

**THE IMPACTS OF ZERO-RATING TAX POLICY  
ON FIRM COMPETITIVENESS AND  
PRODUCTIVITY: A CASE OF TEXTILE SECTOR**



**PIDE**

**PAKISTAN INSTITUTE  
OF DEVELOPMENT  
ECONOMICS**

*By*

**Nimra Asif**

**PIDE2022FMPHILEAF04**

**Supervisor**

**Dr. Ghulam Mustafa**

**MPhil Economics and Finance**

**PIDE School of Economics**

**Pakistan Institute of Development Economics,**

**Islamabad**

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## Author's Declaration

I Ms.Nimra Asif hereby state that my M.Phil thesis titled“The Impacts Zero-rating Tax on Firm Competitiveness and Productivity: A Case of Textile Sector” is my own work and has not been submitted previously by me for taking any degree from Pakistan Institute of Development Economics or anywhere else in the country/world.

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Date: 26/1/2026

Signature of Student



Name of Student: Nimra Asif

## ***Dedication***

***This thesis is devoted to my beloved Parents Siblings & to my Best Friend.***

To my beloved Parents and Siblings, whose unconditional love, endless prayers, and unwavering support have been my foundation and strength throughout this journey. I also dedicate this work to my dear friend Faheem Zahid, whose steadfast presence, encouragement, and quiet belief in me made the path lighter and the purpose clearer.

***Thank you for believing in me, even when I doubted myself.***

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With a heart both humbled and full,  
*Nimra Asif*

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## **List of Abbreviation**

SRO	Statutory Regulatory Order
SBP	State Bank of Pakistan
IPW	Inverse Probability Weighting
DR	Doubly Robust
FA	Firm Age
PSM	Propensity Score Matching
TFP	Total Factor Productivity
REER	Real Effective Exchange Rate
EC	Electricity Cost
RM	Raw Material

## **ABSTRACT**

This research analyzes the position of zero-rating within Pakistan's tax system, with specific emphasis on its use in export-oriented industries like textiles. Utilizing firm-level data from the year 2009-2023. Taking a rigorous empirical approach, using Propensity Score Matching together with fixed effects panel regression to estimate causal effects. The study seeks to understand the influence of zero-rating on export performance, local sales and total factor productivity taking into account raw material and energy costs as moderating factors. Findings reveal that zero-rating tax policy significantly enhance local sales of the benefited firms but has limited impact on export and productivity growth in the timeframe of observation. The taxation system of the country is still hampered by a restricted tax base, excessive indirect taxation, dispersed administration, and generalized evasion, which together weaken both equity and efficiency. The study concludes that while zero-rating may be a valuable policy tool for promoting export competitiveness, its long-term contribution to productivity and fiscal wellness is subject to far-reaching reforms that enhance tax administration, expand the base, and harmonize incentives with long-run economic growth goals.

**Keywords:** Zero-rating, Tax Policy, Firm Competitiveness, Productivity, Textile Sector, Propensity Score Matching, Export Performance, Energy Cost.

# CHAPTER 01

## 1. Introduction:

### 1.1. Background

The <sup>1</sup>zero-rating tax policy adopted to strengthen Pakistan's position of export competitiveness has remained a key government's approach to improve productivity of the textile sector which forms the economic core of the country.

It is mentioned in a newspaper article (2023) that Over the recent past, several incidences that some scientist categorize as black swans have negatively impacted the global economy. As a result of changes in economies many nations have developed policies regarding sales tax and VAT to better suit their economies. Globally, there has been positive impact of Zero-rating on some countries but also has inverse impact. (A. Tait Alan, 1998) Netherlands was the first country that opted for zero VAT rate for exports, to enable exporters retrieve input tax credit in full instead of the way it was prescribed by the EU where exports were exempted.

In Pakistan, being an area of concern for more than a decade, the experience of zero-rating policies in Pakistan is quite dynamic in its nature. The policy was formalized under Finance Act 2005 for Textile sector which introduced the zero-rating scheme. Subsequently, <sup>2</sup>SRO 1125(2011) provided operational framework for implementing zero-rating, which specifically targeted five key export-oriented sectors: Textiles, Carpets, Sports goods, Surgical instruments and Leather. This regime let these sectors to run without the constraint of sales tax so as to enhance export expansion and it was achieved with an aim of increasing the level of competitiveness of these industries as well as increasing efficiency of operations.

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<sup>1</sup> A zero-rated tax is a form of tax within a Value Added Tax or Sales Tax regime where some goods or services are taxed at zero rate. For instance, (Ahmad, 2015) define the zero-rated sales is when the output tax is set at 0 percent while the taxpayer can recover the input tax.

