Strategic Trade Policy for Pakistan's Textile Sector in 2018: Enhancing High Value-Added Exports through Low-Priced Intermediate Input

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We examine the relationship between low-priced intermediate inputs (via input tariff reductions) and export performance indicators using panel data from 166 countries from the years 2000-2015. Employing an instrumental variable approach, we show that export performance indicators improve as better quality; low-priced intermediate inputs are made available to the local manufacturer. We further propose a new methodology based upon a conservative approach to identify a list of intermediate inputs (with their exact HS codes) on which tariffs should be lowered. Using the average unit value of the intermediate input as a proxy for input quality, this methodology is based on comparing intermediate input quality available domestically with that available in the foreign market. Taking Pakistan's textile sector as an example, we list the intermediate inputs for tariff reductions based on their importance ranging from a scale being extremely important to less important to promote high-value-added exports. We reason that reducing tariffs on a selective range of inputs will lead to improved quality exports of the final product while protecting the domestic input manufacturers. Finally, we conduct a cross-country comparison of tariff rates between Pakistan, India, and Sri Lanka to identify the intermediate inputs where potential tariff reductions exist for Pakistan.

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1. INTRODUCTION

Numerous strategies have been proposed in the literature to enhance exports, including currency devaluation (Nicita, 2013; Krugman & Obstfeld, 2003; Feenstra & Taylor, 2008) and providing direct loans to entrepreneurs for business expansion including reinvestment purposes (Bach, 2013; Banerjee & Duflo, 2004). However, there remains a need to explore additional avenues for improving export performance. This paper aims to address this gap through a two-fold approach. Firstly, using a panel data set covering 166 countries over a span of 16 years, we examine the impact of reducing intermediate input tariffs on the import value of intermediate inputs. We then examine how this subsequently influences various export performance indicators. Secondly, leveraging a historical dataset of Pakistan's textile sector in 2018, this paper proposes a

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strategic methodology of reducing tariff rates on a select range of intermediate inputs, thereby facilitating upward movement along the export value chain. This methodology helps us generate multiple lists of intermediate inputs based on Pakistan's need to reduce tariffs while protecting the domestic input suppliers. In addition to the textile sector, this methodology can also be extended to other sectors to generate similar intermediate input lists for tariff reductions.

Much of the new emerging literature stresses the importance of intermediate input tariff reductions. Bigsten, et al. (2016) studied the effect of both input and output tariff reductions on firms in Ethiopia. They conclude that for exporting firms, there are large productivity gains from input tariff reductions. In fact, this gain outweighs the benefits from the output tariff reductions. Likewise, according to Topalova and Khandelwal (2011), reduction in import tariffs is important for developing countries, especially those that came out of the import substitution phase under which they faced technological constraints, simply because of the lack of availability of imported inputs.

Tariff reductions on intermediate goods may have opposing effects on the economy. On the one hand, it can provide low-priced better quality intermediate inputs to the manufacturers of final goods. While, on the other hand, it can pose a challenge to the existing local manufacturer of these intermediate inputs by creating a more competitive market for them. Therefore, we recommend a *conservative approach* and suggest a methodology to create a list of intermediate inputs from a scale of being extremely important to insignificantly important for tariff reductions. We also extend the analysis to identify the input categories where the tariff rates can be maintained, which may have two constructive effects on the economy; first, it may protect the local manufacturer of high-quality intermediate inputs (protectionism)[1] and second, it may oppose any decline in fiscal revenues due to tariff reductions proposed earlier.

Initially, under this methodology, we generated a list of intermediate inputs that have high correlations between intermediate tariff rates and the export value of the final product at the sector level identified at the HS-2 Digit Code. This input list is further extended to suggest a tariff reduction at the HS-6 Digit Code level, for only those specific inputs, which have a high import unit value as compared to the average unit value available to the local exporter. Thus, our methodology allows us to strategically recommend tariff reductions in a sequence from being extremely important to insignificantly important as indicated by the quality of the intermediate inputs available locally.

This analysis is further extended to identify the input categories where the tariff rates can be maintained based on a sequence from being extremely important to insignificantly important. To do that, we list the locally produced high-quality intermediate inputs that may require protection. They are listed based upon the average unit value available to the local manufacturer being significantly higher than the import unit value. The government can push the tariff rates high or at least maintain the old tariff rate for these input categories to counter the impact on revenues generated by the government due to the tariff reductions proposed on other input categories.

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[1]Inputs listed in Appendix are based on their relevance for tariff protection from a scale of being extremely important to insignificantly important, that has been identified on the basis of high quality available in Pakistan as compared to that imported from abroad.

Pakistan's economy fits well with the two requirements listed by Topalova and Khandelwal (2011) for tariff reductions. During the 50s and 60s, the country experienced an import substitution phase mainly to encourage the local manufacturers and enhance its industrial base. Later in the 70s, the policy shifted towards export promotion schemes that became more profound, specifically after Pakistan joined the World Trade Organisation (WTO) (Tobin & Busch, 2019). We propose that for Pakistan to climb up the export ladder, and follow India, it should focus on negotiating with other countries on a similar kind of input list. Pakistan holds significant relevance as a strategic trade partner in the world for several reasons: first, due to its geopolitical location, second, it has a sizeable consumer market that provides lucrative opportunities for international business, third its natural resources can be leveraged for trade and investment opportunities. In addition, it has a young and growing workforce together with an untapped potential for economic growth.

Therefore, in this paper, we argue that given the technological constraints and policy shifts to boost exports and improve export unit value, a strategic approach needs to be devised by developing countries. Hence, Pakistan makes a good case for applying this methodology proposed in the paper. As a case study, we lastly apply this methodology to Pakistan's textile sector to list down the sequence of intermediate inputs based on their relevance for tariff reduction.

Over the past decade, Pakistan has substantially reduced the tariff rates, especially after entering into a Free Trade Agreement (FTA) with various countries [2] and most importantly with China. While the FTA is mainly bilateral, and hence tariffs have been lowered on both sides, Pakistan still needs to be very thoughtful about the inputs it is lowering its tariffs upon, which should be based on long-term growth prospects. An important channel, through which these FTAs can benefit Pakistan, is if it lowers the tariffs on the intermediate inputs so that high-quality, low-priced intermediate inputs are made available to the local manufacturer. This will help Pakistan boost its exports in the world market.

The main problem for Pakistan in terms of exports has been its dependence on low-value-added agricultural and manufacturing goods. We look at some lessons that Pakistan can learn from India in an attempt to climb up the export ladder. We select the textile sector based on its relevance to Pakistan, for this analysis. The textile sector is the biggest exporting sector of Pakistan, with a value of approximately equivalent to US $ 3.8 billion in 2016.

