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Regionally Competitive Energy Tariffs and Textile Sector's Competitiveness

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A Report by
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Regionally Competitive Energy Tariffs and Textile Sector's Competitiveness

MARCH 2021

The installation of new machinery worth over Rs. 2 billion in progress at the weaving section of Kohinoor Mills Ltd

ACKNOWLEDGEMENTS

This study was commissioned by All Pakistan Textile Mills Association (APTMA) to the Pakistan Institute of Development Economics (PIDE), Islamabad. The report has been prepared under the supervision of Dr. Nadeem Ul Haque, Vice Chancellor, PIDE. The report is prepared by the research team of PIDE comprising Dr. Ahmed Waqar Qasim, Research Economist; Saddam Hussein, Research Economist; Mohammad Shaaf Najib, Staff Economist and Dr. Uzma Zia, Senior Research Economist. The report has also been peer-reviewed by Shahid H. Kardar, Vice Chancellor, Beaconhouse National University (BNU) and Dr. Hafeez A. Pasha, Professor Emeritus, BNU.

FOREWORD

Confused, inconsistent and unsteady policy plagues investors in Pakistan. The horizon for them remains hazy or dark!. Is it any wonder then that Pakistan's growth (as well as concomitant sectoral growth) has been lackluster?

Policy seldom takes the big picture into account. It is rushed to meet the current emergency without a long view. Government of the day is always trigger happy to claim credit and blame the past lacking both the patience or the capacity to make considered, well-researched and holistic decisions.

With policy capacity, attention span and processes so attenuated, it is not surprising to see vested interests of all sorts overtaking government. Real resources are expended to capture policy rather than develop businesses and grow the economy.

As a good example of the how policy continues to fumble, review the energy crisis. The direct loss of the poorly conceived energy policy over the last 13 years amounts to Rs. 7 trillion and continues to grow. Problems that have been discussed in the media have persisted without even a serious discussion or debate. Some of these are

- The sector continues to be managed centrally without configuring self-sufficient cost centers.
- Technology (such as smart, pay as you go, meters, smart grid) is little used.
- IPP issue has never been solved; instead, we continue to sign more contracts.
- Line losses persist without attention.
- Pricing continues to be penalized productive sectors, developing confused cross subsidies and penalizing bulk industrial units.
- Consumers and investors continue to bear the burden of policy mistakes of the past.
- Energy planning is whimsical leading to long periods of large excess supply and demand.

These are only some issues that come to mind. I could give you a larger list. But this is enough to make the point that problems persist, and policy has does not focus.

Surprisingly, the government has never put in any effort or resources into analyzing or researching these issues and developing a comprehensive policy on energy or any of these issues. This allows various vested interests such as the labor in the power sector, IPPs, suppliers, donors, and various industry groups. Policy developed without serious deliberation, research and empowering of the constituents of the sector, merely lays grounds for capture and waste of resources. We see ample evidence of that.

We present here a study we did for APTMA to review the issue of ricing energy costs due to the policy of passing on the cost of inability to reform to the consumer on the textile industry. To highlight the policy consistency issues concerning the textile sector of Pakistan, this report analyses the Regionally Competitive Energy Tariffs (RCET) given to the textile sector and their impact on the textile sector, particularly the exports. The report argues that the government's policy of RCET has boosted value-added textile exports and now its abandonment by the government will have serious repercussions for the industry.

Under the RCET policy, the government of Pakistan offered RLNG tariff at $6.5/mmbtu and electricity tariffs at 7.5 cents/kWh. The electricity tariffs, however, were suddenly raised to 9 cents/kWh in September 2020. The change has been worrisome for the industry, as energy tariffs have the most significant impact among all the factors that make textile exports regionally uncompetitive. It also implies that a small change in the factor costs brings with it a substantial impact on the country's export performance.

It is pertinent to note that, Pakistan has robust untapped export potential in the textile sector. To unfold this inherent potential, large investment in machinery, enhanced skill set, and product development is critical. Nonetheless, success in these avenues is not possible in the absence of supporting policies from the government, particularly in the backdrop of tough competition within the textile sector in the region.

Presently, the textile sector is experiencing expansion and up-gradation, all because of the RCET policy that has turned profits from the business into positive territory. The sector is seeking more finances and asking for more technological up-gradation support. Now, to optimize the full potential of the textile sector and retain as well as enhance the existing customer base, the consistent implementation of RCET policy is the need of the time. However, with the whimsical policy signals, we would not be able to develop investors' confidence, and reap the full potential benefits of the sector will remain a far-distant target.

The COVID pandemic, where it has damaged the economic situation worse, has also provided us a chance to re-orient our textile sector according to the needs of the time. The policies from the government that are supportive like, the RCET policy, will play a key role as a catalyst in this reorientation.

Finally, reform should be a top priority. Without deep reform, the energy sector will continue to bleed and eventually force our energy prices to rise to uncompetitive levels, incapacitating our productivity, growth, and investment.

I would like to thank the All-Pakistan Textile Mills Association (APTMA) and Mr. Shahid Sattar, Executive Director, APTMA, and Gohar Ejaz Patron of APTMA for providing us an opportunity and for giving generously of their time to work with us. We welcome this opportunity to collaborate with domestic industry.

PIDE is Pakistan's premiere think tank and collaborates with a lot of ministries, regulatory agencies, and many private and public agencies research on contract basis and otherwise. Such collaborations are of extreme importance to developing the economy and better policy. So, I urge all to collaborate with PIDE.

Nadeem Ul Haque
Vice-Chancellor

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Executive Summary

The economic significance of the textile sector in Pakistan is undeniable. The sector contributes around 60% of the total export earnings and provides employment opportunities for around 40% of the total labor force. Although, substantial export earnings of Pakistan are based on textile products; though, its share in the international textile exports is considerably low. Out of a total of $ 792 billion of textile exports, Pakistan contributes merely 1.7%. The sector has so far managed to endure but remained somewhat stagnant due to high manufacturing expenses, recurrent power shortages, high energy costs, and flawed government strategies. Yet, the textile sector outperformed during the current pandemic and recorded a 10.79% growth in exports during January 2021, MoM basis.

In the textile sector, energy cost is the leading component in terms of conversion cost. Among all the factors that make the textile sector of Pakistan regionally un-competitive, energy tariff is at the core. Since it makes up around 35-40% of conversion cost in textile, therefore, to delve into the way forward, it is pertinent to ensure the availability of energy at regionally competitive tariff rates.

The recent outshining performance of the textile sector can partially be attributed to the Regionally Competitive Energy Tariff (RCET) policy that the government has adopted, since late 2018. Under the RCET policy, the government offers a regionally competitive RLNG/Gas tariff at the rate of $ 6.5/mmbtu and fixed electricity tariffs at 7.5 cents/kWh for export-oriented units of the zero-rated sectors. In September 2020, the electricity tariffs were revised from 7.5 cents/kWh to 9 cents/kWh. Against this backdrop, the study aims to evaluate how the RCET policy is contributing towards getting the textile sector regionally competitive. The study accomplished this task by comprehensively analyzing the costs of production of all listed companies along with primary data gathered via detailed questionnaires, field visits, and online interviews.

The findings of the study show that the average share of the power and energy cost observes a 04-percentage point drop after the implementation of the RCET policy and stands at 32% of the conversion cost. At the aggregate level, the total sales revenue and export sales revenue increased by 14%, while local sales revenue increased by 19%. Both spinning and weaving subsectors

recorded higher growth in exports than growth in local sales. Moreover, the quarterly comparison indicates the 22% increase in sales during the first quarter of 2021, compared to the same quarter of 2020.

The recent surge in investment initiatives by the textile industry compared to almost stagnant investment growth before the RCET policy discloses the positive spill-over effects of the policy. The estimates show that **a 10% increase in the energy tariff causes a 1.1% decrease in investment** within the textile sector of Pakistan. The average capital employed is around Rs. 3.8 billion in the listed textile units. Moreover, the analysis also indicates that around 75% of textile units undertake new investment initiatives when the energy tariffs fall. So, out of 571 textile units, it is expected that 387 units will venture on some sort of new investment initiative. The sector at aggregate will observe a minimum surge of around Rs. 88 billion in terms of new investments due to RCET policy.

Remarkably, the recent announcement by the State Bank of Pakistan (SBP) declares that out of recent loan applications under Temporary Economic Relief Facility (TERF), around 60% came from the textile sector alone. Moreover, the textile sector has experienced approximately $1.60 billion investment during the first half of the current fiscal year. These overwhelming loan demands for new investment from the textile sector are partially due to competitive energy tariff rates and partially due to concessionary mark-ups.

Similarly, the semi-elasticity of employment to the energy and power indicates that **a 10% increase in the energy tariff makes a firm lay off 62 employees** on average. Since the number of textile units is around 521, hence, a 10% energy tariff increment also brings a loss of 32,302 employment opportunities. Our data also indicates that the average textile units provide employment opportunities for around 2,303 individuals. Consequently, a 10% increase in the energy tariff takes around 14 textile units at the brink of closing the operations.

To analyze how significant RCET is for the sustainability and functionality of the textile sector, we undertook a simulation exercise. The exercise was performed on 8 textile products, where we removed the competitive energy tariffs and compared the price offered by Pakistan in the international market with regional countries that include Bangladesh, China, and India. The results indicate that the upstream industry (spinning and weaving) will become regionally uncompetitive

in the event of the RCET policy withdrawal. The spinning sector will not only lose international market share but also put domestic sales in jeopardy. While downstream industry would remain in the competition even without RCET rates but would lose the price rankings.

Furthermore, in-depth interview and field survey reveals three main challenges that the textile sector is currently facing are;

- Policy Issue: ***unpredictable, inconsistent, and non-inclusive***
- Raw Material: ***poor quality, falling production, absence of R&D***
- Energy Issues: ***unending worries about tariff shift, transmission, and supply issues***

The study also points out that the energy tariffs in Pakistan are high due to governance issues, operational and commercial inefficiencies, lack of effective planning, flawed policies, distorted pricing strategy, irrational cross-subsidization, and most importantly sub-optimal energy mix. The unit cost of service of electricity is around Rs.13.7/kwh (8 cents/kWh) during 2020. Nonetheless, the unit energy price set by the policymakers attempts to cover all these inefficiencies and much higher than service cost for the industrial consumers. Naturally, it raises the question that why a foreign importer would pay for our systemic inefficiencies? In short, the study finds convincing evidence that the electricity tariff above 7.5 cents/kWh is not competitive, particularly within the region. Therefore, the call by the industry for reverting to 7.5 cents/kWh tariff for electricity along with $6.5/mmbtu for Gas/RLNG is not without legitimate grounds.

1. Pakistan's Textile Sector: Introduction

The textile sector in Pakistan is one of the vital economic drivers for the economy and constitutes 8.5% of GDP. Out of the total export earnings, around 60% come only from the export of textile products. The textile sector employs around 40% (19 million workers) of the total labor force and contributes 46% in total manufacturing of Pakistan.[1] In aggregate, the textile and clothing sector supports around 29% of value-addition in manufacturing across Pakistan (WDI, 2006). Pakistan is the 8th largest exporter of cotton in Asia, and it has the largest yarn spinning capacity after India and China. The sector has a strong linkage with agriculture and cottage industries and the livelihood of around 25 million individuals, either directly or indirectly, depends upon the textile sector. Moreover, the inherent potential for higher value-addition at subsequent stages of the production chain further signifies the importance of the textile sector for Pakistan.

Having said that, the performance of the sector has suffered a lot over the last 10-15 years due to weak policy support. The export and growth performance of the sector suffered greatly due to high manufacturing expenses, recurrent power shortages, and flawed strategies. Resultantly, textile exports remained merely around $12.78 billion during 2020 (SBP). However, the textile sector has outperformed during the current pandemic and recorded a 10.79% growth in exports during January 2021 over the corresponding month of last year (PBS). This recent extraordinary performance of the textile sector can partially be attributed to the regionally competitive energy tariff (RCET) policy that the government has adopted since late 2018.

