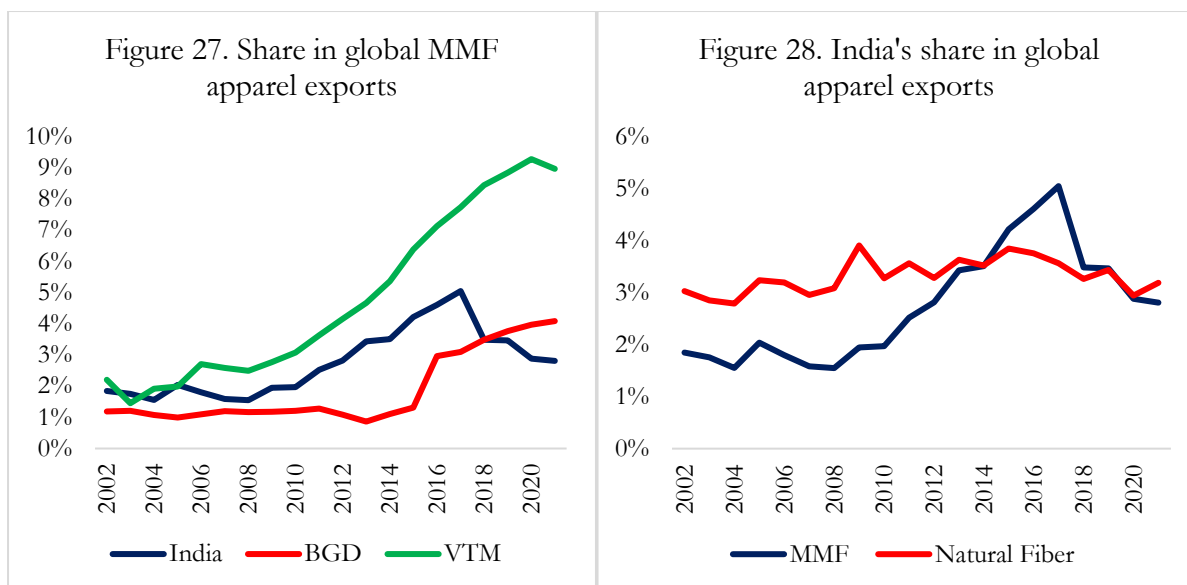
Source: Authors' estimates based on ASI data.

Why should the productivity of the most efficient firms decline when the other firms in the same industry were witnessing growth in their productivity? To understand why the productivity of the most efficient firms producing MM apparel is declining, we compare the real investments of producers in the topmost productivity decile with those in the bottom 9 deciles. We see in Figure 26 that this decline has been driven by the sharp decline in investment by the most productive firms.



With the loss of productivity and the decline in investments, especially in the most productive units, our MMF apparel producers have become relatively less competitive in the external market as well. The MMF apparel sector did spectacularly well between 2008-17 and increased its market share from just 1.2 per cent to 5.0 per cent in 2017. However, this trend reversed, as we lost competitiveness and our share declined to 2.8 per cent by the end of 2020. During the same period, our global competitors have done exceedingly well and have significantly increased their market share. Bangladesh’s export share overtook that of India in 2009, and it stood at 4.1 per cent in 2020. Vietnam, on the other hand, further consolidated its market and accounted for nearly 9 per cent of the global exports in 2020 (see figure 27).

Figure 28 gives us a comparison of the export performance of India’s MMF apparel and the cotton apparel segment. As can be seen, the decline in the export performance of the MMF apparel sector is much worse.



Source: Authors' estimate based on UN COMTRADE data.

Our findings so far suggest that the problem emanating from PTA led to the declining performance of the polyester sector which in turn led to the declining performance of the MM apparel sector. Next, we turn to analyse the response of the government to address some of the challenges.

6. Government's policy response

In response to the declining performance of the textile and clothing sector, the government has initiated some targeted measures, as well as measures for the manufacturing sector which could benefit the textile and clothing sector.