The remainder of the paper is organised as follows. Section 2 establishes the relationship between the import of intermediate inputs and the export performance indicators. Section 3 comprehensively explains the proposed methodology for strategic tariff reductions. In Section 4, we apply this methodology to the case of Pakistan by identifying a sequence in terms of a list of intermediate inputs, based upon the preference for tariff reductions to achieve high-value addition in exports, specifically for the textile sector in Pakistan. Concluding remarks are presented in Section 5.

[2]To the best of our knowledge based upon information provided till September 2021 Pakistan signed free trade agreements with China, Sri Lanka, Malaysia, Iran, Mauritius, Indonesia, Turkey, Bangladesh, Afghanistan and Gulf countries.

2. DETERMINING THE IMPACT OF THE IMPORTED AVERAGE INTERMEDIATE INPUTS ON THE EXPORT PERFORMANCE INDICATORS VIA THE CHANNEL OF TARIFF REDUCTIONS

In this section, we establish the relation between the increase in the import of intermediate inputs (\$ US) on the export performance indicators across the globe over time. We argue that export performance indicators improve with an increase in imports of the intermediate inputs through tariff reductions on these intermediate inputs.

2.1. Data

We use the World Integrated Trade Solution (WITS) database that has been developed by the World Bank, in collaboration with the United Nations Conference on Trade and Development (UNCTAD) and with the help of organisations such as the International Trade Center, United Nations Statistical Division (UNSD) and the World Trade Organisation (WTO). This database includes information on more than 170 countries since 1962 as reported to the United Nations.

The statistics and data continue to be recorded for detailed information on tariffs and non-tariff measures, for the National Tariff Line level, at the comprehensive Harmonised Commodity Description and Coding System (HS). Using this database, a panel is created for 166 countries from the year 2000-2015.

2.2. Methodology

An instrumental variable (IV) approach has been used to estimate the impact of the imports of the intermediate inputs on the export performance indicators. Along with this approach, we take advantage of this panel data set and use country-fixed effects to account for any time-invariant unobservable variation at the country level. Average intermediate input tariff has been used as an instrument for the imported intermediate inputs value (measured in \$ US), for each respective country over time. Combing the fixed effects with the IV approach increases the precision of the results.

The first stage is estimated as follows:

$$Log \ (Intermediate \ input(\$ \ US))_{it} = \propto_0 +$$
$$\propto_1 Average \ Intermediate \ Input \ tariff_{it} + \in_{it} \quad \dots \qquad \dots \qquad (1)$$

The left-hand side variable is the log of the intermediate input (measured in \$US), and the right-hand side variable is the average intermediate input tariff across countries over time. The fitted values from the first stage (variation in intermediate input explained by the intermediate input tariff alone i.e., exogenously determined intermediate input), are used in the second stage, where the export performance indicators are taken as the dependent variable.

$$Export \ Performance \ Indicator_{it} = \beta_0 + \beta_1 \widehat{Intermediate \ Input \ US \ \$}_{it} + C_i + u_{it} \quad (2)$$

We take various measures of export performance for each respective country over time as mentioned below:

   (1) Export Value: The net value of the exports for a country over time measured in US thousands of dollars.

(2) Export Value Index: Export values are the current value of exports converted to U.S. dollars and expressed as a percentage of the average for the base period. The year 2000 is taken as the base year.[3]

(3) Export Volume Index: Export volume indexes are derived from UNCTAD's volume index series and are the ratio of the export value indexes to the corresponding unit value indexes (the year 2000 is taken as the base year).

(4) Herfindahl-Hirschman Market Concentration Index: This indicator is a measure of the dispersion of trade value across an exporter's partners. A country with a preponderance of trade value concentrated in very few markets will have an index value close to 1. Thus, it is an indicator of the exporter's dependency on its trading partners and the danger it could face should its partners increase trade barriers. Measured over time, a fall in the index may be an indication of diversification in the exporter's trading partnerships.

(5) Export Unit Value: This is the ratio of the Export Value Index to the Export Volume Index[4].

(6) Index of Export Market Penetration: This indicator measures the extent to which a country's exports reach already proven markets. It is calculated as the number of countries to which the reporter exports a particular product divided by the number of countries that report importing the product that year[5].

2.3. Results

The first stage results (Table 1A) are significant and negative for all the specifications, indicating that a rise in the tariff on the imported intermediate input leads to a fall in their total imports (measured in $US). F statistics reveal that the instrument passes the exogeneity test. Hence, a strong instrument explains the variation in the import of the intermediate inputs.

Table 1A

First Stage: Determining the Impact of Average Intermediate Input Tariff on the Average Import Value of the Intermediate Inputs

Dependent Variable: Log (Intermediate Input)	Log Export Value	Export Value Index (Base year 2000)	Export Volume Index (Base Year 2000)	Herfindahl-Hirschman Market Concentration Index	Export Unit Value	Index of Export Market Penetration
Average Tariff Rate of Intermediate Goods	-0.0896***	-0.0892***	-0.0892***	-0.0891***	-0.0893***	-0.0894***
	(-0.0044)	(-0.0044)	(-0.0044)	(-0.0044)	(-0.0044)	(-0.0044)
F-Value of the excluded Instruments	416.88	408.20	408.2	410.24	408.20	415.45
Number of Observations	1,732	1,687	1,687	1,714	1,687	1,727
Number of Countries	166	157	157	165	157	165

Data Source: World Integrated Trade Solution (WITS). Results are based on author's own calculation.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$. Standard Errors in parenthesis.
Log Intermediate Inputs instrumented by Average Tariff Rate on Intermediate goods varying by country and time. Country Fixed effects have been applied as well. Number of Countries: 166, Time Period: 2000-2015.

[3]In the year 2000, the index equals to 100.

[4]Note since both the numerator and denominator were normalised by the base year 2000, the export unit value index is not normalised by the base year.

[5]A low export penetration may signal the presence of barriers to trade that are preventing firms from expanding the number of markets to which they export.

The second stage results (Table 1B) indicate that the import of intermediate inputs has a significant impact on most of the export performance measures. Import of intermediate inputs has a positive and significant impact on the total export value. The estimates show that a one percent increase in the value of the imported intermediate input increases the total export value by 0.985 percent ceteris paribus. Likewise, in column 2, the estimates show that on average if the import of intermediate inputs goes up by 1 percent, the total value of the export index goes up by 243.6. In addition, the import of intermediate inputs has a positive and significant impact on the export volume index. If the import of intermediate inputs goes up by 1 percent, the total value of the export volume index goes up by 85.25.