Against this backdrop, the study attempts to evaluate how the RCET policy is contributing towards making the textile sector of Pakistan regionally competitive. Moreover, how RCET helps to boost investment and employment opportunities in the sector. Section 2 spells out some dynamics of the structure of the textile sector of Pakistan. Section 3 provides a brief overview of the relative performance of the sector. Section 4 carries out the analysis of the factors of production in the textile sector and highlights the role of energy in the production process and contains a cross-country comparison as well. Section 5 highlights the role of energy tariffs in boosting investment in the textile sector, while section 6 contains the same discussion in the case of employment. Then,

[1] These figures are taken from the textile sector brief, the board of investment (PBIT) that can be accessed at https://invest.gov.pk/textile#gallery.

Section 7 explores the structure of energy tariff settings in Pakistan, and Section 8 elaborates on the importance of regional competitive energy tariffs for the competitiveness of our textile units. Afterward, Section 9 reviews the possibility of offering a DLTL scheme instead of the RCET policy. Towards the end, both Sections 10 and 11 extend on the identified problems that the textile sector is facing, and Section 12 concludes the discussion.

2. Structure of Textile Sector

The textile sector in Pakistan consists of organized and unorganized subsectors. The organized subsector includes spinning units, integrated textile mills, and a small number of shuttle-less looms. While unorganized subsector includes small and medium enterprises (SMEs) engaged in weaving, processing, garments, and hosiery. These downstream SMEs have an enormous export potential that has yet not been fully realized.

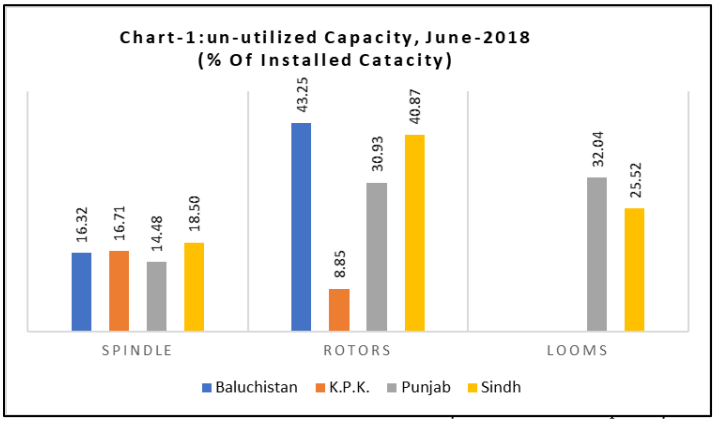
Table-1: Number of Textile Mills

	Composite	Spinning
Baluchistan	0	10
KP	0	19
Punjab	23	332
Sindh	17	127
Total	40	477

According to the annual report (2018-19) of the Textile Commissioner's Organization (TCO), the textile sector of Pakistan consists of 40 composite units and 477 spinning units with 13 million spindles and 198,801 rotors. The installed capacity also includes 28,500 shuttle-less looms and 375,000 conventional looms. While in the case of spinning, Pakistan supports around 5% of global spinning capacity following by China and India (Memon, 2017).[2] The spinning stage can also be considered as

Table-2: Installed Capacity

	Baluchistan	KP	Punjab	Sindh	Total
Spindle	269,208	838,376	9,546,468	2,661,701	13,409,420
Rotors	13,689	2,690	85,480	96,942	198,801
Looms	0	0	5859	3225	9,084



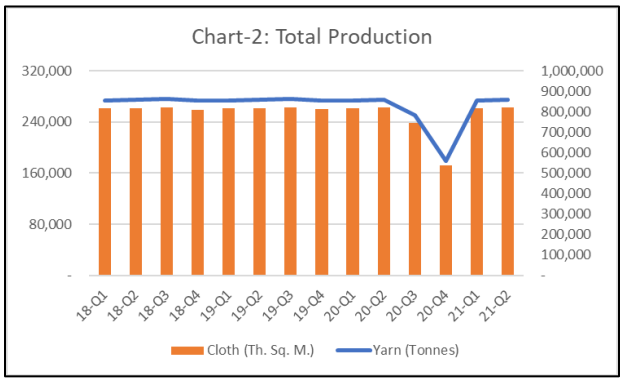
the textile industry, 2018-19, TCO

[2] Memon, N. A. (2017). Pakistan Textile Spinning Industry Adversely Affected by Slowdown in China's Imports Yarn. Pakistan Textile Journal, Spinning Review, pp. 36-3

the starting point of the textile value chain. As per the available data, around 15% of the spindle capacity stood idle during June 2018. While 36% rotors and 30% looms installed capacity remained unutilized for the same period.

3. Export Performance of Textile Sector

The total production in the textile sector remained stagnant around 262,000 thousand square meters of cloth and 858,725 tons of yarn over the years (see Chart 2). During the 4th quarter of 2020, the sector recorded around a 34% decrease in production in both heads due to the COVID-19 pandemic. However, regaining the production steadiness position during the very next quarter indicates the resilience of the textile sector of Pakistan.



Source: Pakistan Bureau of Statistics; export statistics, January 2021

Although, substantial export earnings of Pakistan are based on textile products, its share in the international textile exports is much smaller. Out of a total US$ 792 billion of textile exports,

Table-3: Textile Exports and Shares of Selected Countries

	Textile Exports (Bill. $)	Pakistan (% share)	India (% Share)	China (% Share)	Bangladesh (% Share)	Vietnam (% Share)
2010	616.28	1.96	4.51	33.92	2.73	2.20
2015	759.80	1.77	5.04	37.73	3.64	3.66
2019	792.82	1.79	4.60	34.69	-	5.08

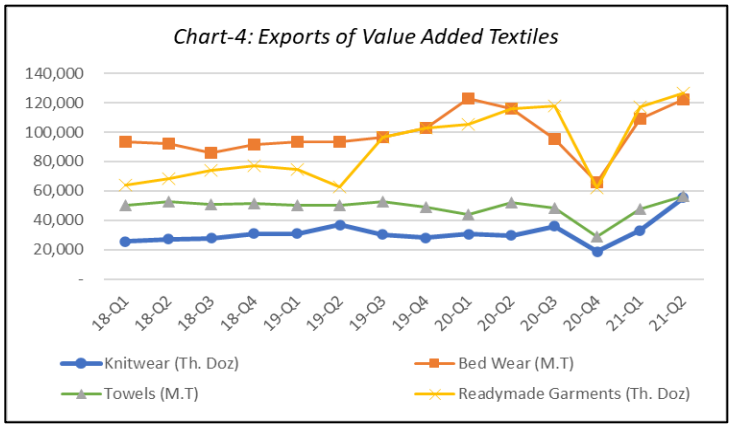
Source: Calculation base on World Integrated Trade Solution (WITS) database.

Pakistan contributes merely 1.7%. While the share of China, India, and Vietnam stands around 34%, 4.6%, and 5% respectively.

The textile products that Pakistan exports are diverse, ranging from cotton fiber to ready-made garments. However, except for the recent picking

Source: Calculations based on the International Trade Center (ITC) database

up, the growth till 2019 followed a downward trend. Due to the regionally competitive energy tariff rates and partially due to the closure of regional textile market operations, the textile sector has shown a promising growth potential, only if tapped wisely. For instance, Chart 4 indicates a positive trend in value-added products' exports. Therefore, if Pakistan wants to increase textile exports from $12.78 billion to $26 billion, then the priority should be given to promote and export high value-added products. Table 4 below further elaborates the export potential of the textile sector of Pakistan. Out of the top 20 products with the highest unrealized export potential, 14 products are from the textile sector.



Source: Pakistan Bureau of Statistics; export statistics, January 2021

Table-4: Unrealized Export Potential of Textile Product Among Top 20 Products

HS Code	Description	Exports (US$ Mil.)	Unrealized Exports Potential			Technology Level	Price Stability	Prominence of SMEs
			South Asia	Non-OECD	OECD			
520512	Cotton Yarn, >=85%,..	951.02	55%	38%	59%			
630260	Toilet & Kitchen Linen..	743.17	86%	47%	21%			
630231	Bed Linen, of Cotton,..	660.83	88%	50%	41%			
620342	Men/Boy's Trousers…	764.85	97%	65%	10%			
620452	Women/Girls Trousers…	443.86	96%	63%	32%			
520942	Denim Fabrics of cotton..	337.09	48%	53%	25%			
630210	Bed Linen, knitted or …	402.80	96%	56%	16%			
610510	Men/Boys Shirts, cott,…	279.28	89%	86%	43%			
610910	T-shirts, singlets…	260.81	71%	76%	63%			
630710	Floorcloths, dish-…	262.42	99%	85%	32%			
520511	Cotton Yarn, >/=85%…	211.57	81%	29%	73%			
520812	Plain Weave Cotton …	200.17	68%	53%	38%			
520912	Twill weave cotton fab…	163.20	73%	44%	48%			
6115	Pantyhose, tights…	283.24	66%	78%	30%			

Notes: Products belong to the textile sector from the top 20 products listed by ITC with respect to their export potential to the world. Development indicators are relative to the country's current situation, green indicating performance above its trade-weighted median and red otherwise. Export (US$ thousand) correspond to average exports to the world over the period 2009-13.

Source: Borrowed from the country brief "Pakistan" International Trade Center (ITC).

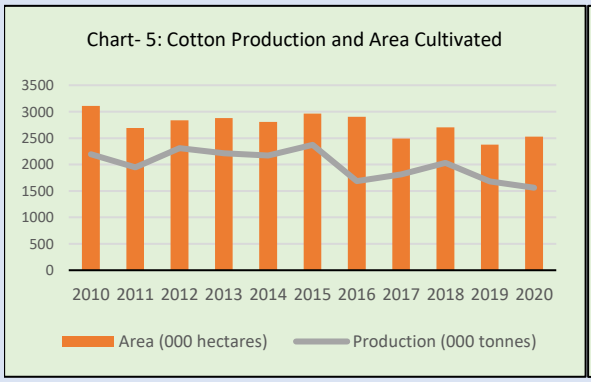
Therefore, to unfold the inherent export potential of the textile sector, the large investment in machinery, skill, and product development, along with government supporting policies are the key areas to focus on.

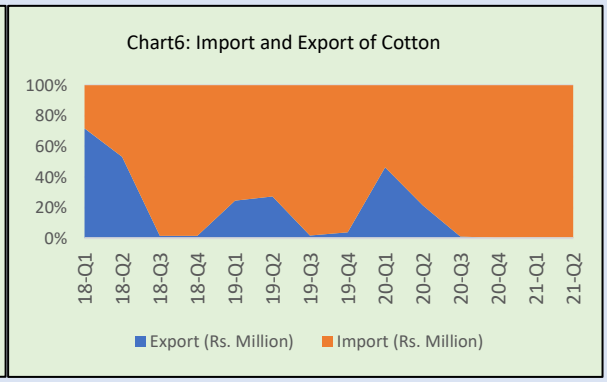
4. Cost of Production and Energy Cost

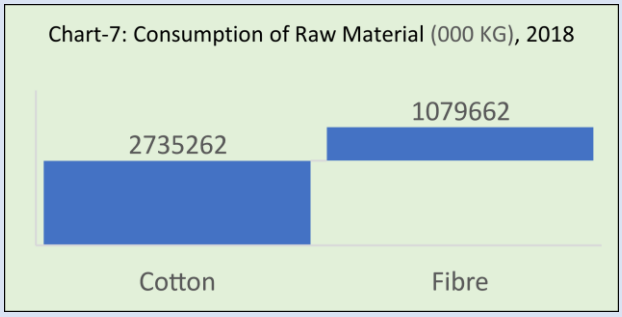
In the textile sector, the major factors of production other than capital include raw material (i.e., cotton), energy, and labor. In terms of cost of conversion (where the cost of raw material is subtracted from the total cost of production), energy cost is the leading component, especially in spinning and weaving. Thus, to delve into the way forward, it is pertinent to comprehend the importance and relative share of energy in the conversion cost. Due to severe competition among regional countries, a minor cost difference in relative terms brings a huge impact on the international market.