6.1 Productivity Linked Incentives

The government introduced the Production-Linked Incentive (PLI) scheme in March 2020 to boost domestic manufacturing and exports. The PLI scheme aims to make Indian manufacturers in ten identified sectors, which include the manmade textile and apparel industry, globally competitive, attract investment in the areas of core competency and cutting-edge technology; ensure efficiencies; create economies of scale; establish backward linkages with MSMEs; enhance exports and make India an integral part of the global supply chain; and incentivizes global, capital-rich companies to set up capacities in India. This scheme provides financial incentives to companies on incremental sales from products manufactured in domestic units, with a total budgeted outlay of Rs. 1.97 lakh crore.

Almost 85 per cent of the outlay of the PLI scheme is geared towards the high-skill industry.

There is very little support allocated for labour-intensive sectors like manmade textile and apparel, which was allocated only 5.4 per cent (Rs. 10,683 crores) of the total outlay. This is inadequate given the urgency to bolster the manmade fibre base in India which is essential for the revival of the clothing sector. It is also instructive to note here that similar subsidies to promote exports awarded under the Merchandise Exports from India Scheme have had to be eliminated in the past because such production subsidies effectively serve to reduce imports (PIIE, 2020).

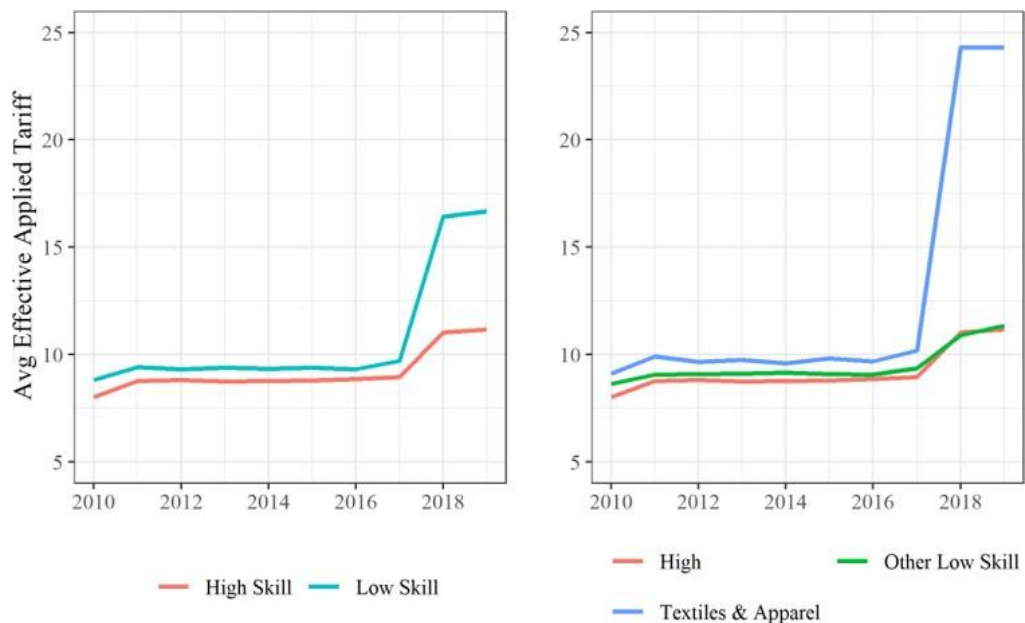
6.2 Atmanirbhar Bharat – Return to protectionism

Since 2017, there has been a new and significant shift in policy orientation, with the government aiming to boost domestic manufacturing through increasing protection from foreign trade. This change is in sharp contrast with India's increasing trade liberalization and integration into the global economy since 1991. Singh (2017) documents that between 1991 and 2014, average tariffs declined from 125 per cent to 13 per cent. However, since 2014, there have been tariff increases in 3,200 out of 5,300 product categories, affecting about \$300 billion or 70 per cent of total imports (Chatterjee and Subramanian, 2020b).