(A. Tait Alan, 1998)"Zero rating" indicates that a trader is truly exempt from VAT since he receives full compensation for any VAT he pays on inputs.

<sup>2</sup> SRO 1125(I)/2011 is related to tax provisions of textile, leather, carpet, sports goods, and surgical goods sectors of Pakistan.

However, this policy has been undergone multiple interventions over time:

**Table 1-1 Interventions over the time period**

<b>Year</b>	<b>Intervention</b>	<b>Objective</b>
<b>2011</b>	Application of zero-rating tax policy	To reduce production costs, enhance firm competitiveness, and improve firm productivity.
<b>2013</b>	Removal of zero-rating	To address fiscal revenue losses and inefficiencies in tax refunds.
<b>2016</b>	Reinstatement of zero-rating	To resolve liquidity constraints and revitalize export growth.
<b>2019</b>	Complete withdrawal of zero-rating	To increase tax revenues and reduce distortions in domestic markets.

Notification (SRO 1125) defined that it applies 0% tax rate on imports and the domestic supplies of industrial inputs which includes raw materials and also utilities like electricity and gas and the eligibility for Zero-rating can only be obtained where businesses are registered as manufacturers, importers, exporters or wholesalers of the given sectors (Textiles, Carpets, Sports goods, Surgical instruments and Leather). As per the notification the sales tax applying to the concerned goods are either zero or else limited to 5% under certain circumstances. The benefit of zero-rating is extended to goods that are used for manufacturing and that are used as inputs by registered manufacturers in the mentioned sectors.

The given table shows the over-view of SRO 1125:

**Table 1-2 Overview of SRO 1125**

<b>Items</b>	<b>Rate of Sales Tax</b>
Imports of industrial inputs by registered manufacturers in targeted sectors	0% - zero-rated
Commercial imports of industrial inputs	2% sales tax + 1% value addition tax
Public utilities and similar finished products	5% sales tax + 1% value addition tax
Sales to retailers or to end consumers	5% sales tax
Goods imported by manufacturers not falling in specified sectors	5% sales tax
Supplies of finished products to retailers or to end consumers	5% sales tax
Supplies of goods useable as industrial inputs to registered persons in zero-rated sectors	0% - Zero-rated
Retail sales of goods falling in specified sectors	5% sales tax
Processing charges for goods belonging to unregistered persons	5% sales tax
Supply of electricity and gas to the registered manufacturer in Zero-rated sectors	0% - Zero-rated

Despite the intentions of policy, it's sustainability and effectiveness are debated. Critics have accused the government of losing a lot of revenue through continuing to allow zero-rating for these sectors even as export volumes have failed to go up in equal proportion. Former Chairman of the FBR has pointed out that the zero-rating policy makes competition unfair, since exports are

exempted from the 17% sales tax, but local sales are not. This means that such a gap could lead to the biases so far as investment on exports is concerned at the expense of the domestic markets.

Developing economies frequently employ tax incentives, such as VAT zero-rating, to boost industries that focused on exports. Literature evidence on Kenya's Export Processing Zones (EPZs) confirms this finding explaining that VAT zero-rating does enhance business performance since it reduces costs and encourages investment. However, as observed in other developing countries such as Rwanda and the Dominican Republic, such policies also raise concerns regarding income losses and the durability of their advantages(NJOROGE, 2021).

Similarly, while these policies have proved beneficial in numerous foreign contexts, their enactment in Pakistan has created more controversy about their ability to foster more sustained development. Some people argue that the industry still has some problems with productivity and inefficiency and only scored small growth of global competitiveness even through these policies.

According to (Haq & Bukhari, 2020), tax systems in Pakistan have been experiencing several challenges based on a narrow tax, tax evasion, and the disintegration of enforcement systems, and changes need to be made to the overall framework including simplifying tax laws and establishing a single taxing authority to raise compliance rates and encourage export-oriented industries like textile. (Maqsood Ahmed & Ather, 2014) analyzed the tax expenditures and consider zero-rating as one of the means to boost export competitiveness and minimize the cost of production of goods and services that are to be exempted on VAT or sales tax payers. Both of these studies stress that the success of zero-rating is contingent on broader tax system reforms and proper execution that, in turn, are the keys to improving productivity and upholding fiscal well-being of the Pakistan's textile industry.

Furthermore, little research has been conducted in reveals the extent to which these regulations contribute to enhanced firm-level performance and exporters' viability in the long run. This research solely considers the textile sector in Pakistan in which both the beneficiary and non-beneficiary firms exist. This enables one to be able to compare the performance together with the evaluation of understanding of whether zero-rating policies are achieving set objectives or not.

### **1.1.1. Policy Background: Overview of relevant SROs**

This section provides the overview of SROs related to zero-rating tax policy.