Box-1: Cotton

The textile sector in Pakistan is predominately a cotton-based product-producing sector. As evident by the fact that more than 65% of yarn produced during 2018 are different accounts of cotton yarn. The structural position of cotton in the textile sector is because of domestic cotton cultivation and production. Pakistan on average cultivates 2.7 million hectares of cotton and positions 4th largest cotton producer (PBIT, 2018). The recent drop in yield, as well as cultivated area of cotton, is a matter of grave concern for the industry and for which they are also crying for help. The share of cotton in textile imports and exports is presented in chart 6 *(source: Pakistan Bureau of Statistics).*







4.1. Regionally Competitive Energy Tariffs

Among all the factors that make the textile sector of Pakistan regionally un-competitive, energy tariff is at the core. Since it makes up around 35-40% of conversion cost in textile, for that reason,

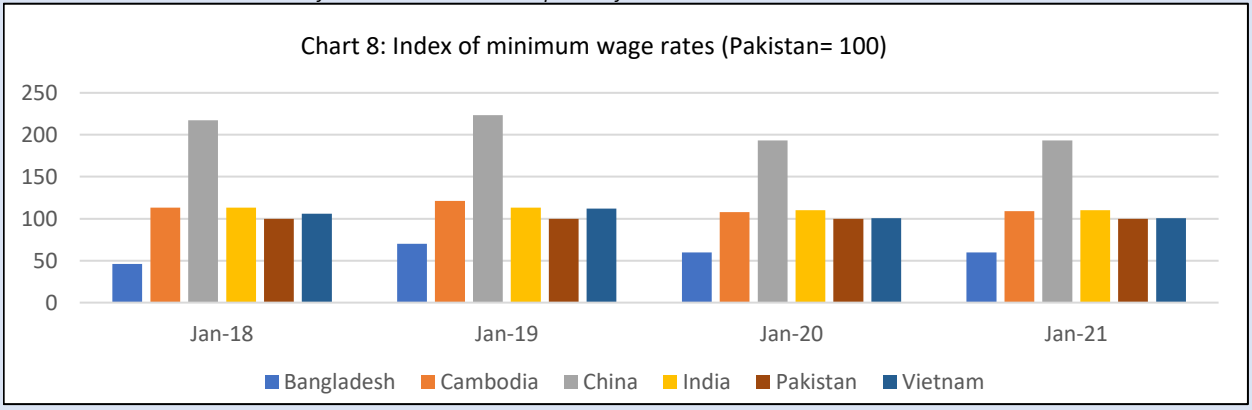
Box-2: Labor

Next to energy cost is the labor in the conversion cost. The labor cost falls under the head of salaries, wages, and other benefits. A regional analysis indicates that Pakistan is among the countries with the lowest labor wage rates. In the textile sector, data collected from the listed textile companies of Pakistan, India, and Bangladesh, reveals that in India the monthly labor cost is 80% more than in Pakistan, while in Bangladesh it is around 12% cheaper than Pakistan.

Table-5: Monthly Wages (US $)

Average	Pakistan	Bangladesh	India
(2017-2020)	178	164	331
2017	167	163	341
2018	175	162	343
2019	183	166	299
2020	188	165	337
Exchange Rate	*$ 1 = PRs. 157.35*	*$1 =BNT 84.97*	*$1 =IRS 72.97*

Source: Based on the data collected from the listed textile companies of relevant countries



Source: Based on the data collected from the emerging textile

to keep textile products competitive in the international market, the availability of energy at regionally competitive tariff rates is inescapable. The textile industry had long been complaining about uncompetitive energy tariffs and identified it as the key culprit for the poor performance of the sector, despite being rich in cotton resources.

Eventually, in October 2018, the government heeded the vigorous appeal of the sector and offered a regionally competitive RLNG/Gas tariff at $6.5/mmbtu to export-oriented units of the zero-rated sector.[3] Furthermore, the electricity tariffs for the afore-mentioned units were also fixed

[3] Office Memorandum No. NG(1),-7(189)/19-Vol-III.

at 7.5 cents/kWh in January 2019.[4] In September 2020, the electricity tariffs were revised from 7.5cents/kWh to 9 cents/kWh. Although, the textile sector overjoys the implementation of regionally competitive energy tariff (RCET) policy, and optimism towards new investment initiatives and growth in exports is visible. Tough, the impulsive responses from the government to withdraw the RCET policy or gas suspension have perturbed the confidence of the producers.

The tables below contain the regional comparison of the electricity and RLNG/Gas tariffs. These tables demonstrate the disadvantageous position of the Pakistani textile sector in terms of competitiveness in the event of withdrawing the RCET policy. The regional average electricity tariff rate is 7.4 cents/kWh and receiving a tariff rate of 9 cents/kWh can provide a momentary respite to the textile producer but not a long-lasting one.

Table-6: Regional Comparison of Electricity Tariffs

Region		Cents/kWh	Source
Pakistan		**9**	Power Division, Ministry of Energy, Pakistan.
Vietnam		**7.3**	Vietnam Electricity Corporation; https://en.evn.com.vn/d6/news/WHOLESALE-ELECTRICITY-TARIFF-9-28-260.aspx
Bangladesh		**9**	Dhaka Power Distribution Company; https://dpdc.org.bd/article/view/535/Tariff%20Rates
India	Maharashtra	**7.8**	Maharashtra State Electricity Distribution Company; https://www.mahadiscom.in/consumer/en/commercial-circulars/
	Punjab	**7.1**	Punjab State Power Corporation Limited. https://www.pspcl.in/tariff-orders/
China	General	**9.8**	Price Monitoring Center, National Development and Reform Commission, China, https://www.ceicdata.com/
	Xinjiang	**6.1**	Price Monitoring Center, National Development and Reform Commission, China, https://www.ceicdata.com/

Table-7: Regional Comparison of Gas/RLNG

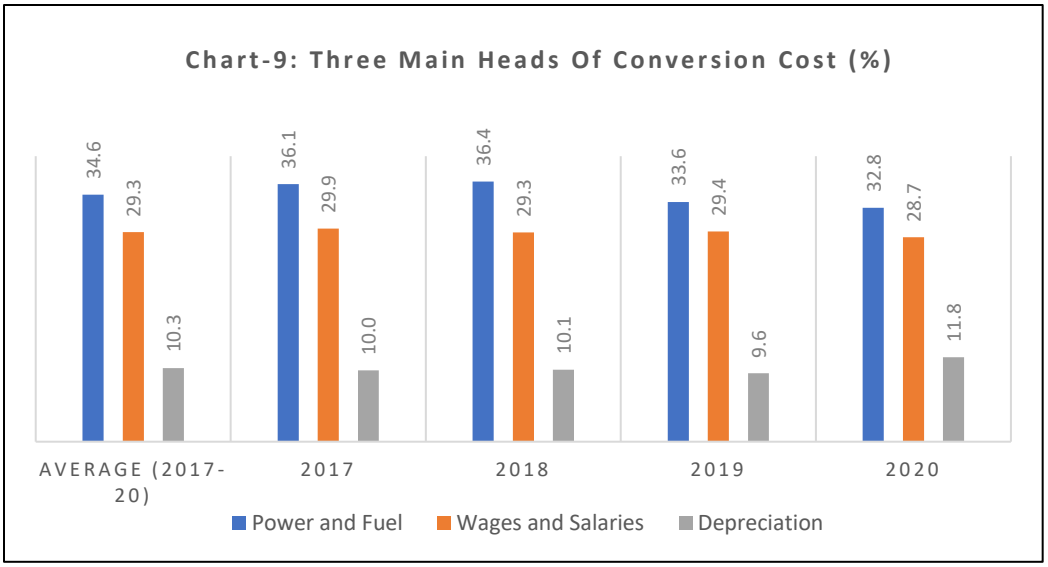
Region		**$/mmbtu**	**Source**
Pakistan	Sindh	**5.9**	Ministry of Energy, Petroleum Division, Pakistan
	General	**6.5**	Ministry of Energy, Petroleum Division, Pakistan
India		**4.06***	Ministry of Petroleum and Natural Gas, India. https://www.ppac.gov.in/WriteReadData/CMS/20200930054206050 2504GasPriceCeilingOct2020toMarch2021.pdf. *The maximum price cape.
Bangladesh		**4.05**	Bangladesh Energy Regulatory Commission; https://berc.portal.gov.bd/site/page/2a25b0a8-1b3f-49a5-a275-87ef2eebb452/-
Vietnam	Tariffs vary on project basis; the PM has the authority to decide which project charged what tariff rates		

[4] SRO No. 12(1)/2019.

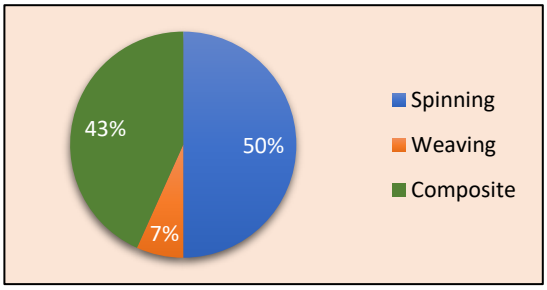
4.2. Regionally Competitive Energy Tariffs and Textile Sector's Performance

To evaluate the impact of RCET policy on the textile sector, we collected data of the listed companies from the textile sector. The period of analysis stretches from 2017 to 2020 and the first quarters of 2020 and 2021. There is a total of 132 listed textile units that further split into 67 spinning, 09 weaving, and 58 composite units.

We were able to compile data for the required period only for 50 textile units.[5] The unwanted drop of voluminous textile units is either due to declared defaulters, or halted production activities, or non-availability of data. Henceforth, data of these 50 textile units refers to these listed companies' data during the analysis for Pakistan. To make a cross-country comparison, we also endeavored to collect data of listed textile units for Bangladesh, China, India, and Vietnam. However, we succeeded only in the case of Bangladesh and India to collect data of 10 textile units from each country. We skipped China due to non-feasibility for comparison and dropped Vietnam as there are only three listed companies that are engaged in FDI activities.

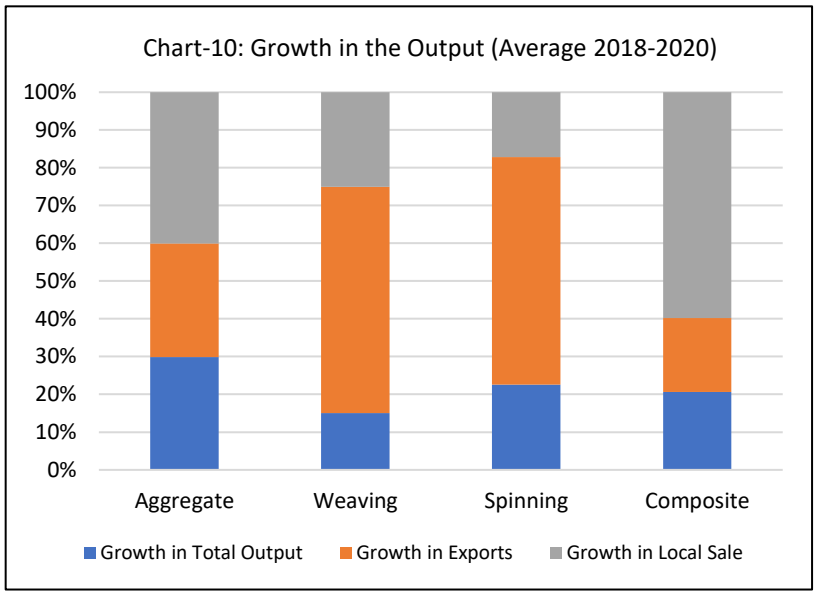


The data of listed companies from Pakistan indicate that power and energy cost is the leading component in the conversion cost, followed by wages

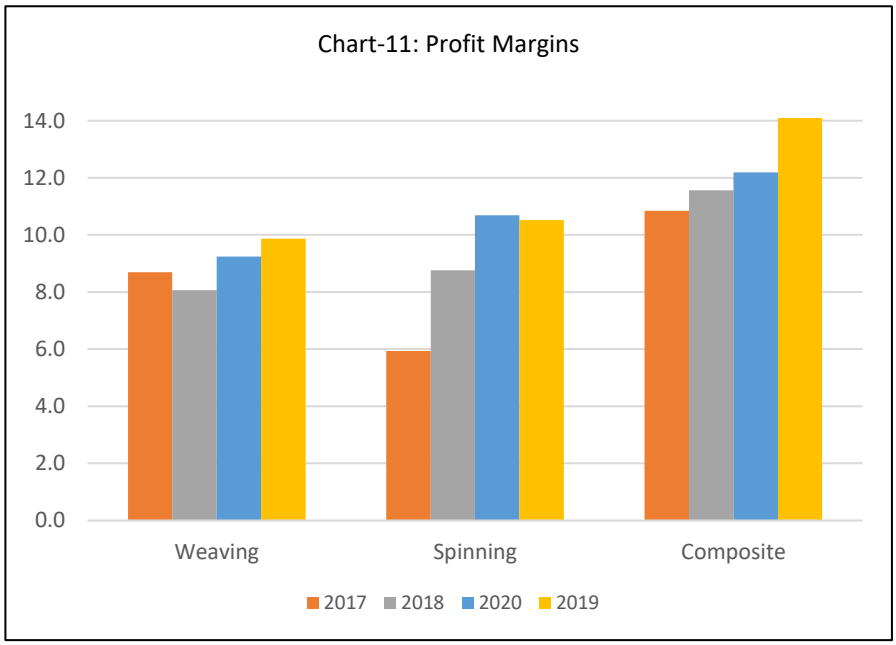


[5] See appendix-A for details of the selected listed textile units.

and salaries. The average share of the power and energy cost in 2018 was 36.4%. During 2020, a 04-percentage point reduction in the power and energy cost was observed and stands at 32% of the conversion cost. This implies that the implementation of RCET has reduced the cost of production in Pakistan.