This change in India's trade outlook has now been formalized in policy as the *Atmanirbhar Bharat Abhiyan*, which translates to 'self-reliant India'. The objective of the policy is to increase India's manufacturing growth through import substitution by providing protection from foreign competition through increased tariffs and curtail India's rising trade deficit.

We find that in 2018, the average effective applied tariffs in low-skill manufacturing jumped from 9.6 per cent to 16.4 per cent, whereas the tariffs in high-skill sectors increase from 8.9 per cent to 11 per cent. To study the changes in tariffs in the textile and apparel industries, we further decompose the low-skill industries into textile and apparel and other low-skill industries. This decomposition in the right panel of Figure 29 reveals that the higher increase in tariffs observed in the low-skill sectors is almost entirely driven by the textile and apparel industries.

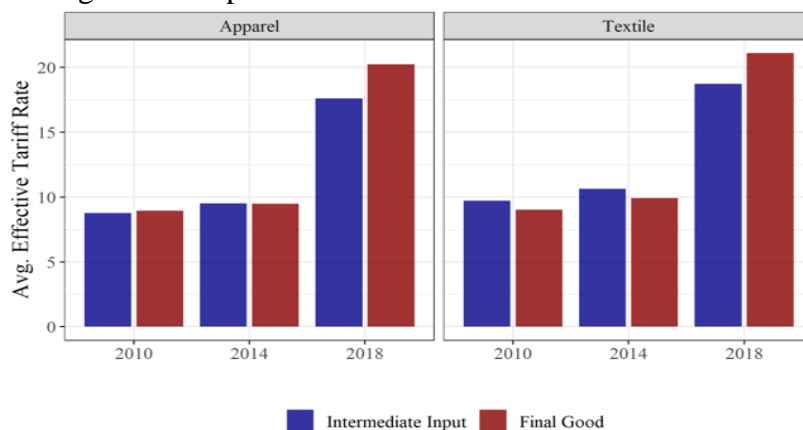
Figure 29. Average Effective Applied Tariff over Time



Source: Authors' estimate based on WTO data

While the increase in tariff rates has been made to protect domestic firms from foreign competition, these hikes in the nominal tariff rates may not give us an accurate picture of firm-level incentives. As figure 30 shows, these tariff hikes affect not only the final goods produced by the textiles and apparel industries but also the intermediate inputs that go into the production process. Therefore, alongside the increased protection of its output, the firm will also have to bear a higher price on its inputs which may make it uncompetitive.

Figure 30. Import Tariff on Final and Intermediate Goods



Source: Authors' estimate based on WTO data.

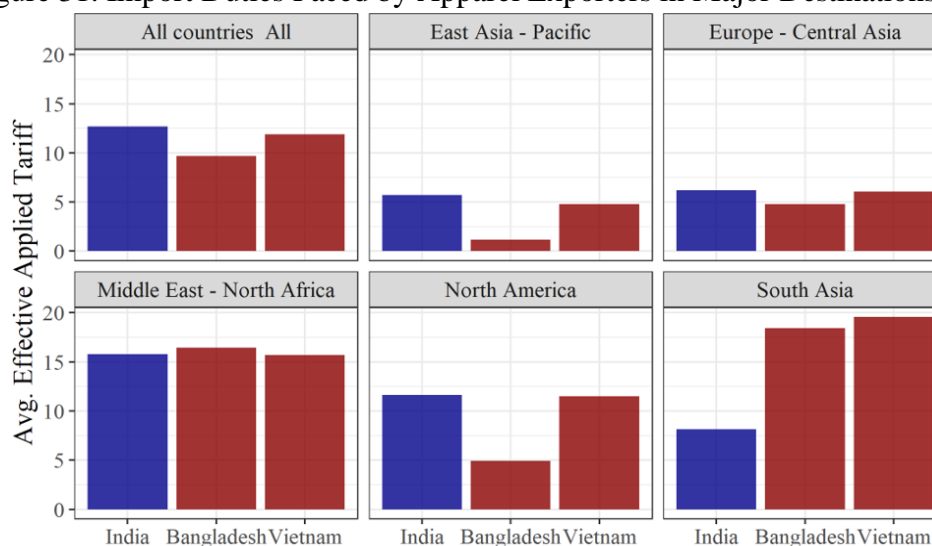
6.3 Deprioritising preferential access to global markets