Table 1B
Second Stage: Determining the impact of Import of Average Intermediate Input Value on the Export Performance Indicators

Dependent Variables	Log Export Value	Export Value Index (Base year 2000)	Export Volume Index (Base Year 2000)	Herfindahl-Hirschman Market Concentration Index	Export Unit Value	Index of Export Market Penetration
Log of intermediate input import	0.985***	243.6***	85.25***	688.4	0.814***	1.711***
	(-0.0287)	(-11.86)	(-7.133)	(-2,206)	(-0.0369)	(-0.113)
Constant	1.317***	-3.262***	-1.070***	-8,847	-10.22***	-18.97***
	(-0.419)	(-172.1)	(-103.4)	(-32,022)	(-0.535)	(-1.645)
Instrumental Variable	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of years	16	16	16	16	16	16
Observations	1,732	1,687	1,687	1,714	1,687	1,727
Number of countries	166	157	157	165	157	165

Data Source: World Integrated Trade Solution (WITS). Results are based on author's own calculation.
*** p<0.01, ** p<0.05, * p<0.1. Standard Errors in parenthesis.
Log Intermediate Inputs instrumented by Average Tariff Rate on Intermediate goods varying by country and time. Country Fixed effects have been applied as well. Number of Countries: 166, Time Period: 2000-2015.

Import of intermediate inputs has a positive and significant impact on the export unit value index. On average, if the import of intermediate inputs goes up by 1 percent, the total value index goes up by 0.33 units. On the contrary, the Herfindahl Index has been affected insignificantly by the increase in the import of intermediate inputs.

Whereas, the import of intermediate inputs still has a positive and significant impact on the export unit value, a 1 percent increase in the import of intermediate inputs export unit value increases by US$ 0.814. Lastly, the results show a positive and significant effect of the import of intermediate inputs on market penetration.

3. PROPOSED METHODOLOGY FOR A STRATEGIC DECREASE IN TARIFF RATES ON THE INTERMEDIATE INPUTS

As the first step, we identify the intermediate inputs based on their relevance for each respective sector. For any country, such information can be gathered from a detailed firm-level data set at the micro level that gives comprehensive information

on the inputs used by firms within a sector[6] for that country at HS 2-Digit Code.[7] We argue that climbing up the export ladder for the local manufacturer would mean making available the intermediate inputs that are used by the other progressive countries in the world for each respective sector. Therefore, we select a country based on our sector of interest that has two characteristics; firstly, it should be similar to the country for which the analysis is conducted and secondly, it should be outperforming in the world market for that respective sector. Following this rationale, after identifying the sector-level intermediate inputs and the progressive country, we identify the list of the most important intermediate inputs (at HS 2-digit code) using the correlations between tariff rates[8] of these intermediate inputs and the sector-level export value. From this entire list, we select only the top eight intermediate inputs that have the highest correlations. This HS-2 Digit Code list is extended to a detailed list of intermediate input categories at HS-6 Digit Code.

Since the quality of the intermediate inputs available in the local market determines the value addition of the exports, therefore, quality of the intermediate inputs available to the local manufacturer plays a vital role in our methodology. The average unit value can be considered as a close proxy for the quality of the intermediate inputs available in the local market. Consequently, we calculate the export unit value and the import unit value for all the HS-6 Digit categories based on their HS codes[9]. Then, using this data, we calculate the average unit value for each respective HS-6 Digit category[10]. This average unit value for each respective category is compared to the import unit value to identify a sequence of lists where the tariffs can be reduced strategically. We refer to these as the Tariff Reduction Zones (TRZs).

To create the TRZs we take a *conservative approach*. We do not propose to reduce tariffs on the entire HS-6 Digit code categories identified above. Rather, in this methodology we divide the intermediate inputs into four different TRZs:

(1) *Extremely Important for Tariff Reductions:* These are the intermediate inputs for which the import unit value is 3 standard deviations or greater than what is available to the local manufacturer. The inputs that fall in this category have a high import unit value compared to the goods available in the local market on average and hence, should be imported. For these products, there is an urgent need to reduce tariffs.

(2) *Important for Tariff Reductions*: These are the products for which the import unit value is between 2 and 3 standard deviations greater than the average unit value available to the local manufacturer.

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[6]We used the Census of Manufacturing Industries for Punjab (CMI), 2005 to identify the intermediate inputs as an example for Pakistan in textile sector. Then out of those Intermediate inputs, we identified India's top eight imported intermediate Inputs, based upon the high correlations between these intermediate inputs and the export value of the textile sector in India.

[7]The information on the firm level data set (CMI) for Pakistan was disintegrated at HS 6 digit code but the chances of having a missing input used by other countries and not Pakistan were high, therefore we identified the inputs at HS -2 digit code.

[8]The World Trade Organisation (WTO) gathered data from Tariff Analysis Online.

[9]This information was taken from UN Comtrade Data Base.

[10]The average unit value is the average of the export unit value and the import unit value available to the Pakistani manufacturer.

(3) *Moderately Important for Tariff Reductions*: These are the intermediate inputs for which the import unit value is between 1 and 2 standard deviations better than what is available to the local manufacturer.

(4) *Insignificantly Important for Tariff Reductions*: These are the intermediate products for which the import unit value is better than the average unit value, but it only exceeds by less than 1 standard deviation.

Fig. 1. Categorisation of the Intermediate Inputs According to the TRZs
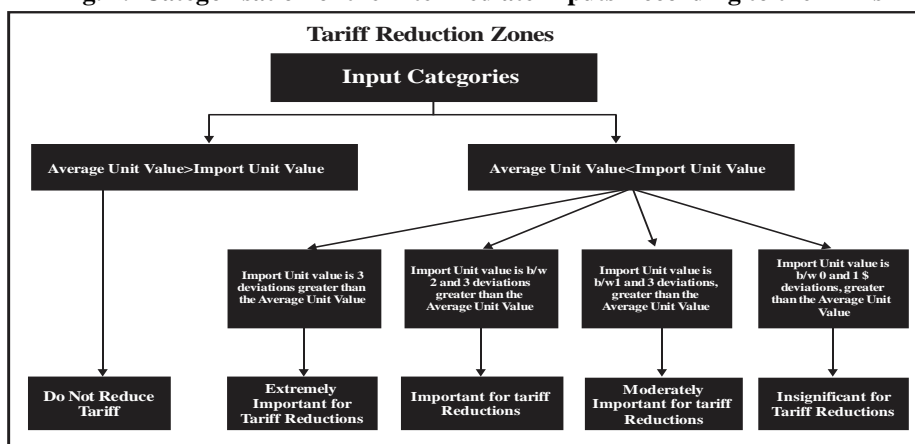

Figure 1 summarises the Intermediate Inputs being classified according to the TRZs.

Finally, we use this information to generate a list of HS-8 Digit product code to identify the list of the names of the specific intermediate inputs that fall within each respective TRZ.

4. IDENTIFYING INTERMEDIATE INPUTS FOR BOOSTING THE EXPORTS IN THE TEXTILE SECTOR

In this section, we narrow down our focus only to the textile sector and identify intermediate inputs for India, which have a strong correlation with its textile export value. We argue that climbing up the export ladder for Pakistan would mean that it has to follow the footsteps of India. Therefore, making these inputs available to the Pakistani textile exporter may result in the manufacturing of better and improved quality final products. Finally, we narrow down the list of the intermediate inputs identified earlier by suggesting a strategic tariff reduction, on only those intermediate inputs that have a higher unit value as compared to what is available to the Pakistani manufacturer. The argument is that for such inputs, which have a higher unit value, their quality is better than what is currently available to the Pakistani manufacturer; hence we should focus on reducing the tariff on these intermediate inputs so that we can increase their import. For the imported inputs, which have a lower unit value, we do not suggest a tariff reduction on these inputs, since better quality is being produced locally. Therefore, reducing tariffs for the latter type of intermediate inputs would mean hurting the domestic input suppliers.