Even though, the cost of production contracts after RCET policy, there is a concern about how it has rendered into more production and sales, both local and export, or higher profit margins. The Chart-10 contains average growths in sales of listed companies.[6] At the aggregate level, the total sales revenue and export sales revenue increased by 14%, while local sales revenue increased by 19%. Both spinning and weaving subsectors recorded higher growth in exports than local growth in the local sales. Moreover, the quarterly comparison indicates a 22% increase in sales during the first quarter of 2021 compared to the same quarter of 2020.



RCET policy has not only increased the sales revenue of the companies but also impacted the profit margins positively. The highest increase in the profit margins recorded by the composite units during 2019, which is

[6] Details are presented in the appendix-B.

around 14.1% of the sales revenue. While profit margins slashed down in 2020 due to COVID-19, these remained higher than that of 2018 and 2017. Whereas gross profits during first quarter of 2021 jumped up by 116% on QoQ basis.

4.3. Cross-country comparison of Conversion Cost

A cross-country analysis indicates that the main contributing factors in conversion cost are the same, ranking may vary. In Pakistan and India, power and energy cost are the leading component of the conversion cost, while in Bangladesh, labor cost takes the lead.

Table-8: Cross-Country Comparison of Conversion Cost

	Pakistan			India			Bangladesh		
	Power & Fuel	Wages & Salaries	Depreciation	Power & Fuel	Wages & Salaries	Depreciation	Power & Fuel	Wages & Salaries	Depreciation
Average (2017-20)	**34.6**	29.3	10.3	**29.8**	28.0	16.0	**25.5**	33.8	18.0
2017	**36.1**	29.9	10.0	**26.9**	26.6	16.5	**26.9**	33.0	17.5
2018	**36.4**	29.3	10.1	**30.6**	27.1	14.8	**24.4**	29.8	15.8
2019	**33.6**	29.4	9.6	**31.2**	30.8	16.4	**26.0**	35.8	18.4
2020	**32.8**	28.7	11.8	**30.4**	27.6	16.3	**25.0**	37.1	20.9

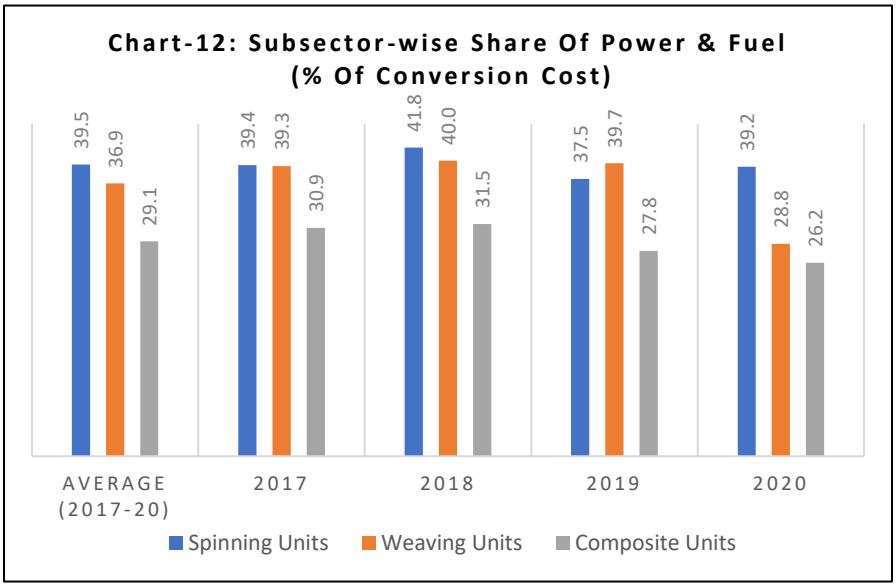
The energy share comparison in the cost of conversion shows that the textile units in Pakistan are incurring power and energy costs 2.4 percentage points more than India and 7.8 percentage points higher than Bangladesh.[7] This further employs the argument as made in Table 6 that the 9cents/kWh electricity tariff rate is not regionally competitive. The regionally competitive electricity tariff is around 7.4 cents/kWh.

4.4. Cost of Conversion: Further Considerations

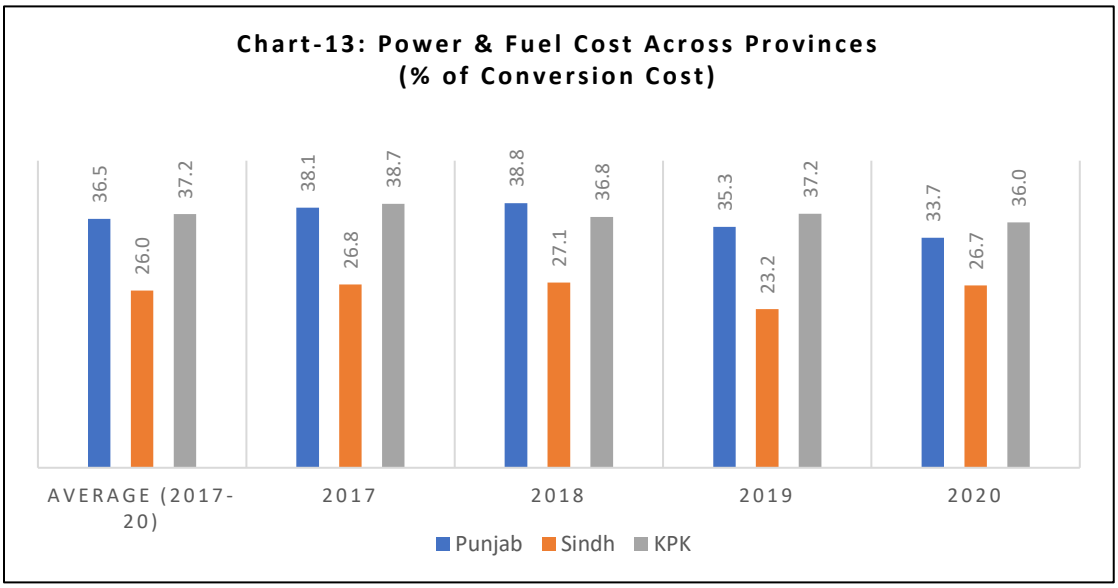
The value chain of the textile sector consists of four sub-sectors, which are i) spinning ii) weaving and knitting iii) dyeing and finishing, and iv) garments processing. Remarkably, the

[7] The large difference in power and energy shares between Bangladesh and Pakistan may be due to the difference in textile sector dynamics. Both countries have different genesis of the textile sector. Spinning is the backbone of the textile sector in Pakistan, which is an energy exhaustive stage followed by weaving and processing. While Bangladesh textile sector operates at the higher nodes of the value chain and engages in garments, which requires less energy.

leading head of the conversion cost in almost all the sub-sectors remains the same, which is power and energy cost. Spinning appears as the highest energy exhausting stage and garments processing as the least energy-requiring stage in the textile value chain. The power and energy head is normally reported in the cost of sales section of the annual report. This head includes costs incurred on electricity purchased from the grid, RLNG/Gas expenditures, water expenditures, expenditures on coal, and expenditures on other types of fuels used for power generation. Chart 12 also points out the fact that weaving and composite units are the real beneficiaries of the RCET policy, while the spinning segment does not exhibit any significant change in the pre and post RCET share of the power and energy. The underlying reasons behind this non-responsive behavior of the spinning segment toward the RCET are explained in Section 10.

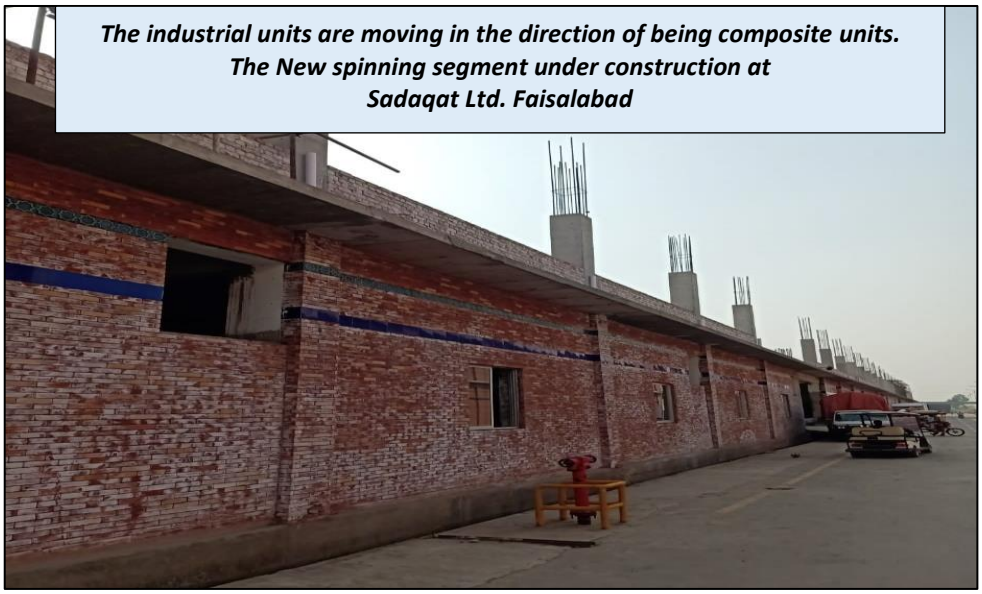


The power and energy share in conversion cost not only differ across sub-sectors, but it also differs across provinces in Pakistan. Surprisingly, the province that holds around two-third of the industrial base does not have the lowest energy share in the conversion cost. The lowest energy tariffs are offered in Sindh, where RLNG/Gas tariff rate is around Rs. 930/MMBtu ($ 5.9/mmbtu).



In short, one irrefutable fact that emerges from the above discussion is that the cost of power and energy in the production process has declined after the implementation of the RCET policy. One should wonder, does this reduction of the power and energy tariffs offered by RCET policy sufficient to make the textile sector regionally competitive or not?