Textile and apparel exports from India face high tariffs in major markets whereas competing countries like Vietnam and Bangladesh do not face similar high tariffs because

they have access to preferential tariff rates from free-trade agreements and treaties. For example, Least Developing Economies (LDEs) such as Bangladesh and Cambodia face zero tariffs in the EU and some other developed economies.

Figure 31 shows that India faces higher average effectively applied tariff rates for apparel products as compared to Bangladesh and Vietnam in most geographies. India's tariff rates are only lower than the competitors in the Middle East and North Africa. While the figure suggests that India's tariffs in South Asia are lower than Bangladesh and Vietnam's, it should be noted that Bangladesh and Vietnam's tariffs are higher primarily because India's recent tariff hike is included in calculating their duty structure.

Figure 31. Import Duties Faced by Apparel Exporters in Major Destinations



Source: Authors' estimate based on WTO data.

In recent years, Vietnam has signed free-trade agreements with the EU, Canada and Australia which provide preferential tariff access to these markets. Moreover, Vietnam is also part of the recently inked RCEP free-trade agreement, which will help it increase its market penetration in ASEAN countries in the coming years. Finally, with the recent change of political establishment in the USA, it is also likely that the USA will rejoin the Trans-Pacific Partnership (TPP), which will further boost Vietnam's access to the US market.

On the other hand, India has been ambivalent in its approach to pursuing trade treaties in the past decade. Chatterjee and Subramanian (PIIE, 2020) note that while India signed 11 preferential/free-trade agreements between 2004 and 2014, there have been none signed after 2014. Moreover, India's current trade agreements are not very beneficial for our textiles and apparel exports as well. India has 15 multilateral and bilateral trade agreements,

but the depth of these preferential agreements is relatively low (OECD, 2019). Among all partner nations, except Japan, there are no major importers of textiles and apparel (Wazir Advisors, 2016).

7. Conclusion

The textile and apparel sector in India witnessed a decline post-2011. This is worrying given the potential of the sector in generating jobs and earning foreign currency. The decline in the sector is driven mostly by polyester-based fibre and apparel. This is worrying at a time when China is ceding space in the global market and there lies an opportunity to increase India's presence. This decline does not emanate from any exogenous shock but has been a result of domestic policy choices made by India. The domestic production of PTA, the key intermediary input for polyester production, started stagnating post-2011. The Indian government responded by imposing stiff anti-dumping duties on India's PTA imports from major sourcing destinations, ranging from \$24 to \$117 a tonne, in 2014. This was followed by hike in import tariff on PTA from 7.5 per cent to 10 per cent in 2018. Consequently, India's PTA imports declined sharply at a time when domestic production was declining. This led to shortage in domestic availability of PTA and an increase in their prices that pushed up the manufacturing cost of polyester and made India's exports uncompetitive in the global market. As polyester is a key input for the man-made apparel segment, our productivity in the man-made apparel sector declined as well. More importantly, this fall in productivity is largely accounted by top 10 per cent of the most productive man-made apparel plants.

In 2020, the government finally rolled back the anti-dumping duties on PTA. However, the other policy interventions of the government may fail to do enough for the sector. First, the PLI scheme is largely focused on the high-skill manufacturing sector and the outlays made for the manmade textile sector are minimal. Second, the government has increased the import tariffs on polyester to provide protection from foreign competition. However, this move has further pushed up the cost of production for man-made apparel and has led to further deterioration in their external competitiveness. Finally, we are losing out on the global market as our competitors have been signing FTA agreements whereas India has been ambivalent in its approach to pursuing trade treaties.

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