4.1. Learning from India

We select India for two reasons (i) the similarity between the two countries in terms of the correlation between input tariff and export value as mentioned in section 2 (ii) India has outperformed many countries in the world market in terms of its exports in the textile sector. India is a growing economy, with a projected growth rate of 6.75 percent for FY 2017-1. The relevance of the textile sector for India is similar to that of Pakistan since the textile sector is a major contributor to its GDP and is the second largest sector in terms of employment after agriculture. It is interesting to note that in FY 2003 the Export value of Textile and Clothing (in $US) for India was fairly near to that of Pakistan (Figure 2) but over time, the gap between both countries has widened. This implies a need for Pakistan to revisit its policies to regain momentum in the export market.

Fig. 2. Country Wise Export of Textile and Clothing (US$) over time (2003-2013)

Source: World Integrated Trade Solutions (WITS).

Table 3 shows the top eight textile products exported by all the countries in 2012-2016, as a proportion of the total world exports (at HS- 4 Digit Code). This list of products is compared across Pakistan, India, Sri Lanka, and Turkey to see the position of Pakistan in the world market.

Table 3

Top Eight Exporting Textile Products of the World (2012-2016)

Top Eight Textile Exporting Textile Products of the World between 2012-2016	
HS Code	Product
6204	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear), not knitted or crocheted.
6110	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted.
6203	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), not knitted or crocheted.
6109	T-shirts, singlet's and other vests, knitted or crocheted.
6104	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.
6302	Bed linen, table linen, toilet linen and kitchen linen.
6202	Women's or girls' overcoats, car-coats, capes, cloaks, anoraks, ski-jackets, wind-cheaters, wind-jackets and similar articles, other than those of heading 6204.
6103	Men's or boy's suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.

Amongst these eight categories, Pakistan is the top exporter of Bed linen, table linen, toilet linen, and kitchen linen (HS-4 Digit Code: 6302) amongst other comparable countries like India, Sri Lanka, Turkey, and Bangladesh. As shown in Figure 3A, for this category Pakistan caters to 15 percent of the total exports to the world.

Fig. 3A. Percentage of Top Eight Textile Products Exported by Countries as a Proportion of Total World Exports
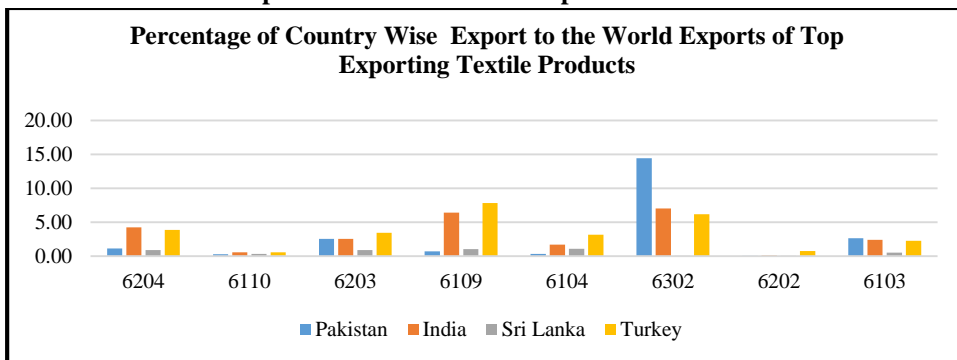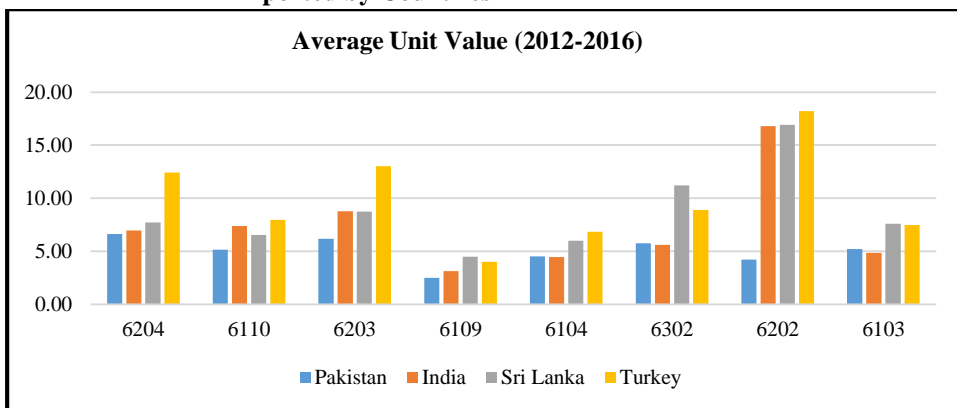

Source: UN Comtrade database.

As we analyse the average unit value (a proxy for the quality of the product) of all these categories across these countries, the situation becomes alarming. The average unit value of bed linens in Sri Lanka is much higher than in Pakistan and quite similar to the unit value in India. Figure 3B shows that on average the quality of the product where Pakistan takes the lead in the world market (i.e., HS-4 Digit Code: 6302) is low, which can easily be replaced by India, Turkey, and Sri Lanka in the near future.

We also see that India has upgraded its unit value in other product categories, especially in stitched women's and girls' clothing (HS-4 Digit Code: 6202), due to which it is making its position stronger in the world market over time. Pakistan, on the other hand, is quite low in terms of the unit value for all the top eight categories when compared to its competitors.

Fig. 3B. Average Unit Value of the Top Eight Textile Products Exported by Countries

Source: UN Comtrade database.

4.2. Data and Methodology

To identify the intermediate inputs used by the textile sector in Pakistan, we use the Census of Manufacturing Industries for Punjab (CMI), 2005. Then out of those intermediate inputs, we list India's top eight imported intermediate inputs, based on their high correlations between intermediate inputs and the export value in the textile sector of India. The inputs in the CMI were coded based on ISIC 3.1, which were converted into comparable HS-2 Digit Codes. We extend this list to HS-6 Digit Code to identify detailed input categories within each HS-2 Digit Category. We then identify the tariff rates for all these HS-6 Digit categories for Pakistan, India, and Sri Lanka for the year 2014 from Tariff Analysis Online by the World Trade Organisation (WTO). Next, we create a unique ID, identifying each country, sector, input, and year, using it to merge the inputs with their respective tariff rates and import values for all three countries for that respective year. Next, we calculate the export unit value and the import unit value for all the HS-6 Digit categories based on their HS codes using the UN Comtrade database. Then using this data, we calculated the average unit value at HS-6 Digit Code. The average unit value is used as a close proxy for the quality of the intermediate inputs available in the local market[11]. Next, the average unit value is compared to the import unit value to identify the Tariff Reduction Zones (TRZs). Finally, we use this information to generate a list of HS-8 Digit Codes to identify the name of the specific intermediate inputs that fall within each respective TRZ.