5. Energy Tariffs and Investment



The industrial units are moving in the direction of being composite units. The New spinning segment under construction at Sadaqat Ltd. Faisalabad

Since energy cost is a crucial and principal component of the conversion cost. Therefore, the performance of the textile sector deeply depends on the energy tariffs. The recent surge in the investment initiatives by textile industrialists compared to almost stagnant investment growth before the RCET policy unveils the centrality of the energy tariffs. To divulge the underlying relationship between output supply and energy tariffs, we consider the following model.[8]

$$q(\varphi) = \varphi l^{\alpha} k^{\beta} Pow^{\omega} \left[\int_0^1 x_H(j)^{\frac{\gamma-1}{\gamma}} dj + z \int_0^N x_F(j)^{\frac{\gamma-1}{\gamma}} dj \right]^{\frac{\theta\gamma}{\gamma-1}} \quad \ldots (1)$$

Where; φ measures the labor productivity of the textile unit, l is the amount of labor employed, k is the amount of capital employed, Pow is the amount of energy employed, $x_H(j)$ is a particular variety j of the domestic raw material x_H, x_F is the variety j of imported raw material, $z \in \{0,1\}$ implies either the textile unit employs domestic raw material or imported raw material.

From cost minimization of the cost function associated with equation (1), we can derive the conditional demand of capital as follow.

[8] For details see; Appendix-B.

$$k = \left(\frac{q}{\varphi}\right)\left(\frac{w}{\alpha}\right)^{\alpha}\left(\frac{r}{\beta}\right)^{\beta-1}\left(\frac{\mu}{\omega}\right)^{\omega}\left(\frac{P}{\theta}\right)^{\theta} \quad \ldots (2)$$

We can easily gauge the impact of energy tariffs on the investment in the sector by estimating equation (2). The regression analysis based on the listed companies' data indicates that the elasticity of investment to the energy and power is - 0.11, which means **a 10% increase in the energy tariff causes a 1.1% decrease in investment** in the textile sector of Pakistan. In other words, a reduction in energy tariff rates after the RCET policy (where price falls from Rs. 21.90/kWh to Rs. 14.15/kWh), the investment in the textile sector will increase by 6% in the long run.

The average capital employed is around Rs. 3.8 billion in the listed textile units. Moreover, the analysis also indicates that around 75% of textile units undertake new investment initiatives when the energy tariffs fall. Therefore, out of 571 textile units, it is expected that 387 units will venture into some sort of new investment initiatives. The sector at aggregate will observe a minimum surge of around Rs.88 billion in new investments. Remarkably, the recent announcement by the State Bank of Pakistan (SBP) declares that out of recent loan applications under Temporary Economic Relief Facility (TERF), around 60% came from the textile sector alone. Moreover, the textile sector has experienced approximately $ 1.60 billion investment during the first half of the current fiscal year. These overwhelming loan demands for new investment from the textile sector are partially due to competitive energy tariff rates and partially due to concessionary mark-ups.

6. Energy Tariffs and Employment

We can also similarly derive conditional demand of labor as in the case of capital. The labor demand can be described as.

$$l = \left(\frac{q}{\varphi}\right)\left(\frac{w}{\alpha}\right)^{(\alpha-1)}\left(\frac{r}{\beta}\right)^{\beta}\left(\frac{\mu}{\omega}\right)^{\omega}\left(\frac{P}{\theta}\right)^{\theta} \quad \ldots (3)$$

Equation (3) is again estimated by using the listed companies' data. The lin-log function indicates that the semi-elasticity of employment to the energy and power is around - 622. This indicates that **a 10% increase in the energy tariff makes a firm lay off 62 employees** on average.

Since the number of textile units is around 521, therefore, a 10% energy tariff increment also brings a loss of 32,302 employment opportunities.

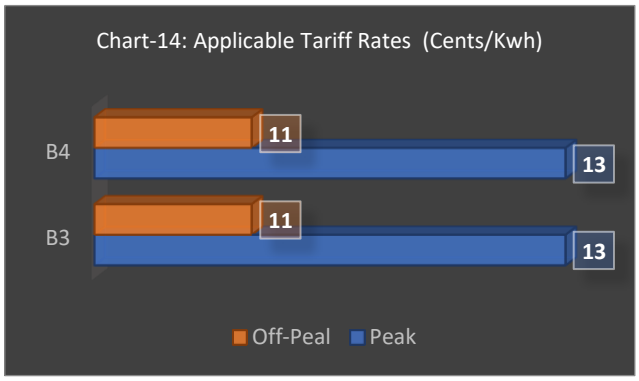
Our data also indicates that the average textile units provide employment opportunities for around 2,303 individuals. Consequently, a 10% increase in the energy tariff takes around 14 textile units at the brink of closing the operations.

7. Regionally Competitive Energy Tariffs and Fiscal Burden

Some government bodies are pointing towards the fiscal burden of the RCET policy and calling it categorically a subsidy. These bodies are also demanding a withdrawal of the policy to address fiscal concerns. Contrary to this point of view, another opinion also exists that calls for the distinction between the actual unit cost of energy service and systemic inefficiencies. They argue that the energy tariffs are high due to governance issues, operational and commercial inefficiencies, lack of effective planning, flawed policies, distorted pricing strategy, irrational cross-subsidization, and most importantly sub-optimal energy mix (Malik, 2020).[9] Resultantly, the unit energy price set by the policymakers attempts to cover all these inefficiencies. Naturally, it

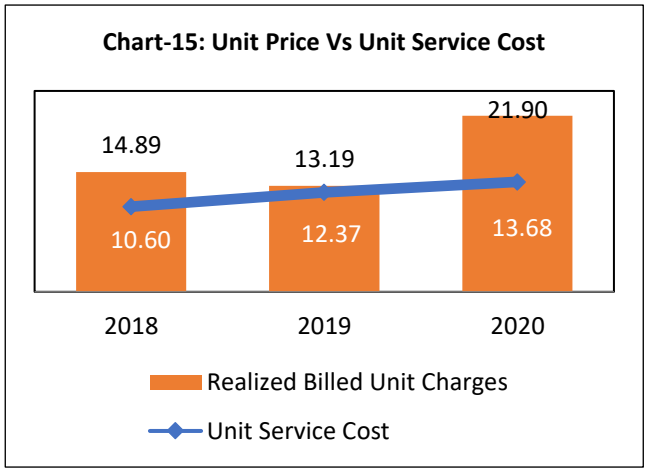
[9] Malik, Afia (2020). Circular Debt-an unfortunate misnomer. PIDE working paper No. 20.

raises the question that why a foreign importer would pay for our systemic inefficiencies? For instance, why the foreign importer should pay for our line losses or Neelam-Jhelum surcharge?



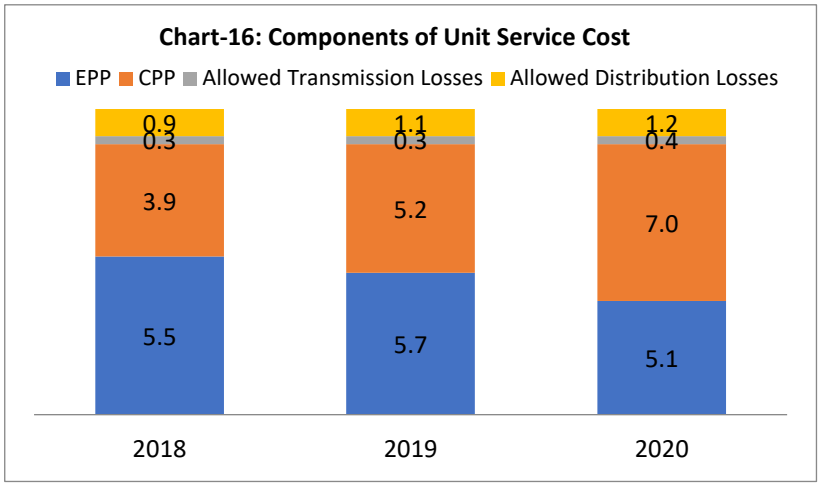
Source: Islamabad Electric Supply Company, Tariff Guide

The unit cost of service of electricity is around Rs. 13.7/kwh (8 cents/kWh)[10] for the year 2020 in Pakistan. This unit cost includes energy purchase price (EPP), capacity purchase price (CPP), as well as transmission and distribution losses. Chart 16 further elaborates the share of these components in the unit service cost.



Source: Calculations based on the data collected from the report of the National Electric Power Regulatory Authority (NEPRA).

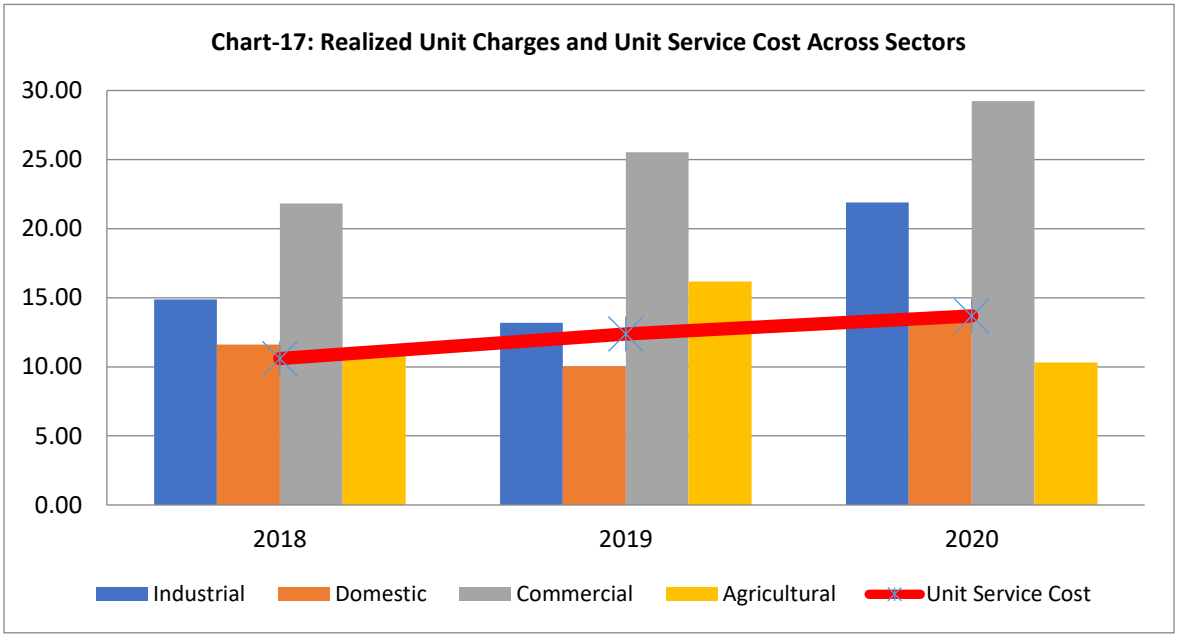
However, the unit price charged to the industrial units is around Rs. 21.90/kWh (14 cents/kWh) during 2020. The difference of unit service cost and unit price (which is around Rs. 8.22/kWh) shows the existence of cross-



Source: Calculations based on the data collected from the Central Power Purchasing Agency (CPPA).

[10] Exchange Rate *$ 1 = PRs. 157.35*

subsidization across sectors in our tariff setting system. Chart 17 contains a graphical presentation of cross-subsidy.



Source: Calculations based on the data collected from the report of the National Electric Power Regulatory Authority (NEPRA).

8. Why Competitive Energy Tariffs are Indispensable to Remain Regionally Competitive

Since the power and energy is the leading component in the conversion cost, especially in spinning and weaving. Any change in the energy tariff affects the relative competitiveness of Pakistani products in the international market through two channels,

- ***Direct Impact***: related to the cost of power and fuel that the unit is bearing during the conversion process.
- ***Indirect Impact***: related to the change in the input price due to a change in power tariff at upstream units of the value chain.

To highlights the argument that the RCET policy is decisive for the sustainability and functionality of the textile sector, we ran a simulation exercise. The exercise is performed on 8 textile products (we maintained that it applies to the entire textile sector), where we removed the

competitive energy tariffs and compared the price offered by Pakistan in the international market with regional countries. The prices of raw cotton, yarn, carded yarn and combed yarn is taken from the emerging textile database.[11] While the prices of the rest of the raw materials and outputs are gathered from International Trade Center (ITC)[12] database. For further details related to assumptions and costing sheets, see Appendix-D.

The results indicate that the upstream industry (spinning and weaving) will become regionally uncompetitive in the event of the RCET policy withdrawal. The spinning sector will not only lose international market share but also put domestic sales in jeopardy. While downstream industry, although will remain in the competition even without RCET rates but will definitely lose the price rankings. The change of market price ranking due to RCET withdrawal is highlighted for the rest of the products.