- SRO 1125 31<sup>st</sup> December 2011:  
A regulatory order under Sales Tax Act 1990, which provided framework mainly focusing on the zero-rated tax or reduced to 5% tax on the 5 key sectors including Textile sector.
- SRO 504/2013:  
Update of PCT and description for several goods under SRO 1125.
- SRO 154(1)/2013:  
Made changes like word 2% will be applied wherever there is 0% in SRO 1125.
- SRO 221(1)/2013:  
Several changes made for the removal.  
Many other SROs were there like SRO 420(1)/2014, SRO 575(1)/2014, SRO 486(1)/2015, in which there is 17% of sales tax Applicable.
- SRO 491(1)/2016:  
SRO for the Reinstatement of zero-rating including SRO 36(1)/2017, SRO 584(1)/2017, SRO 868(1)/2017, SRO 1070(1)/2017, SRO 777(1)/2018, SRO 794(1)/2018, SRO 881(1)/2019, SRO 996(1)/2018
- SRO 110(1)/2019:  
This and other SROs for the removal and complete withdrawal of zero-rating.

### **1.2. Research Problem:**

Despite the prime importance of the textile industry in Pakistan and the subsequent adoption of the zero-rating tax laws for export competitiveness, the sector still has issues regarding low productivity and efficiency, as well as limited access to export markets and it is still unclear that whether this policy has significant effect on Firm-Level outcomes. There has been a critical issue which is lack of empirical evidence on comparing the zero-rated firms with the non-zero-rated firms in textile sector. This provides important questions regarding the potential gain that zero rating policies offer in terms of export performance and productivity are actual or whether those advantages are insignificant or unequal. Filling this gap is important to determine the impact of the policy and inform future action to fiscal policy.

### **1.3. Objectives of the Study:**

To assess how zero-rating tax policies, specifically SRO 1125 (covering zero sales tax on both final exports and inputs like raw materials and electricity), affect Pakistan's textile firms, with a particular emphasis on important factors: the firm's productivity as well as export sales and local sales share.

### **1.4. Significance of the study:**

Previous literature does not comprehensively address potential impacts of zero-rating tax in developing nations, with focus on textile sector as being sensitive to political and economic environment and conditions, textile industry is highly important for Pakistan economy in terms of employment and export income. This study will give a strong foundation for further research by systematically analyzing how these policies influence. Thus, the findings will be discussion worthy not only to the academia but also to the policymakers as they will uncover challenges and opportunities of tax administration in the context of Pakistan's tax system and benchmarked against the best practices prevailing around the world. PTC (Pakistan Textile Council) and APTMA (All Pakistan Textile Mills Association) would benefit this research for developing those strategies that could increase competitiveness and export earnings besides encouraging sustainable development in the textile sector of the country.

As for the recommendations for the government and related agencies, this work may suggest the further unchanged or the revision of the zero-rating tax policy depending on the current efficiency in developing the textiles sector and its competitiveness. Besides, the findings of the study might imply that the government should put in place other policies that may facilitate the growth of the textile sector unto the provision of infrastructure, the advancement of technologies and personnel development. It is hoped that the findings of this study will help to inform the formulation of polices which will support the future advancement of the textile industry in Pakistan.

### **1.5. Organization of the study:**

The study is ordered into seven chapters. The first chapter covers background of the study, introduces basic concepts about Zero-rating tax policy situation within the Pakistan textile sector and outlines the significance, research question and objectives of the study. Chapter two surveys the available literature concerning fiscal policies, competitiveness in exports, and firm productivity

with relevance to reference to zero-rate tax policies and their impact in developing countries, while identifying gap in current literature. Chapter Three presents the theoretical background and channels of transmission through which zero-rating tax policies potentially impact on firm competitiveness and productivity. Chapter five shows the stylized facts. Chapter five outlines the research methodology, data sources and empirical models applied, how the Propensity Score Matching and fixed effects panel regression approaches were applied in estimating possible effects of the zero-rating policy. Chapter six outlines the empirical findings and discussion where the impact of zero-rating on export performance, local sales, and productivity is discussed based on the input costs of raw materials and energy. In the last the Chapter seven concludes the overall study, highlights key findings, policy implications and offers suggestions and recommendations on the future studies.