The list of inputs at HS-2 Digit Code important for India is summarised in Table 4 below.

Table 4

Top Intermediate Inputs for India's Textile Sector

HS Code (2 digit)	Intermediate Inputs
50	Silk
51	Wool, fine or coarse animal hair: horsehair yarn and woven fabric
52	Cotton
54	Man- Made Filaments
56	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles of thereof
58	Special Woven Fabrics; tufted textile fabrics; lace ; tapestries; trimmings; embroidery
59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use
60	Knitted or Crocheted Fabrics

Source: Author's own calculation.

[11] The average unit value is the average of the export unit value and the import unit value available to the Pakistani manufacturer.

We further classify the above intermediate inputs into the HS-6 Digit[12] for all of these categories to suggest tariff reductions. However, we take a *conservative approach* to this. We do not propose to reduce tariffs on the entire HS-6 Digit code categories, which fall within each HS-2 Digit category listed above in Table 4. Rather, we narrow down our list by comparing the unit value of the imported input with the average unit value of the intermediate inputs available to the Pakistani textile manufacturer of all the HS 6- Digit categories.

4.3. Identifying the Intermediate Inputs Based on their Relevance in Tariff Reduction Zones (TRZs); Textile Sector

We generate a list of intermediate inputs based on the conservative approach discussed in the previous subsection. Figures 4A until 4H show a graphical representation of our main results. The x-axis marks all different inputs at the HS-6 Digit code for each respective HS-2 Digit Code category mentioned in Table 4. The y-axis measures the difference between the average unit value available to a Pakistani manufacturer and the import unit value for each respective HS-6 Digit input.

For example, figure 4A shows a diagrammatic representation of each HS-6 Digit Code for Silk. Zero is kept as a benchmark where the average unit value of the intermediate input available to the local manufacturer is equal to the import unit value of the same input. This implies that for this category, the quality of the locally available input, on average, and the quality of the imported input are equal. A negative value means that the imported inputs are of high quality and hence should be imported[13]. The maroon horizontal lines show the standard deviation (which takes a value from -3 to +3) of the import unit value from the average unit value.

We can see that two categories fall within the bounds of –1 and +1 (500500 and 500600). Therefore, they qualify in the insignificant zone where tariff reductions nor protections should be proposed. Two categories 500300 and 500400 fall more than three deviations below the average unit value, which emphasises that the quality available to the local manufacturer on average in Pakistan is much lower than the quality of these imported inputs. Therefore, we propose that they qualify in the extremely important zone where tariff reductions should be made. 500700, 500710, and 500790 are the HS-6 Digit Code categories for which the import unit value is significantly lower than the average unit value implying that the average quality available to the local manufacturer is significantly higher than the imported intermediate input quality. Therefore, we recommend observing the existing tariff rates or even pushing up the tariff rates to counter the impact of reductions in tariffs on the revenues generated by the government. We extend this analysis to HS- 6 Digit Code categories for other intermediate inputs within the textile sector as listed in Table 4.

Similarly, in Figure 4B for Wool, Fine or Coarse Hair (HS Code 51), inputs with the HS-6 Digit Code of 510820 and 511119 lie in the extremely important tariff reduction zone. Only one input, i.e., 510529, lies in the important tariff reduction zone as the deviation is between -2 and -3 standard deviations. Four input categories fall under the

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[12] This can further be classified into 8-digit HS code to identify the specific input.

[13] A positive value means that the average unit value available to a Pakistani manufacturer is more than the import unit value; hence, there is no need to import more.

moderately important zone for tariff reduction, i.e., 510220, and 510510. 510990 and 511219. Using these graphs, we identify the list of all the intermediate inputs at HS-6 Digit Code that falls under each respective tariff reduction zone (TRZ), for each of the categories listed in Table 4.
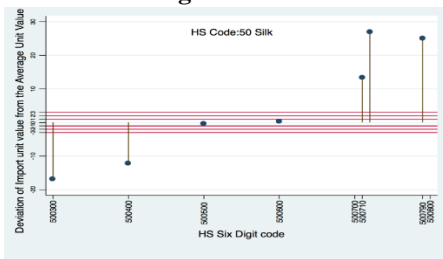
As a next step in Table 5A, we provide a tabular representation of the intermediate inputs at the HS-6 Digit Code that qualifies under the category of being extremely important for the tariff reduction zone amongst all the categories mentioned in Table 4. For cross-country comparisons, the Table also shows the tariff rates applied by India, Pakistan, and Sri Lanka on these inputs to identify where the scope of tariff reduction in Pakistan exists. For instance, in the first three input categories, India's Tariffs are higher than those of Pakistan. This is mainly because, in these categories, India itself has a high export unit value (i.e., good quality of inputs is being produced within India). Whereas, for the remaining categories, Pakistan has a higher tariff rate than India, implying that the margin of tariff reduction exists for these inputs. On the contrary, Sri Lanka, as a special case, has a consistent zero tariff rate for all these inputs. Finally, we extend the list of the intermediate inputs to the HS-8 Digit Code (and in some cases to the HS-10 Digit Code) in Table 5B to give specific intermediate inputs.

Table 5 is a tabular representation of all the inputs under the HS-6 Digit Code category that falls under the extremely important tariff reduction zone. The list of tariff rates applied by Pakistan, India, and Sri Lanka on these input categories is also stated in the table for comparison. Again, we extend their description to the HS-8 Digit code in Appendix 1 (Table A1).

Appendix 2 lists the intermediate inputs at the HS-2 Digit code and HS-6 Digit code that fall under the zone of being moderately important for tariff reduction in Pakistan. We also provide the tariff rates imposed by Pakistan, India, and Sri Lanka[14].