[11] Can access at https://www.emergingtextiles.com/
[12] Can access at https://www.intracen.org/

Yarn												
	Cost of Raw Material ($/LB)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/LB)**	**China ($/LB)**	**India ($/LB)**	**Bangladesh ($/LB)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/LB) without RCET**
										Direct Impact	Indirect Impact	
Pre-CET	1.00	45	9	0.41	40	1.44	1.72	1.41	1.52			
Post-CET	0.87	70	11	0.53	39	1.47	1.49	1.24	1.34	0.11	0.00	1.58

Carded Yarn 30s												
	Cost of Raw Material ($/LB)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/LB)**	**China ($/LB)**	**India ($/LB)**	**Bangladesh ($/LB)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/LB) without RCET**
										Direct Impact	Indirect Impact	
Pre-CET	0.95	51	9	0.44	0.40	1.43	1.61	1.29	1.49			
Post-CET	0.85	56	10	0.42	0.39	1.30	1.38	1.17	1.29	0.07	0.00	1.38

Combed Yarn 32s												
	Cost of Raw Material ($/LB)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/LB)**	**India ($/LB)**	**Bangladesh ($/LB)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/LB) without RCET**
									Direct Impact	Indirect Impact	
Pre-CET	1.08	43	9	0.42	0.40	1.55	1.42	1.54			
Post-CET	0.97	51	10	0.44	0.39	1.43	1.30	1.38	0.08	0.00	1.51

5208.12-Woven Fabrics of Cotton, containing 85% or more by weight of cotton, weighing nor more than 200 g/m2, Unbleached												
	Cost of Weft and Warp ($/LB)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/m²)**	**China ($/ m²)**	**India ($/ m²)**	**Bangladesh ($/ m²)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/ m²) without RCET**
										Direct Impact	Indirect Impact	
Pre-CET	0.55	63	9	0.31	0.40	0.89	1.54	0.72	0.74			
Post-CET	0.51	21	9	0.10	0.35	0.62	1.43	0.62	0.70	0.02	0.08	0.71

5208.12-Woven Fabrics of Cotton, containing 85% or more by weight of cotton, weighing nor more than 200 g/m2, Bleached												
	Cost of Weft and Warp and Bleach ($/LB)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/ m²)**	**China ($/ m²)**	**India ($/ m²)**	**Bangladesh ($/ m²)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/ m²) without RCET**
										Direct Impact	Indirect Impact	
Pre-CET	0.65	41	12	0.23	0.30	0.91	1.54	1.42	0.65			
Post-CET	0.61	20	13	0.11	0.27	0.72	1.51	1.21	0.60	0.01	0.08	0.82

6105.1000 - Men's or boys' shirts, knitted or crocheted, of cotton											
	Cost of Raw Material ($/ m²)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/unit))**	**China ($/unit)**	**India ($/unit)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/unit) without RCET**
									Direct Impact	Indirect Impact	
Pre-CET	1.04	358	8.6	3.40	0.20	4.76	5.57	4.68			
Post-CET	0.97	302	9.3	2.64	0.20	3.89	5.79	4.80	0.27	0.08	4.24

6106.1000 Women's or girls' blouses, shirts, and shirt blouses, knitted or crocheted., of cotton											
	Cost of Raw Material ($/ m^2)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/unit))**	**China ($/unit)**	**India ($/unit)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/unit) without RCET**
									Direct Impact	Indirect Impact	
Pre-CET	1.04	372	8.6	3.53	0.20	4.90	6.14	4.02			
Post-CET	0.97	308	9.3	2.70	0.20	3.95	5.75	3.93	0.62	0.08	4.65

6302.2310-Bedlinen of cotton (excluding printed, knitted, or crocheted)											
	Cost of Raw Material ($/ m^2)	Value Addition (%)	Profit Margin (%)	Conversion Cost	Energy Cost (% of con. cost)	**Pakistan ($/unit))**	**China ($/unit)**	**India ($/unit)**	Change in conversion cost due to RCET withdrawal		**Pakistan ($/unit) without RCET**
									Direct Impact	Indirect Impact	
Pre-CET	0.36	59	8.6	0.19	0.40	0.57	0.67	0.74			
Post-CET	0.34	45	9.3	0.14	0.35	0.50	0.68	0.80	0.03	0.08	0.61

9. Replacing Competitive Energy Tariff Policy with Drawback of Local Taxes and Levies (DLTL) Scheme

Recently another channel to offer the concessionary energy tariffs has also been in the debate, which involves replacing the RCET policy with a duty drawback on local taxes and levies (DLTL) scheme. The proposed scheme will be offered to export-oriented units of the zero-rated sectors. Under this scheme, they will receive a refund against the energy tariffs paid during the production process after filing a refund claim at exporting stage. Now the question is either such schemes will work more efficiently in making the sector regionally competitive or not? It is pertinent to note that most of the business community has already forthrightly rejected this proposal.

Before answering this question, first, we must re-think the primary rationale for the demand and introduction of the competitive energy tariff. The rationale for the competitive energy is simply to provide a regional level playing field to our export-oriented units of the five zero-rated sectors. Then, the provision of a direct concession based on the unit of service cost of energy, which is termed as the competitive energy tariff, is a far more efficient way than an indirect concession like DLTL. Besides, DLTL also involves extra costs, like:

- ***Time and Delay Cost***

  Schemes like DLTL involve a refund mechanism, which mostly involves the release of claims at the end of a fiscal year. But in the case of Pakistan, as evident by the recent release of Rs. 5.5 billion of DLTL claims due since 2014, time and delay cost is much higher.

- ***Documentation Cost***

  The submission of a refund claim also involves excessive documentation and shoe-leather cost, for instance, getting an audit and verification of claims by the authorized bank before submitting the refund claim.

Therefore, the very core objective of making the textile sector competitive would not be realized by providing such delayed concessions and supports. The sector is now emerging stronger

and needs finances to grow. Therefore, a direct and timely provision of relief will have far-reaching effects.

Now consider the scenario of replacing the competitive energy tariffs with DLTL. With the introduction of such a scheme, the textile units will have to pay the regionally uncompetitive energy tariffs, for instance, the electricity tariff is 14 cents/kWh. Due to higher energy costs, the price of output domestically produced will ultimately rise. Consequently, the output price of the products will also be regionally uncompetitive. Since the inputs imports of the textile are subject to a zero rate. A unit at the mid or downstream of the value chain will prefer imported inputs instead of costly domestic inputs. Eventually, domestic units at the upstream of the value chain will suffer the most. Such kind of policy would be catastrophic for the spinning sector and it would be difficult for the spinners to remains in the market by offering competitive rates.

Lastly, the introduction of a DLTL scheme for energy tariffs based on the supposition that it will have a trickle-down effect for the whole value chain is not a pragmatic approach. Exporters in the textile sector (which are merely 28% of the listed textile units), seldom share the benefits of such a scheme with their suppliers. Moreover, the main beneficiaries of such a scheme would be the vertically integrated units, which also represent only a minuscule chunk of the industry. Persistently, a textile unit that is not directly involved in the export business would not be able to obtain any benefit from such a scheme and lose domestic market share as well.

10. Three Main Challenges to Textile Sector

To grasp the dynamics of the sector and have a deeper understanding of the issues and challenges that the textile sector is facing, our teams organized two week-long field visits with the help of the All Pakistan Textile Mills Association (APTMA). We targeted Lahore and Faisalabad, as both cities are the leading textile industrial hubs. These visits involve in-depth interviews with senior management and structured questionnaire filling from the technical officers from different textile units. The table below contains a summary of the number of units we visited.

1.	No. of Spinning Units Visited	7
2.	No. of Weaving Unit Visited	5
3.	No. of Processing Units Visited	3
4.	No. of Knitting Units Visited	2

5.	No. of Garments Units Visited	3
6.	No. of Composite Units Visited	4
7.	No. of Structured Interviews with Technical Officers Conducted	11
8.	No. of in-Depth Interview with Senior Management Conducted	5

Three main challenges that emerged in unanimity during the interviews and discussion with the experts, technical officers, and senior management from the textile sector, which are;

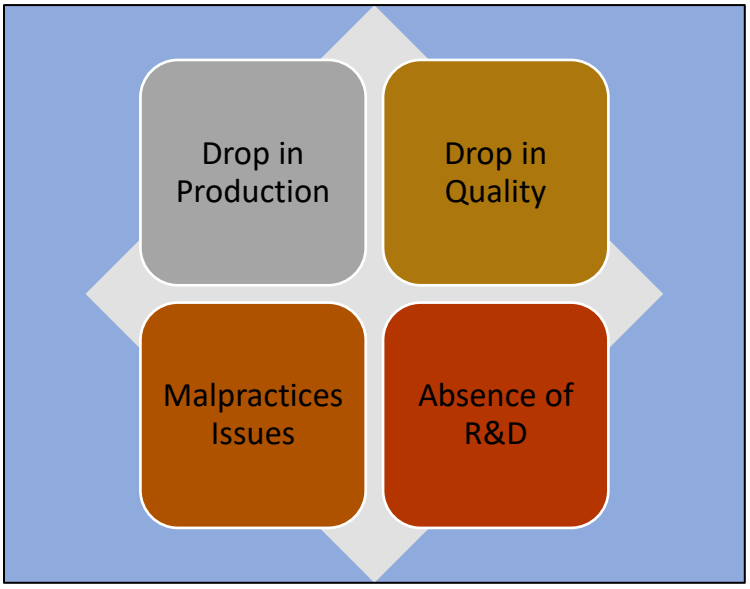
1. Challenges at Policy Front

The policy is a tool to achieve a certain objective and an effective way to eliminate the factors of uncertainty by upholding a clear pathway. A predictable and stable policy enables all the agents to have a level playing field and act accordingly. Unfortunately, in Pakistan, there is a lack of policy predictability and consistency. For example, at one time government is devising a policy to provide gas at concessionary prices, while at the very next moment gas moratorium is also tabled. The industry faces serious issues due to non-predictable and in-consistent policies and asks for a stable and predictable policy so that it can strategically take decisions about investment, expansion, procurement of the machinery, etc. Such as, at present, few large textile mills are taking a risk of expansion and installing additional units in the backdrop of favorable policy for textiles. However, most of the textile industry is reluctant to make a move as to what kind of machinery to import and how much expansion to make. As all of them are uncertain about the time frame of policy, which could change anytime and can inflict huge losses for the mills.

Here, it is pertinent to note that whatever the government decides, should be through an inclusive process, taking all the stakeholders on board and then make an inclusive endogenous decision. This is also important because, within the textile sector, there are different segments i.e., spinning, weaving, knitting, and garments, etc. Each segment has different problems which require different approaches to tackle them. So, inclusive policymaking would give them a chance to voice their concern.

The textile sector is now in dire need of a long run and comprehensive investment planning to emerge as the key driver for economic growth. Investment on such a scale would also have positive spillover effects within the industry and across some other industries as well. As of now, the productivity of the industry has increased a bit and investment is also happening. Now, to avail the full potential of the textile sector and retain as well as enhance the existing customer base, the consistent implementation of RCET policy is the need of the time. Contrarily, some quarters are proposing the withdrawal of the RCET policy, while others are suggesting the moratorium of gas. With these whimsical policy signals, we would not be able to develop investors' confidence, and reaping the full potential benefits of the sector will remain a far-distant target.