## CHAPTER-02

### 2.Literature review:

Tax incentives especially the zero-rating policies are central to encouraging export-driven industries in developing countries(NJOROGE, 2021). These policies free firms from input and output tax cost burdens in aim to cut costs and improve competitiveness. Pakistan's textile sector which contributes more than 60% in total exports has been benefited from zero-rating regimes. Nevertheless, the experience of the operation of zero-rating policies in Pakistan is not static at all, it is quite dynamic. The policy was formally put under Finance Act 2005 for Textile sector which brought the zero-rating scheme. Subsequently, SRO 1125(2011) provided operational framework for implementing zero-rating, (Waseem, 2019a) which specifically targeted five key export-oriented sectors: Textiles, leather, Carpets, Sports and Surgical Instruments. These sectors were allowed to operate free from the control of sales tax in order to boost export promotion under this regime. it was removed in 2013, while the failure of a reliable refund system put exporters into liquidity constraints. It was returned to the service in 2016 but was pulled out of service in 2019 for the same issues.

The impact of different tax policies on Pakistan's firms has been extensively studied. Studies indicates that there is significant negative association of corporate tax rates with the domestic investment, FDI and firm value (KHAN et al., 2020). The increased taxes on corporates make industrial companies get discouraged in terms of research and development, which negatively impact the total factor productivity. Customs duty and sales tax are unfavorable factors while trade liberalization influences the productivity of firms positively (KHAN et al., 2020). The increase in sales tax (tax rate) and tax base by increasing sales tax along with the other proposed tax reforms is likely to result in lower investment, lower consumption and more poverty. The findings indicate that policymakers face challenging decisions in improving tax to GDP ratio in Pakistan and policymakers should consider a gradual approach to tax reforms (Ahmed et al., 2010).

#### 2.1. Zero-rating tax:

The use of the zero-rating as a fiscal policy has been popular mainly due to its favorable nature towards the reduction of burden and compliance levels.

(Waseem, 2019a, 2020) offers critical insights into how zero-rating can help solve substantial problems associated with VAT or its substandard implementation and how it influences the tax revenues. His research further shows that, noncompliance leads to significant revenue loss; only 54% – 78% of the potential VAT revenues are collected because of acts of fraud such as forgery of invoice. A natural experiment on an appropriate setting such as the textile industry revealed a positive correlation between the zero rating of the VAT and increased overall compliance rates. It not only has the effect of decreasing transactions costs but it also removed the cash flow problem for exporters, since firms will have to register for VAT now that there is less ambiguity about the tax system, thus decreasing the degree of tax evasion.

Nevertheless, the complex and fragmented tax system of Pakistan, based on exemptions and indirect taxes, is condemned by (Khalid & Nasir, 2020), who claim that the structure is regressive and illegitimate to the growth. They promote simplification of tax systems as a means of achieving the improvement in tax administration, lowering the costs of compliance, and competitiveness, which are partially aligned with zero-rating objectives but need broader systemic reforms.

Furthermore, (Poddar & Hutton, 2001) give a theoretical model where the role of zero-rating in maintaining the economic neutrality in VAT systems by enabling a credit of the taxes that are paid on input. They emphasize that while zero-rating can decrease tax burdens, its effectiveness is low when administration is not effective enough to guarantee compliance and prevent abuse, as the concerns raised by (Waseem, 2019b).

However, for as effective as zero-rating may be in augmenting compliance, and reducing evasion, its tax implications are another issue that deserves some considerations. Globally, they suggest that scaled up zero-rating could be highly detrimental in that it would result in reduced revenue collection processes needed for the financing of public needs. For instance, focused on regressive effect of VAT in the South Africa, (Von Berg, 2018) introduced the opinion that extending a list of zero-rated products may help reduce the adverse impact of VAT on the poorer section of the population, but at the same time led to increased budget deficits in case of uncontrolled expansion of this approach. Also, (Jansen & Calitz, 2015), analyze the experience of a South Africa, where zero-rating was applied to resolve the regressivity of VAT but was criticized due to its aggressiveness in increasing fiscal expenditures and dubious ability to target vulnerable groups, such zero-rating can be a lesson on how to balance needs on relief and raising revenues. This is augmented by the recent results of (Bogachov et al., 2024), who proved that the economic effects

of zero-rating are specific to the context and need to be implemented with caution in order to prevent adverse side effects.

In Namibia, (Odhiambo & Odada, 2015) realization on the fact that zero-rating basic commodities, led to annual revenue loss of about N\$310.4 million. Thus, expenditure of household of goods and services increased due to this policy but, this is still not enough to counterbalance loss of tax revenue in growing total income. As such, degree of freedom achieved through freedom of service provision is a positive one given the needs to balance relief through zero-rating with the need to ensure government has enough sources of revenue for its operations.

According to the study conducted by Ahmad, while the zero-rating policies of Pakistan positively impact the textile firms, they may not be enough to sustain competitiveness and productivity in the long run as opposed to more holistic incentive system of Bangladesh (Ahmad, 2015).