Fig. 4: Graphical Representation of the Intermediate Textile Inputs based Upon Their Relevance in Different Tariff Zones (HS 6 Digit Code)

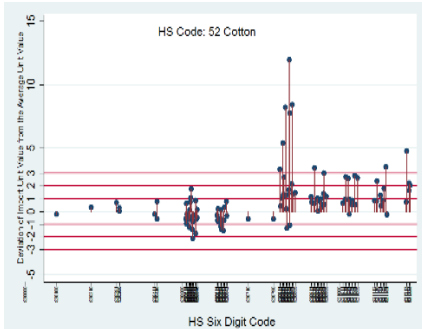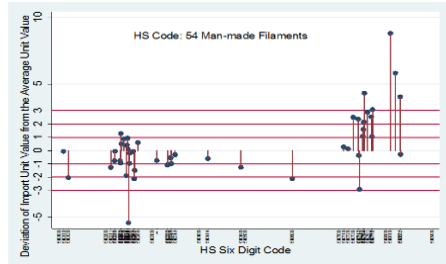| **Fig. 4A: Classification of Silk at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value**	**Fig. 4B: Classification of Wool, fine or Coarse Animal hair at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value**
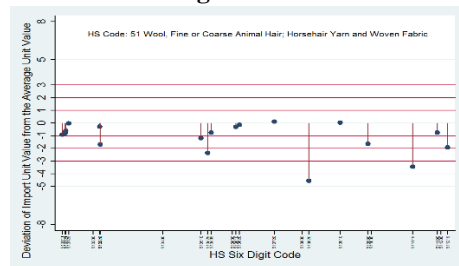
[14] Using similar methodology we generated a list of intermediate inputs at the HS-2 Digit and HS-6 Digit Code that are insignificantly important and irrelevant for tariff reductions that can be made available.
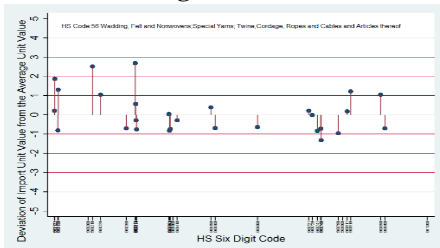
Fig. 4C: Classification of Cotton at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value

Fig. 4D: Classification of Man-made filaments; strips and the like of man-made textile at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value

Fig. 4E: Classification of Wadding, Felt and Nonwovens at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value

Fig. 4F: Classification of Special Woven Fabrics at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value
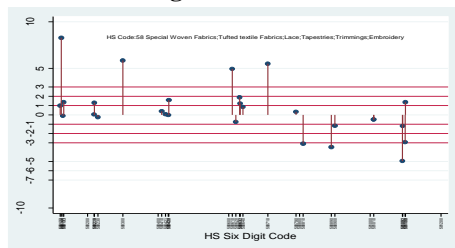
Fig. 4G: Classification of Impregnated or Laminated Textile fabrics at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value

Fig. 4H: Classification of Knitted or Crocheted Fabrics at the 6-digit HS Code level; Deviation of Import Unit Value from the Average Unit Value
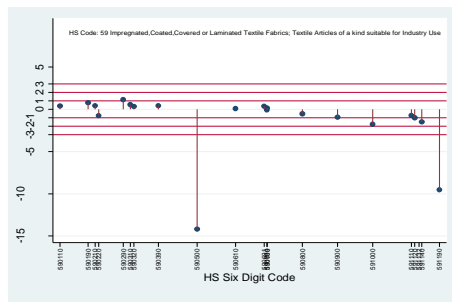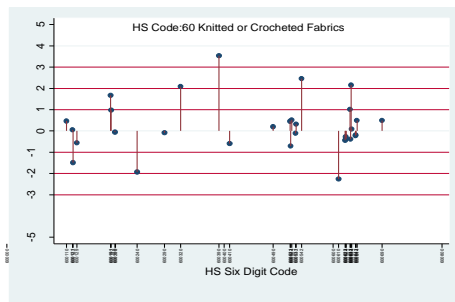

Source: Author's Own Calculations

Table 5

Inputs, Classified as Being Extremely Important for Tariff Reduction

HS 2 Digit Code	HS 6 Digit Code	Product Description	Pakistan's Tariff	India's Tariff	Sri Lanka's Tariff
		Tariffs Applied by Pakistan, India and Sri Lanka on tariff category classified as EXTREMELY IMPORTANT for Pakistan			
50	500300	Silk waste (including cocoons unsuitable for reeling, yarn waste and garneted stock)	3	15	0
50	500400	Silk; yarn (other than yarn spun from silk waste), not put up for retail sale	3	10	0
51	510820	Yarn; of fine animal hair, combed, not put up for retail sale	3	10	0
51	511119****	Fabrics, woven; of carded wool or of carded fine animal hair, containing 85% or more by weight of wool or of fine animal hair, of a weight exceeding 300g/m2	16	0	0
54	540249*	Yarn, synthetic; filament, monofilament (less than 67 decitex), other than high tenacity or textured yarn, single, untwisted or twisted 50 turns or less per meter, n.e.c. in heading no. 5402, not for retail sale, not sewing thread	11	10	0
58	580810**	Braids; in the piece	20	10	0
58	580890**	Ornamental trimmings; tassels, pompons and similar articles; ornamental trimmings in the piece, without embroidery, other than knitted or crocheted	20	10	0
58	581091**	Embroidery; with visible ground, of cotton, in the piece, in strips or in motifs	20	10	0
59	590500**	Textile wall coverings of fabrics impregnated, coated, covered or laminated	20	10	0
59	591190	Textile products and articles for technical uses; n.e.c. in heading no. 5911	7	10	0

Source: Author's Own Calculation.

*Indicates that Pakistan's Tariffs are higher than India by less than or equal to 5 percent.

** Indicates that Pakistan's Tariffs are higher than India by more than 5 percent but less than or equal to 10 percent.

*** Indicate that Pakistan's Tariffs are higher than India by more than 10 percent but less than or equal to 15 percent.

**** Indicate that Pakistan's Tariffs are higher than India's by more than 15 percent.

Table 6 is a tabular representation of all the inputs under the HS-6 Digit Code category that fall under the important tariff reduction zone. The list of tariff rates applied by Pakistan, India and Sri Lanka on these input categories are also stated in the table for comparisons. Again, we extend their description to the HS-8 Digit code in Appendix1. Table A2.

Table 6

Inputs, Classified as being Extremely Important for Tariff Reduction

HS 2 Digit Code	HS 6 Digit Code	Product Description	Pakistan's Tariff	India's Tariff	Sri Lanka's Tariff
		Tariffs Applied by Pakistan, India and Sri Lanka on tariff category classified as IMPORTANT for Pakistan			
51	510529	Wool; wool tops and other combed wool, other than in fragments	3	7.5	0
52	520533*	Cotton yarn; (not sewing thread), multiple or cabled, of uncombed fibers, 85% or more by weight of cotton, 232.55 to 192.31 decitex (44 to 52 metric number) per single yarn, not for retail sale	11	10	0
54	540120	Sewing thread; of artificial filaments, whether or not put up for retail sale	3	10	0
54	540261*	Yarn, synthetic; filament, monofilament (less than 67 decitex), of nylon or other polyamides (not high tenacity or textured), multiple (folded) or cabled, not for retail sale, not sewing thread	11	10	0
54	540600*	Man-made filament yarn (other than sewing thread), put up for retail sale	11	10	0
54	540744****	Fabrics, woven; containing 85% or more by weight of filaments of nylon or other polyamides, printed	16	0	0
58	581099**	Embroidery; with visible ground, of textile materials (other than cotton and man-made fibres), in the piece, in strips or in motifs	20	10	0
60	600610**	Fabrics; knitted or crocheted fabrics, other than those of headings 60.01 to 60.04, of wool or fine animal hair	20	10	0

Source: Author's Own Calculations.