2. Challenges in Acquiring Raw Material



The other major problem faces by the entire industry is related to the raw material i.e., cotton. Its production is on the low and quality is very poor. Cotton is a Kharif crop (monsoon crop\

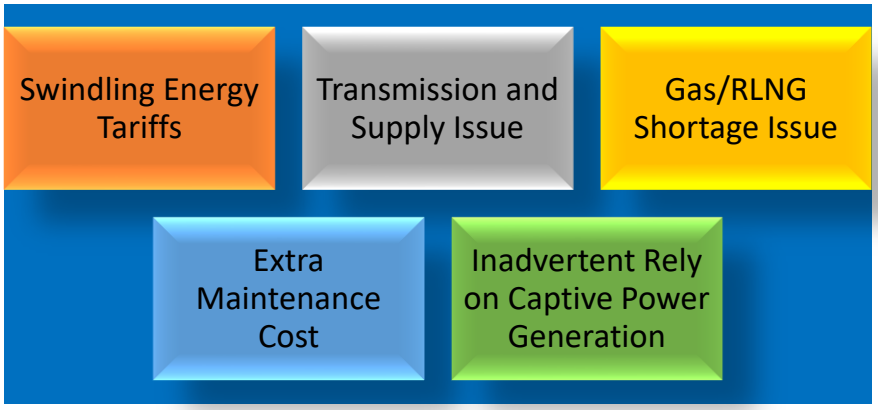
autumn crop). In Pakistan, there are three other major Kharif crops as well, besides cotton. These include maize, rice, and sugarcane. Over the last two decades, the area of sugar cane and rice cultivation has increased by almost 19 %. Whereas the cultivation area of maize has increased by a 40 %. In contrast, the cultivation area of cotton has decreased by 18 %.[13] Besides, the cotton crop is more prone to pest attacks and plant diseases. In parallel, if farmers use pesticides, it adds to the cost, and for the small farmer, integrated pesticide management is expensive. Thus, farmers are shifting from cotton to those crops which are profitable for them.

Another problem with the cotton is its contamination and low quality. Contamination in hand-picked cotton in Pakistan is a persistent issue concerning the quality and value of cotton. Pakistani cotton is one of the most contaminated cottons in the region. Untrained cotton pickers from field to low ginned quality standards all add to cotton fetching lower value in the market. Pakistani ginned bales contain 8-10% trash, while in the world it averages around 2-3 % only. Poor quality cotton in terms of its physical properties not only raises the processing costs but also reduces the output and quality of the final products.

To increase cotton production, we need to offer farmers high-yielding seeds which bring more profitability. The provision of such high-yielding seeds only possible after accomplishing necessary research and innovation regarding the seed quality. The research should also be done on the type of seeds that are resistant to pests/insects and plant diseases. All these concerns put a question mark on the performance of government agriculture research bodies.

A pile of Cotton bails imported from Afghanistan at Crescent Spinning Mill Ltd.

3. Challenges at Energy Front



Thirdly, one of the most significant factors impeding the productivity of the textile sector and its exports is the energy tariffs. The textile industry is believing that the electricity tariff above 7.5cents/kWh is not competitive, particularly within the region. Therefore, the industry calls for reverting to 7.5 cents/kWh tariff for electricity along with $6.5/mmbtu for gas/RLNG.

Nevertheless, to assume that offering competitive energy prices would solve all the problems would be a naive assumption. Take the example of electricity, the power supply from the grid follows a lot of fluctuations and breakdowns. These fluctuations in the supply cost heavily to the unit depending upon which subsector it is operating. For instance, 01-minute breakdown in spinning stops work for 20 to 25 minutes and causes 10 to 15% production loss in the case of weaving. Similarly, ensuring the desired pressure of the gas at the unit's inlet cannot be ensured by just competitive energy tariffs. Additionally, the latest machinery is computerized with sensitive electronic gadgets. Power shutdowns and fluctuations sometimes cost these gadgets to fuse and stop working. These gadgets are not locally made, so these must be imported which takes at least a few days if not more, further adding to the cost.

So, the industry unintentionally must invest and develop in-house power generation muscle. In parallel, the industry also showed disappointment that the government planning to cut gas supply and compel all the textile mills to shift on the electricity, in the backdrop of increased power generation capacity across the country. The point that the government misses is that during the last decade of power scarcity, most of the textile mills shifted to energy mix usage including gas and

coal. In this context, they also imported machinery compatible with gas and coal. Now, what they will do? Purchase new machinery that runs on electricity. Even if they bear the burden of the cost, it is not sure for how long the government will be able to supply ample power to the industry. Even if they do, they cannot provide uninterrupted supply and control power fluctuations. To control these issues, a complete overhaul of the electricity infrastructure is required, which is out of the question in the short run as it is a gigantic investment.

Besides that, some mills are more comfortable in using energy mix with a higher proportion of gas and coal since it is more economical. Moreover, there also surfaced a demand for making the best use of indigenous coal. The industry suggested that the government should incentivize local coal mining and should focus particularly on refining the coal, so that textile and other industries can use local coal at a very low transaction cost, eventually slashing down their aggregate cost.

11. Other Challenges

Furthermore, Pakistan has largely failed to establish downstream industries which could earn many times more foreign exchange. The question arises who is to blame, the government of the

textile industry itself? Respondents remarked that there is an inherent problem with the industry's attitude. Only the businessmen of Karachi have a bit sensible business approach. The rest of the country has a mindset of bureaucrat or elite who does not plan about growing a business, but just reaping considerable profit so that he/she can sit back, maintain, and enjoy the present lifestyle. In simpler words, there is a dearth of corporate culture in Pakistan. Plus, our industry is not familiar with modern marketing and branding techniques and tools that are widely used across the globe. Without using the same techniques Pakistani products cannot compete with the international competitors.

Similar is the case with the use of modern technology and human resource training. The industry itself should be proactive and launch such initiatives to train and equip its workers with modern skills, to amplify its productivity, rather than shifting the blame on the government and do nothing. On the other hand, the government is also partially responsible as it is not providing a favorable environment and the right incentives to promote downstream industries. The government should also facilitate the industry to organize trade fairs regularly to promote Pakistani products and establish global linkages to enhance its exports.

Further, interacting with the industry, we asked them if procuring finances from the government is difficult or easy? The majority of them were of the view that they can get finances easily, though the budget under this head should be increased so that procuring finances of large-scale investments, which can include setting up an additional unit or plant becomes easier.

On the question, as to whether other government schemes to support the industry like Duty Drawback on Local Taxes and Levies (DLTL), Duty and Tax Remission Scheme (DTRE), Temporary Economic Refinance Facility (TERF), Long Term Financing Facility (LTFF), Export Finance Scheme (EFS) along with few other schemes beneficial to the sector. The response was positive. Nevertheless, the industry wants these schemes to be enhanced. The loudest voice for the call of enhancement of the above-mentioned schemes came from export-oriented textile mills, as they are in a more advantageous position to benefit from these schemes.

On the other hand, the textile sector does not seem happy with the free-flowing exchange rate. They stated that the free-floating exchange rate and devaluation of the rupee stagnated the growth of the inbound currency. What happened is that Pakistan is exporting more goods for the same

amount of money, as Pakistan exports got cheaper. So, celebrating growth in exports is not appropriate as it is in quantity terms only. In monetary terms, we are still at the same level. So, a suggestion for keeping the exchange rate bit under control was voiced. However, some experts had a different point of view.

12. Conclusion and the Way Forward

Pakistan has strong export potential in the textile sector. To unfold the inherent export potential of the textile sector, large investment in machinery, enhanced skill set, and product development is critical. However, success in these avenues is not possible in the absence of supporting policies from the government. This is particularly true due to the fierce competition in textile products that our region observes. Resultantly, a slight relative difference in the factor costs brings a massive bearing on the country's export performance. The same was true in the case of energy tariffs applied to the textile sector before the RCET policy. Being the leading component of conversion cost, regionally uncompetitive energy tariffs made our textile products uncompetitive. Eventually, the government offered regionally competitive energy tariffs to the industry in late 2018, and the textile sector started showing signs of revival.

The textile sector is presently experiencing expansion and up-gradation, all because of the RCET policy that has turned profits from the business into positive territory. The sector is seeking more finances and asking for more technological up-gradation support. Now, to optimize the full potential of the textile sector and retain as well as enhance the existing customer base, the consistent implementation of RCET policy is the need of the time. In contrast, some quarters are proposing the withdrawal of the RCET policy, while others are suggesting the moratorium of gas. With these whimsical policy signals, we would not be able to develop investors' confidence, and reap the full potential benefits of the sector will remain a far-distant target.

The COVID pandemic, where it has damaged the economic situation quite badly, has also provided us a chance to re-orient our textile sector according to the needs of the time. The policies from the government that are supportive like, the RCET policy, will play a key role and would act as a catalyst in this re-orientation. Therefore, the government should come up with new supportive policies that lead towards more value-addition and more foreign earnings instead of abandoning the existing support.

Appendices

Appendix-A: Lists of Listed Textile Units

List of Listed Companies of Pakistan			
1	Ahmad Hassan Textile Mills Ltd.	26	J.A. Textile Mills Ltd.
2	Allawasaya Tex. & Finishing Mills Ltd.	27	Janana De Malucho Textile Mills Ltd.
3	Amtex Ltd.	28	Kohat Textile Mills Ltd.
4	An (formerly Ishaq) Textile Mills Ltd.	29	Kohinoor Mills Ltd.
5	Asim Textile Mills Ltd.	30	Kohinoor Spinning Mills Ltd.
6	Chakwal Spinning Mills Ltd.	31	Kohinoor Textile Mills Ltd.
7	Colony Textile Mills Ltd.	32	Maqbool Textile Mills Ltd.
8	Crescent Cotton Mills Ltd.	33	Masood Textile Mills Ltd.
9	D.S Industries Ltd.	34	Mehmood Textile Mill Ltd.
10	Din Textile Mills Ltd.	35	Nadeem Textile Mills Ltd.
11	Ellcot Spinning Mills Ltd.	36	Nagina Cotton Mill Ltd.
12	Faisal Spinning Mills Ltd.	37	Nishat Textile Mills Ltd.
13	Fazal Cloth Mills Ltd.	38	Prosperity Weaving Mill Ltd.
14	Feroze 1888 Mills Ltd.	39	Quetta Textile Mills Ltd.
15	Gadoon Textile Mills Ltd.	40	Sapphire Textile Mills Ltd.
16	Ghazi Textile Mills Ltd.	41	Saritow Spinning Mills Ltd.
17	Gul Ahmed Textile Mills Ltd.	42	Shahjat textile Ltd.
18	Hala Enterprises Ltd.	43	Shahzad Textile Mills Ltd.
19	Hira Textime Mills Ltd.	44	Sunrays Textile Mills Ltd.
20	Ideal Spinning Mills Ltd.	45	Suraj Cotton Mills Ltd.
21	Idrees Textile Mills Ltd.	46	Tata Textile Ltd.
22	Illahi Cotton Mills Ltd.	47	Towellers Ltd.
23	Indus Dyeing & Manufacturing Company Ltd.	48	Yousaf Weaving Mills Ltd.
24	International Knitwear Ltd.	49	Zahidjee Textile Mills Ltd.
25	J K Spinning Mills Ltd.	50	Zephyr Textile Ltd.

List of Listed Companies			
India		**Bangladesh**	
1	Damodar Industries Ltd.	1	Alhaj Textile Mills Ltd.
2	Siyaram Silk Mills Ltd.	2	Argon Denim Ltd.
3	Soma Textiles and Industries Ltd.	3	Hamid Fabrics Ltd.
4	Vardhman Textiles Ltd.	4	Malek Spinning Mills Ltd.
5	Indo Rama synthetics Ltd.	5	Queen South Textile Mills Ltd.
6	Kandagiri Spinning Mills Ltd.	6	Regent Textile Mills Ltd.
7	Lambodhara Textile Ltd.	7	Shasha Denims Ltd.
8	Nitin Spinners Ltd.	8	Shephard Industries Ltd.
9	Suditi Industries Ltd.	9	Square Textiles Ltd.
10	Welspun India Ltd.	10	Tosrifa Industries Ltd.