## **2.2. Export incentives:**

Export incentives differ from a country to country, including lower income tax, export finance incentives, zero rating sale tax, exemption from customs duties etc. (ADIL FAREEHA & NAZIR RABIA, 2023). Export financing schemes are strategic interventions which help exporters in dealing with finances and improving their business in the export markets. Pakistan specific and especially in the textile sector, two major financial programs are involved in the financing of export activities; Pakistan Export Finance Scheme (EFS) and Long-Term Finance Facility (LTFF).

(Defever et al., 2020) focuses that the EFS and LTFF are essential for increasing exporting volume through the higher degree of operational circulation. Studies have established that arising from access to funds from these financial schemes, credit constraints among firms has reduced hence enhancing export performance through increased productivity occasioned by lower operational financing costs. These schemes therefore help to bring in investment into better textile machinery which improves both the dimension and quality of the final goods.

(Ahmad, 2015) made a comparative analysis of export incentives relating to the textile sectors of Pakistan, India & Bangladesh, using a new 'equivalent exchange rate' approach to measure the efficacy of fiscal and non-fiscal incentives. His results show that although policies such as zero-rating tax and concessional financing decrease production costs, they're not constant across sub-sectors and countries. Especially, it reveals that Bangladesh offers more competitive advantages

from more liberal fiscal policies than that in Pakistan; the equivalent exchange rates are only 12-23% higher than those of Pakistan's while Bangladesh's are 37-45% higher.

(Zia, 2008) also extend the analysis examining the impact of EFS on exporting firms in Pakistan. This is because, according to him, the withdrawal of subsidized credit has more of a crippling effect on firms that are owned by private businessmen than on firms that are floated in the stock exchange. He found that for every 100 subsidized loans extended a half goes to financially unaffected firms and this has the effect of costing private firm output 0.75% of GDP in the long run. Zia also notes that export subsidies, which can help with the issues of financial constraint, rarely go to the right and serve as a signal that qualification criteria for subsidized credit need to be revisited with a view towards supporting weaker firms.

Additionally, (Zehra et al., 2021) analyzes the impact of government incentives on the textile industry export competitiveness and productivity. As much as LTFF exercise boosts export growth through enhancement of the technology intensity, other instruments like the Duty Drawback Scheme (DLTL), provide limited relief as they are dragged down with long administrative lags. This also confirms the fact that properly timed and implemented incentive structures as other fiscal incentive to improve efficiency in textile sector of Pakistan.

Despite the opportunities such as EFS and LTFF being incredibly important in supporting Pakistan's textile industry, its success is dependent on fairness and interconnectedness with a zero-rated tax scheme. Correcting these imbalances is important in promoting improvement in export competitiveness and fostering sustainable development within the field. It will be necessary to provide contributions, along with correct taxation policies to achieve productivity and competitiveness in this textile market.

### **2.3. Zero-rating and Export Competitiveness:**

Zero-rating tax policies have emerged as an important strategy for countries like Pakistan to enhance and boost export competitiveness. A study conducted by (NJOROGE, 2021) has established the enormous effects of zero-rating of VAT on EPZ firms in Mombasa County, Kenya. His work discovered that firm performance was enhanced by the adoption of zero-rating policies since it relieved companies from huge costs, encouraged investment and improved competitiveness of exports. However, he also pointed out difficulties including the fiscals' costs comprising of the lost revenues and the idea that the incentives could be exploited. This goes to

show why the Commission has encouraged the policy of check and balance on economic gains in relation to fiscal responsibility.

Additionally, (Akgündüz et al., 2018) considered the rediscount credit scheme in Turkey and firms' performance. Their studies showed that firms subsidized with loans posted an export growth of 65% more than firms that did not receive such support. On this, it shows that even though loans that target exports increase external competitiveness, domestic sales and the profit margin are not affected. As a result, it stresses the importance of credit facilitation for exporting countries in enhancing export operations, and early working capital limitations in capital-intensive industries like textile.

However, (Ahmad, 2015) noted that Pakistan textile industry could not maintain competitiveness because of these challenges, based on liquidity crunch and delays in tax refund. Export incentive, is significant for the textile sector of each Pakistan, India, and Bangladesh. Though Ahmad stated that zero-rating tax policies current in Pakistan make a contribution to bringing down production costs, it was perceived that they leave a long way behind Bangladesh which has rather liberal fiscal policies. Pakistan may lose export market share in the future according to his study, if it is not going to increase export incentives coupled with the implementation of the government's tax rebate policies.

The export competitiveness of textile sector has also been challenged by other factors include increased competition from the regional players, leading to loss of market share and export orders among others (Dad & Mehbub, 2019). Competitiveness was also affected by the end of the Multi-Fiber Arrangement (MFA) with productivity being mixed (positive and negative) in textile and clothing companies (Liaqat, 2013).