   *Indicates that Pakistan's Tariffs are higher than India by less or equal to 5 percent.

   ** Indicates that Pakistan's Tariffs are higher than India by more than 5 percent but less than or equal to 10 percent.

   *** Indicate that Pakistan's Tariffs are higher than India by more than 10 percent but less than or equal to 15 percent.

   **** Indicate that Pakistan's Tariffs are higher than India's by more than 15 percent.

5. CONCLUSION AND RECOMMENDATIONS

Intermediate input tariff reductions can make higher-quality inputs available to local manufacturers, allowing them to move up the export ladder. Tariff reductions on imported intermediate inputs can boost Pakistan's exports on the one hand, but they can also have a negative impact on government revenue, and this may potentially mean more competition for local manufacturers of these intermediate inputs. Therefore, a more careful analysis is needed to identify the inputs that are not available in high quality in technologically constrained countries, particularly those transitioning from import substitution to export promotion. As a result, we propose a methodology that follows a conservative approach to generate a specific list of intermediate inputs on the assumption that if they are provided to local exporting firms at a lower cost, they will help them produce a higher unit value final product to export.

Our first set of results establishes a direct and significant relationship between the import of intermediate inputs and the export performance indicators via the channel of intermediate input tariffs. The estimates are based on an instrumental variable approach combined with country fixed effects using the data from more than 160 countries from the time period 2000 to 2015. The results show that any reduction in input tariffs considerably increases imports of intermediate inputs, which eventually increases export performance indicators. Results indicate a strong correlation between tariff reductions and increases in export value across major exporting sectors for five countries: Pakistan, India, Sri Lanka, Turkey, and Bangladesh.

As a next step, based upon the *conservative approach,* we propose a new methodology to identify the intermediate input product categories where the tariff cuts should be made significantly and where they should be reduced marginally. We examine this methodology by using the case of Pakistan's textile sector. Applying this methodology helps us generate the list of intermediate inputs in each respective Tariff Reduction Zones (TRZs) and Tariff Protection Zones (TPZs). We argue that for Pakistan to learn, India is a classic example of drastic tariff reductions on intermediate inputs and export growth. Therefore, we use the case of India to identify the inputs used in their textile sector which have a high correlation with their export value, so that if Pakistan follows suit, it can also upgrade the quality of the products they manufacture in the textile sector to export. Finally, we compare Pakistan's average tariff rates for each input to that of India to identify the categories where the potential for tariff reduction exists. This methodology can also be extended to the other sectors of Pakistan where there is high export potential.

APPENDIX1

Table A1

Inputs, Classified as being Extremely Important for Tariff Reduction at HS-8 Digit Category

TARIFF CATEGORY: EXTREMELY IMPORTANT	
500300	**Silk Waste (Including Cocoons Unsuitable for Reeling Yarn Waste and Garneted Stock)**	
	50030010	Mulberry Silk Waste
	50030020	Tussar Silk Waste
	50030030	Eri Waste
	50030040	Munga Waste
	50030090	Others
	50030011	Spailed cocoon, husk, frison, frigon, not carded or combed
	50030012	Garneted Stock, not carded or combed
500400	**Silk Yarn (other than yarn spun from silk waste), not put up for retail sale)**	
	50040010	100% Mulberry Dupion Silk Yarn
	50040090	Others
510820	**Yarn, of fine animal hair, combed, not put up for retail sale**	
		Carded containing 85% or more by weight of fine animal hair
	51081011	Yarn fine hair of goats carded, not put up for retail sale containing 85% or more by weight of goats hair
	51081019	Non-retain carded other animal hair yarn
		5108101910 Yarn of fine hair of endangered animals carded not put up for retail sale containing 80% or more by weight of other animal hair
		5108101990 Yarn of fine hair of animal, carded not put up for retail sale containing 85% or more by weight of other animal hair
	51081090	Other
		5108109010 Yarn of fine hair of other endangered animal, carded not put up for retail sale, containing less than 85% by weight of other animal hair
		5108109090 Yarn of fine hair of other animal, carded not put up for retail sale, containing less than 85% by weight of other animal hair
511119	**Fabrics, Wovers of carded wool or of carded fine animal hair, containing 85% or more by weight of wool or of fine animal hair, of a weight exceeding 300g/m²**	
	51111910	Unbleached woven fabrics
	51111920	Bleached woven fabrics
	51111930	Dyed woven fabrics
	51111940	Printed woven fabrics
	51111990	Other of fine animal hair
540249	**Yarn synthetic filament, monofilament (less than 67 decitex), other than high tenacity or textured yarn, single, untwisted or twisted 50 turns or less per metre, n.e.c. in heading no. 5402, not for retail sale, not sewingthread**	
	54024910	Filament single yarn of polyethylene (the rupture strength is bigger than or equal to 22Cn/dtex, and the initial modulusis bigger than or equal to 750cN/dtex, untwisted or with a twist not exceeding 50 turns/m, not put up for retail sale)
	54024990	Other polyethylene yarn
580810	**Braids, in the piece; ornamental trimmings in the piece, without embroidery other than knitted or crocheted; tassels, pompons and similar articles**	
	58081000	Braids in the piece
		5808100020 Braids of abaca or ramie, in pieces (suitable for manufacturer or decoration of headgear)
		5808100090 Braids of other textile materials in pieces
580890	**Ornamental trimmings tassels, pompons and similar articles ornamental trimmings in the piece, without embroidery, other than knitted or crocheted**	
	58089000	Ornamental trimmings strips not emproided in pieces other than knitted or crocheted tassels pompons and similar articles
581091	**Embroidery, with visible ground of cotton, in the piece, in strips or in motifs**	
	58109100	Embroidery of cotton, with visible ground, in pieces in strips or in motifs
590500	**Textile well coverings of fabrics impreonated coated covered or laminated**	
	59050000	Textile Wall Coverings
591190	**Textile products and articles for technical used n.e.c. in heading no. 5911**	
	59119000	Other specialised technical uses textile products and articles (see not 7 in chapter 59)
		5911900010 The self-achieve circular polishing pad for semiconductor wafer fabrication, specified in Note 7 to this chapter
		5911900090 Other textile products and articles for technical used specified in Note 7 to this chapter

Table A2

Inputs, Classified as being Important for Tariff Reductions at HS-8 Digit Category