Appendix-B: The Output and Sales Growth

Aggregate			
Year	Total Output Growth	Exports Sale Growth	Local Sale Growth
2018	14.82	30.67	18.65
2019	24.52	10.69	31.05
2020	4.21	1.99	8.73
Spinning			
Year	Total Output Growth	Exports Sale Growth	Local Sale Growth
2018	21.26	87.72	8.91
2019	21.49	12.67	25.83
2020	3.09	17.75	6.95
Weaving			
Year	Total Output Growth	Exports Sale Growth	Local Sale Growth
2018	13.70	3.44	20.04
2019	15.58	31.37	12.83
2020	(23.92)	(13.46)	(23.93)
Composite/Semi composite			
Year	Total Output Growth	Exports Sale Growth	Local Sale Growth
2018	11.63	16.55	22.15
2019	18.15	7.12	35.49
2020	(10.81)	(5.78)	(1.22)

Appendix-C: Underlying Economic Model

First Approach: To measure the impact of energy tariffs on employment and investment, we consider the following production function;

$$q(\varphi) = \varphi l^{\alpha} k^{\beta} Pow^{\omega} \left[\int_0^1 x_H(j)^{\frac{\gamma-1}{\gamma}} dj + z \int_0^N x_F(j)^{\frac{\gamma-1}{\gamma}} dj \right]^{\frac{\theta\gamma}{\gamma-1}}$$

The associated cost function is;

$$C = wl + rk + \mu Pow + p\left(\int_0^1 x_H(j) dj + z \int_0^N t_F \tau_F \left(x_F(j)\right) dj \right)$$

The Conditional Demands for Capital (Investment) and Labor are derived from cost minimization, which are.

$$k = \left(\frac{q}{\varphi}\right)\left(\frac{w}{\alpha}\right)^{\alpha}\left(\frac{r}{\beta}\right)^{\beta-1}\left(\frac{\mu}{\omega}\right)^{\omega}\left(\frac{P}{\theta}\right)^{\theta} \quad \ldots 1$$

$$l = \left(\frac{q}{\varphi}\right)\left(\frac{w}{\alpha}\right)^{(\alpha-1)}\left(\frac{r}{\beta}\right)^{\beta}\left(\frac{\mu}{\omega}\right)^{\omega}\left(\frac{P}{\theta}\right)^{\theta} \quad \ldots 2$$

And by Applying duality, the production function will be.

$$q = \varphi l^{\alpha} k^{\beta} Pow^{\omega} [x_H + zNt_F \tau_F x_F]^{\theta} [1 + zN(t_F \tau_F)^{1-\gamma}]^{\frac{\theta}{(\gamma-1)}} \quad \ldots 3$$

Or

$$q = f(\varphi, l, k, \mu, p)$$

Second Approach: We can also derive the supply function through profit function as well. For the sake of simplicity, assume the production function, instead of the above function, is as follow;

$$q(\varphi) = \varphi k^{\alpha} l^{\beta}$$

And the profit function is given as,

$$\pi = (\mathrm{P} - \mu)q - rk - wl$$

Where P is the price of the output. Therefore, the supply function will be;

$$q = f(\varphi, l, k, \mu, p)$$

Econometric Results

First, to explore the underlying relationship between the factors of production and output level, we estimated equation (3) by taking the exports as output and factors employed proportional to exports. The panel data estimation based on the Hausman test indicates the superiority of the random effect model. The results are reported in the table below.

Random-effects GLS regression		No. of Observations		152
Group Variable: Mill		No. of Groups		38
Variable	***Coefficient***	***St. Error***	***Z***	***p-value***
Ln φ	0.18	0.036	5.04	0.00
Ln l	0.24	0.06	4.13	0.00
Ln k	0.15	0.34	2.36	0.01
Ln pow	0.15	0.06	2.37	0.02
Ln in	0.48	0.07	6.94	0.00
Cons	0.43	0.23	1.5	0.13

The simple regression results of the equation (1) and (2) are as follow.

Dependent Variable: Number of Factory Workers L				
Variable	***Coefficient***	***St. Error***	***t***	***p-value***
Ln q	4841.13	329.59	14.69	0.00
Ln φ	-3649.26	225.07	-16.21	0.00
Ln w	942.57	239.75	3.93	0.00
Ln r	-80.81	59.90	-1.35	0.17
Ln pow	-622.71	168.99	-3.69	0.00
Ln in	-1686.71	2291.44	-5.48	0.00
Cons	-39600.69	2291.447	-17.28	0.00

Dependent Variable: log of Capital Employed LnK				
Variable	***Coefficient***	***St. Error***	***t***	***p-value***
Ln q	0.88	0.20	4.43	0.00
Ln φ	-0.29	0.13	-2.71	0.03
Ln w	0.30	0.14	2.08	0.03
Ln r	0.13	0.03	3.74	0.00
Ln pow	-0.11	0.10	-1.15	0.25
Ln in	0.13	0.18	0.74	0.46
Cons	-3.08	1.39	-2.21	0.02

Appendix-D: Calculation to measure the impact of RCET policy Withdrawal.

Yarn													
	cost of raw cotton ($/LB)	Value Added	Profit	Cost of Conversion	Cost of energy	Pakistan ($/LB)	China ($/LB)	India ($/LB)	Bangladesh ($/LB)	Energy Cost without RCET	Conversion Cost	Output Price
Q1-18	0.71	0.52	0.05	0.48	0.20	1.44	1.70	1.48				
Q2-18	0.75	0.45	0.04	0.41	0.17	1.41	1.72	1.35				
Q3-18	0.80	0.42	0.04	0.39	0.16	1.45	1.77	1.40				
Q4-18	0.78	0.47	0.04	0.43	0.18	1.48	1.78	1.43	1.54			
Q1-19	0.83	0.39	0.04	0.35	0.13	1.45	1.70	1.45	1.52			
Q2-19	0.79	0.43	0.05	0.39	0.15	1.44	1.66	1.35	1.49			
Q3-19	0.76	0.52	0.05	0.46	0.17	1.49	1.67	1.36	1.42			
Q4-19	0.73	0.57	0.06	0.51	0.19	1.50	1.61	1.40	1.37			
Q1-20	0.63	0.74	0.08	0.66	0.26	1.55	1.49	1.24	1.31			
Q2-20	0.70	0.61	0.06	0.54	0.21	1.51	1.47	1.18	1.31			
Q3-20	0.70	0.57	0.06	0.51	0.20	1.47	1.45	1.22	1.35			
Q4-20	0.64	0.67	0.07	0.60	0.23	1.48	1.32	1.11	1.32			
Q1-21	0.62	0.64	0.07	0.57	0.22	1.39	1.33	1.10	1.25			
Q2-21	0.73	0.48	0.05	0.43	0.17	1.37	1.59	1.28	1.39			
Pre-CET	0.78	0.45	0.04	0.41	0.16	1.44	1.72	1.41	1.52			
Post-CET	0.69	0.60	0.06	0.53	0.21	1.47	1.49	1.24	1.34	0.32	0.64	1.58
Assumption: The average yield of yarn is 82% for carded and 75% for combed.												
5208.12-Woven Fabircs of Cotton, containing 85% or more by weight of cotton, weighing nor more than 200 g/m2, Unbleached												
	Cost of Yarn ($/LB)	cost of warp and weft ($/LB)	Value Added	Profit	Cost of Conversion	cost of energy	Pakistan ($/m2)	China ($/m2)	India ($/m2)	Bangladesh ($/Tons)	Energy Cost without CET	Output Price
Q1-18	1.53	0.54	0.39	0.03	0.36	0.14	0.93	1.42	0.72			
Q2-18	1.52	0.54	0.43	0.04	0.40	0.16	0.97	1.45	0.76			
Q3-18	1.54	0.54	0.51	0.04	0.47	0.19	1.05	1.50	0.70			
Q4-18	1.54	0.54	0.37	0.03	0.34	0.13	0.91	1.51	0.71			
Q1-19	1.59	0.56	0.24	0.02	0.22	0.09	0.80	1.60	0.72	0.74		
Q2-19	1.57	0.55	0.13	0.01	0.11	0.05	0.68	1.75	0.68			
Q3-19	1.53	0.54	0.29	0.03	0.26	0.10	0.83	1.58	0.64			
Q4-19	1.55	0.55	0.22	0.02	0.20	0.08	0.77	1.29	0.61			
Q1-20	1.46	0.52	-0.04	0.00	-0.03	-0.01	0.48	1.17	0.62			
Q2-20	1.44	0.51	0.06	0.01	0.06	0.02	0.57	1.44				
Q3-20	1.44	0.51	0.07	0.01	0.06	0.02	0.58	1.48				
Q4-20	1.30	0.46	0.14	0.01	0.13	0.05	0.60	1.49				
Q1-21	1.31	0.46	0.11	0.01	0.10	0.04	0.57	1.46				
Q2-21	1.45	0.51	0.02	0.00	0.02	0.01	0.53	1.50				
Pre-CET	1.55	0.55	0.34	0.03	0.31	0.13	0.89	1.54				
Post-CET	1.43	0.51	0.11	0.01	0.10	0.04	0.62	1.43	0.62	0.74	0.06	0.71
Assuming Fabric Construction = 32x32 / 79x65 (63 inch) Weight of warp = 79x63 / 32x840 = 0.1851 LBs per yard, Weight of warp = 65x63 / 32x840 = 0.152 LBs per yard Assuming waste and contracting @4%. Weight of warp = 0.1851 x1.04 = .192 LBs/yard or 0.209LBs/meter. Assuming wastage, fringe and shrinkage @ 8% Weight of weft= 0.152x1.08= 0.1641 LBS/yard Weight of warp and weft= 0.192+0.161=0.353 LBs/meter. Cost of 32 Ne yarn@ Rs 2070/- per 10 LBs, Cost of warp and weft= 0.353x Rs207= Rs 73.07/LB												
In case of Bleached woven	Bleaching and Packing Cost					0.1	cents/m2					
	Bleaching Cost= 25.75/KG Irs= 25.7/5.71=4.5/m2 Irs=9.84/m2 PKR=0.062 $/m2											
IN case of Dyed Woven	Dyeing, Finishing, and Packing Cost					0.2						
	Dyeing Cost= 33/KG Irs= 33/5.71=5.77/m2 Irs=12.62/m2 PKR=0.089 $/m2=PRs. 14/m2											

6105.1000 - Men's or boys' shirts, knitted or crocheted, of cotton												
		Yarn Pric ($/KG)	Cost of Fabric	Value Addtion	Profit	Cost of Conversion	cost of energy	Pakistan ($/m2)	China ($/m2)	India ($/m2)	Energy Cost without CET	Output Price
Q1-18	$m2	1.57	0.99	4.18	0.34	3.84	0.77	5.17	5.71	4.84		
Q2-18	$m2	1.64	1.02	3.65	0.29	3.36	0.67	4.67	5.14	4.30		
Q3-18	$m2	1.77	1.06	3.85	0.31	3.54	0.71	4.92	4.86	5.00		
Q4-18	$m2	1.73	1.05	3.37	0.27	3.10	0.62	4.42	5.71	4.86		
Q1-19	$m2	1.83	1.08	3.33	0.33	3.00	0.60	4.42	6.29	4.71		
Q2-19	$m2	1.73	1.05	3.95	0.39	3.56	0.71	5.00	5.71	4.37		
Q3-19	$m2	1.67	1.02	3.23	0.32	2.91	0.58	4.25	5.43	4.76		
Q4-19	$m2	1.60	1.00	3.08	0.30	2.78	0.56	4.08	5.71	4.84		
Q1-20	$m2	1.39	0.92	3.58	0.33	3.25	0.65	4.50	6.00	4.81		
Q2-20	$m2	1.55	0.98	3.27	0.30	2.97	0.59	4.25	5.43			
Q3-20	$m2	1.55	0.98	2.35	0.22	2.14	0.43	3.33	5.14			
Q4-20	$m2	1.41	0.93	3.16	0.29	2.86	0.57	4.08	5.71			
Q1-21	$m2	1.37	0.91	2.50	0.23	2.27	0.45	3.42	6.29			
Q2-21	$m2	1.61	1.00	2.16	0.20	1.96	0.39	3.17	6.57			
Pre-CET		1.71	1.04	3.72	0.32	3.40	0.68	4.76	5.57			
Post-CET		1.52	0.97	2.92	0.27	2.64	0.53	3.89	5.79	4.80	0.80	4.24
Spandex	0.060											
Kniting Cost	0.110											
Dyeing Cost	0.144											
Cuting	0.030											
Packing	0.060											

BASICS OF KNITTING COSTING OF KNITTED FABRICS, Posted by VASANT R KOTHARI | May 25, 2018 | Expert Opinion; https://knittingviewsbd.com/basics-of-knitting-costing-of-knitted-fabrics/

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