#### **2.4. Zero-rating and firm productivity:**

Zero-rating policies affect the firm by enhancing on productivity as well as on operational effectiveness. study by (Zehra et al., 2021) on the Pakistan textile industry revealed that the usage of the zero-rating regime complimented by financial incentives such as LTFF and RCET lowered energy costs and improved levels of technology application which in turn fostered an improvement in productivity. Similarly, (Zia, 2008) noted that export facilitation under Pakistan's EFS helped small and medium enterprises increase export output but had a limited effect on large listed firms.

The differential impact on firms of different sizes is also a common thread in the literature on the tax policies and firm performance. An example can be given related to the empirical evidence that when corporate tax increases, the total factor productivity (TFP) declines as a result of discouraged investments in research and development (R&D) provided by (KHAN et al., 2020). Conversely, liberalization of trade, through exposure to new technology and good quality raw material, has a positive effect on TFP. This lays an emphasis that even though zero-rating is a measure that targets the improvement of productivity, it can best achieve its goals when combined with the general policies on overall tax burden and creation of environment that can facilitate innovation and efficient distribution of resources.

Moreover, (Lovo & Varela, 2022a) studied the determinants of the productivity on listed Pakistani firms and they highlighted that higher import taxes on intermediate products and a decline in FDI in upstream services are undesirable. These constraints lead to availability of low-quality inputs, hence, affecting downstream production and competitiveness. This paper therefore posits trade policies that would open markets to Pakistan's textiles and attract FDI as effective measures in complement with the overall goals of zero-rating policies geared towards improving firm performance for the benefit for the textiles sector in Pakistan.

Research suggests that even though the objective of the zero-rating policy was to enhance productivity in terms of output it has yielded little results; an example is that reports show that trade liberalization has failed to permanently produce productivity improvements largely because of the structural limitations (Ishaq Zara, 2012). On the other hand, the access to cheap intermediate in terms of the availability of low-priced inputs that are provided by tariff decrease has also been associated with productivity and export quality implying that special tax measures may lead to improved results (Arif et al., 2023). Yet, it has been argued that the positive effect of tax cuts cannot be overestimated, but they do not exert the desired policy impact on them since companies continue dealing with internal inefficiency and competition (Dad & Mehbub, 2019).

(Grazzi, 2012) made a study on productivity and Profitability between exporter and non-exporters in Italy, where the views yield that exporters get productivity through learning effect and Economies of Scale but the difference in productivity is not reflected in the shaping of better profitability as they report high operative cost. This insight is, therefore, potentially useful for Pakistan's textile exporters to gauge what they might expect to encounter under zero-rating

policies. According to the study, the finding is that zero-rating can lead to productivity gains but must overcome compliance and operational costs, especially amongst the firms. The results of this research advance knowledge about the potential future adjustments that can be made to zero-rating policies so that they can attain higher levels of productivity as well as a stable export performance level.

## **2.5. Zero-Rating and Local Sales**

Zero-rating tax policy is not only a matter of exports economic implications but also have critical implications for the entire supply chain, particularly local sales of inputs relating to the export manufacturing. According to the study by (Poddar & Hutton, 2001), zero-rating in a VAT should be economically neutral and goods should be taxed in similar ways in spite of whether they are being sold in a market locally or across the state boundaries. Their suggested Prepaid VAT (PVAT) scheme permits zero-rating of interstate sales after demonstrating that the tax has been paid in the receiving state, striking a balance between fiscal sovereignty and symmetry of compliance and minimizes tax leakage.

## **2.6. Challenges and Policy Implications:**

Since, there are number of advantages associated with zero-rating policies, but these tend to be accompanied by challenges that have potential to reduce their sustainability. (Odhiambo & Odada, 2015; Von Berg, 2018) emphasized that such losses in revenues and other inefficiencies can create problems to the sustainability of such policies. (Zehra et al., 2021) called for better coordination between fiscal initiatives and larger industrial policies in order to preserve improvements in productivity. From the previous theories, the following should be done to improve export competitiveness: non-tariff measures should be discussed, and bureaucracy should be made less complex according to (Aleem & Faizi, 2021). According to (Ahmad, 2015), the government should simplify tax rebates and target processed goods to support Pakistan's textile industry sustain its competitiveness.

In the context of fiscal policy measures such as zero rating on textile sector, (Eggertsson, 2015) emphasizes the role and importance of aggregate demand management. While zero-rating reduces expenditures, it should be brought into consideration whether that would automatically raise the global demand, if broader economic conditions remain constrained. Thus, the effectiveness of zero-rating may be boosted when implemented along with other policies capable of stimulating

the demand, like infrastructure investments or incentives to export (Van Der Geest et al., 2020). (Cnossen, 1998) also supports the role of VAT in increasing export competitiveness in line with the objective of decreasing the export-costs.