TARIFF CATEGORY: IMPORTANT	
510529	Wool; Wool Tops and Other Combed Wool, Other than in fragments
51052910	Other wool tops
51052990	Others
520533	Measuring per single yarn less than 232.56 decitex but not less than 192.31 decitex (exceeding 43 me
	Measuring per single yarn less than 232.56 decitex but not less than 192.31 decitex (exceeding 43 metric number but not exceeding 52 metric number per single yarn): Grey
52053320	Measuring per single yarn less than 232.56 decitex but not less than 192.31 decitex (exceeding 43 metric number but not exceeding 52 metric number per single yarn): Bleached
52053330	Measuring per single yarn less than 232.56 decitex but not less than 192.31 decitex (exceeding 43 metric number but not exceeding 52 metric number per single yarn): Dyed
52053390	Measuring per single yarn less than 232.56 decitex but not less than 192.31 decitex (exceeding 43 metric number but not exceeding 52 metric number per single yarn): Other
540120	Sewing thread of man-made filaments, whether or not put up for retail sale
54012000	Of paper yarn: Of artificial filaments
540261	Yarn, synthetic; filament, monofilament (less than 67 decitex), of nylon or other polyamides (not high tenacity or textured), multiple (folded) or cabled, not for retail sale, not sewing thread
54026100	Other yarn, multiple (folded) or cabled: Of nylon or other polyamides
540600	Man-made filament yarn (other than sewing thread), put up for retail sale
54060010	Other: Man-made filament yarn (other than sewing thread), put up for retail sale: Synthetic filament yarn
54060020	Other: Man-made filament yarn (other than sewing thread), put up for retail sale: Artificial filament yarn
54061000	Synthetic filament yarn
54062000	Artificial Filament yarn
540744	Printed Woven Fabrics Of Synthetic Filament Yarn, Including Woven Fabrics Obtained From Materials Of Heading 5404
54074410	Printed: Nylon brasso
54074420	Printed: Nylon georgette
54074430	Printed: Nylon Taffeta
54074440	Printed Nylon Sarees
54074490	Printed other
581099	Embroidery in the piece, in strips or in motifs
58109900	Of man-made fibers: Of other textile materials
600610	Other knitted or crocheted fabrics
60061000	of artificial fibers: of wool or fine animal hair

Source: Author's own Calculation

APPENDIX 2

Table A1

*Inputs, Classified as being Moderately Important for Tariff Reductions
at HS 8 Digit Category*

		TARIFF CATEGORY: MODERATELY IMPORTANT			
HS 2 Digit Code	HS 6 Digit Code	Product Description	Pakistan's Tariff	India's Tariff	Sri Lanka's Tariff
51	510220	Hair; coarse animal hair, not carded or combed	3	5	0
51	510510	Wool; carded	3	10	0
51	510990	Yarn; of wool or of fine animal hair, containing less than 85% by weight of wool or fine animal hair, put up for retail sale	11	10	0
51	511219	Fabrics, woven; of combed wool or combed fine animal hair, containing 85% or more by weight of wool or fine animal hair, of a weight exceeding 200g/m2	16	0	0
52	520522	Cotton yarn; (not sewing thread), single, of combed fibers, 85% or more by weight of cotton, less than 714.29 but not less than 232.56 decitex (exceeding 14 but not exceeding 43 metric number), not for retail sale	11	10	0
52	520532	Cotton yarn; (not sewing thread), multiple or cabled, of uncombed fibers, 85% or more by weight of cotton, 714.28 to 232.56 decitex (15 to 43 metric number) per single yarn, not for retail sale	11	10	0
52	520542	Cotton yarn; (not sewing thread), multiple or cabled, of combed fibers, 85% or more by weight of cotton, 714.28 to 232.56 decitex (15 to 43 metric number) per single yarn, not for retail sale	11	10	0
52	520621	Cotton yarn; (not sewing thread), single, of combed fibers, less than 85% by weight of cotton, measuring 714.29 decitex or more, (not exceeding 14 metric number), not for retail sale	11	10	0
52	520624	Cotton yarn; (not sewing thread), single, of combed fibers, less than 85% by weight of cotton, less than 192.31 but not less than 125 decitex (exceeding 52 but not exceeding 80 metric number), not for retail sale	11	10	0
52	520625	Cotton yarn; (not sewing thread), single, of combed fibers, less than 85% by weight of cotton, measuring less than 125 decitex (exceeding 80 metric number), not for retail sale	11	10	0
52	520631	Cotton yarn; (not sewing thread), multiple or cabled, of uncombed fibers, less than 85% by weight of cotton, 714.29 decitex or more (not exceeding 14 metric number) per single yarn, not for retail sale	11	10	0
52	520833	Fabrics, woven; containing 85% or more by weight of cotton, dyed, 3-thread or 4-thread twill, including cross twill, weighing not more than 200g/m2	20	10	0

Continued—

Table A1—(*Continued*)

52	**520842**	**Fabrics, woven; containing 85% or more by weight of cotton, of yarns of different colors, weighing more than 100g/m2 but not more than 200g/m2**	**20**	**0**	**0**
54	540211	Yarn, synthetic; filament, monofilament (less than 67 decitex), of high tenacity nylon or other polyamides, of aramids, not for retail sale, not sewing thread	11	10	0
54	540244	Yarn, synthetic; filament, monofilament (less than 67 decitex), other than high tenacity or textured yarn, elastomeric, single, untwisted or twisted 50 turns or less per meter, not for retail sale, not sewing thread	7	10	0
54	540262	Yarn, synthetic; filament, monofilament (less than 67 decitex), of polyesters (not high tenacity or textured), multiple (folded) or cabled, not for retail sale, not sewing thread	11	10	0
54	540332	Yarn, artificial; filament, monofilament (less than 67 decitex), of viscose rayon (not high tenacity), single, twisted more than 120 turns per meter, not for retail sale, not sewing thread	3	10	0
54	540333	Yarn, artificial; filament, monofilament (less than 67 decitex), of cellulose acetate, single, not for retail sale, not sewing thread	11	10	0
54	540490	Filament, synthetic; strip and the like (e.g.. artificial straw), of synthetic textile materials of an apparent width not exceeding 5mm	11	10	0
56	560750	Twine, cordage, ropes, cables; of synthetic fibers other than polyethylene or polypropylene, whether or not plaited, braided or impregnated, coated, covered or sheathed with rubber or plastics	20	10	20
58	580900	Fabrics, woven; of metal thread and metallised yarn of heading no. 5605, of a kind used in apparel, as furnishing fabrics or similar purposes; n.e.c. or included	20	10	0
58	581092	Embroidery; with visible ground, of man-made fibers, in the piece, in strips or in motifs	20	10	0
59	591000	Textiles; transmission or conveyor belts or belting, of textile material, whether or not impregnated, coated, covered or laminated with plastics, or reinforced with metal or other material	20	10	0
59	591120	Textile products and articles for technical uses; bolting cloth, whether or not made up	11	10	0
59	591140	Textile products and articles for technical uses; straining cloth of a kind used in oil presses and the like, including that of human hair	11	10	0
60	600122	Fabrics; looped pile fabrics, of man-made fibers, knitted or crocheted	20	10	0
60	600240	Fabrics; knitted or crocheted, other than those of heading 60.01, of a width not exceeding 30 cm, containing by weight 5% or more of elastomeric yarn but not containing rubber thread	20	10	0

Note: Products where the Pakistani tariff is high and extremely different than Indian's tariff rate has been highlighted.

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