The two decades of implementing zero-rating and exemptions on VAT in South Africa have resolved tax regressivity but controversy surrounds its effectiveness in targeting the poor and fiscal revenue effects and this viewpoint implies that fiscal impact can be experienced at high costs which could be better utilized through direct support measures (Jansen & Calitz, 2015). This aligns with the conceptual framework of the fact that while zero-rating lowers the tax burden and enhances efficiency (Gottfried & Wiegard, 1991), requires strong administration facilitated to ensure that it is not abused (Khalid & Nasir, 2020). Zero-rating can help depending on the bigger picture of taxation and economy, which have been confirmed by the research conducted at the Ukrainian market (Bogachov et al., 2024); it is noted that the easy tax regulation and the investment in technology and infrastructure must be supported by the government as long-term strategies that strengthen the economy and make it competitive with foreign markets.

(Khalid & Nasir, 2020) similarly criticize Pakistan's uneven and complicated tax structure, pointing out that its heavy use of indirect taxes and exemptions is backwards and against growth. Reducing complexity of taxes may promote development and improve competitiveness and make more ground for zero-rating policies to foster firm productivity.

## **2.7. Literature Gap:**

While previous studies have examined tax incentives, export financing, and zero-rating policies, however, there are still gaps in examining their business effects on Pakistan's textile industry. Like, (Waseem, 2019a, 2020) examined how zero-rating impacted VAT compliance and its revenues, but the impact on productivity, export competitiveness and local sales in individual firms went relatively unnoticed.

Moreover, although, EFS and LTFF of Pakistan is recognized in the literature, there is a lack of sufficient discussion regarding relationship between zero-rating policies and supported export performance. Another limitation is that the impacts of zero-rating for broader implication for fiscal health have also not been explored. Finally, there is a major lack of comparative work, such studies could help determine areas for policy reform in Pakistan. filling these gaps will give a new

perspective of how these zero-rating tax policies can be utilized to cultivate sustainable growth and competitiveness across Pakistan’s textile sector.

This paper will fill the existing research gap by examining firm-level dynamics to offer practical recommendations for improving the effectiveness of zero-rating policies and alleviate significant concerns for policymakers and other industry players.

## 2.8. Summary table of Literature:

**Table 2-1 Summary of the Literature**

<b>Author</b>	<b>Country</b>	<b>Sector</b>	<b>Findings</b>	<b>Impact</b>
Gottfried & Wiegard (1991)	Germany	Multi-Sector	Zero- rating enables companies to save tax paid on inputs, make production cheaper and achieve competitiveness. Exemptions also cause intermediate input to be taxed at high effective tax rates.	Positive
Khalid & Nasir (2020)	Pakistan	Multi-Sector	The tax system in Pakistan is fragmented, complex and predominantly indirect taxes and exemptions are heavily used. Easing of the tax regime would improve competitiveness.	Mixed
Waseem (2019, 2020)	Pakistan	Textile	These papers found that the introduction of zero-rating made it easier to adhere to the measures, avoid evasion, and manage cash flows for exporters.	Positive
Von Berg (2018)	South Africa	Multi-Sector	This paper establishes that while zero-rating reduced regressivity, it led to worse budget deficits.	Mixed

Haq & Bukhari (2020)	Pakistan	Multi-Sector	Pakistan tax is riddled with inefficiencies, low tax base and a very high tax defeated. Sweeping tax restructuring is needed, to increase competitiveness and productivity.	Mixed
Ahmed & Ather (2014)	Pakistan	Multi-Sector	Zero-rating has the potential to substantially reduce production cost by export-oriented firms enhancing their price competitiveness in the international market. A simplification of the tax code, the rationalization of tax rates is suggested.	Positive
Njoroge (2021)	Kenya	EPZ	This study also found that the ability of firms to reduce their value added tax (VAT) resulted in the improvement of their profitability as well as export competitiveness.	Positive
Defever et al. (2020)	Pakistan	Textile	LTFF and EFS enhanced productivity as well as the level of exports due to relaxation of credit crunch.	Positive
Ahmad (2015)	Pakistan, India, Bangladesh	Textile	Favorable incentives enhanced the cost structure of Pakistan but they have remained less competitive than Bangladesh.	Mixed
Akgündüz et al. (2018)	Turkey	Multi-Sector	Rediscount credit schemes increased export quantity, which did not have effects on home market sales and profitability.	Positive

Zehra et al. (2021)	Pakistan	Textile	The findings when it comes to the impact of policy deployment show that both zero-rating and financial incentives help enhance productivity and cut costs in energy intensive enterprises.	Positive
Zia (2008)	Pakistan	Textile	Export credit guarantees made proportional advantages for SMEs but created negligible effect for large players.	Mixed
Odhiambo & Odada (2015)	Namibia	Multi-Sector	While implementing the zero rating the new policy helped in raising the household expenditure but on the other hand the service providers had to had to bear a great amount of loss.	Negative
Aleem & Faizi (2021)	Pakistan	Multi-Sector	Basically, non-tariff measures and administrative barriers remained as the main obstacles of export development.	Negative
Grazzi (2012)	Italy	Manufacturing	Exporting firms have a higher output but the cost of operation is also high hence export participation reduces profitability.	Mixed
Poddar & Hutton (2001)	Multiple	Multi-Sector	The proposed Prepaid VAT (PVAT) regime makes it so that vendors can zero-rate when the purchaser/buyer makes refund evidence to the destination state. Under such a system tax leakage is minimized and compliance will be enhanced.	Positive

Van der Geest & Jacob (2020)	United States	Corporate	Zero-tax firms use non-aggressive tax avoidance techniques and these are less tax aggressive than firms with low Effective Tax Rates.	Positive
Cnossen (1998)	Global	VAT	VATs are widely used yet they struggle with taxation of hard-to-tax. Rate differentiation and interjurisdictional coordination are significant issues.	Mixed
Jansen & Caltiz (2015)	South Africa	Multi-Sector	Zero-rating has previously been utilized as a means to resolve the regressivity of VAT, but its effectiveness in the alleviation of poverty is restricted by widespread consumption used by the upper income bracket.	Mixed

## CHAPTER 03

### Theoretical Framework

This paper develops the theoretical framework that has been based upon intersection of fiscal policy theory and can be described through the combination of the fiscal policy, export-led growth models and the firm level productivity analysis. It offers a conceptual framework in the interpretation of the anticipated effect made by the zero-rating taxation policies on the competitiveness and productivity of the companies in the export orientation industry, like the textile mills in the developing countries like Pakistan.

#### 3.1. Foundations in Fiscal Incentives and Export Competitiveness

At its core, the policy of zero-rating tax is a fiscal incentive in the strict sense that intends to limit or wipe out the sales tax liability to exporters, so as to facilitate cost reduction in production which improves liquidity and competitiveness of the exports. Based on both classical trade theory and the neoclassical growth models, there is the assumption that decreases in transactional costs can provide an advantageous environment whereby firms can choose to invest more on productive investments, technical improvements, and expansion of the market. This is consistent with the economic neutrality policy upheld under the value-added tax (VAT) literature (Poddar & Hutton, 2001) whereby, a properly structured zero-rating system can avert the above problem of cascading taxes, make credits on the input taxes, and achieve the capabilities of sustaining an efficiency in the export sector.

Institutional perspective further indicate that such incentives work best within the setting where tax enforcement is strong and compliance is cheap (Khalid & Nasir, 2020; Waseem, 2019a). Administrative quality, the presence of refund mechanisms, and enforcement capacity are often the mediating factors of the effectiveness of zero-rating and in some cases may compound the desired policy effects. Other developing countries provide comparative experiences which indicate the risk of revenue loss, cost imposition in collection efforts and unexpected market distortions alongside prospects of zero-rating to trigger export growth (Odhiambo & Odada, 2015; Von Berg, 2018).

### **3.2. Firm-Level Outcomes: Exports, Local Sales and Productivity**

According to this theoretical framework, zero-rating theoretically should expand shares of the export sales by decreasing the cost of exportation in relation to the local sale. By receiving zero rating, the firms are likely to increase their likelihood of exporting commodities which is in line with the export-led growth theory (Balassa, 1983; Krueger, 1998). Nevertheless, the literature also warns that in the absence of strict market and being overseen, such policies can also support local sales (blurring policy intent) or undermine export incentives in case of strong cost pass-through effects (NJOROGE, 2021; Zehra et al., 2021).

On productivity, growth accounting and endogenous growth theories suggest that the more liquidity constraints due to low taxes, the more can be invested in technology and skills training which will improve total factor productivity (TFP). However, actual gains in productivity do not only rely on relief of costs but rather also on accompanying supplementary firm competence, infrastructure in sectors as well as the bigger macroeconomic conditions (Lovo & Varela, 2022b); (Jones & Ncube, 2021).

### **3.3 Fiscal Incentives and Tax Neutrality**

According to James (2013), fiscal incentives are perceived as complementary policies to promote firm expansion and increased competitiveness, particularly in developing regions. Keen (2013) argues that zero-rating of value-added tax (VAT) is a policy measure that lowers effective production costs by eliminating sales tax liabilities on exported goods and on inputs purchased. *Ceteris paribus*, the literature on VAT and sale tax argues that a properly designed tax system should evaporate production and trade distortions and neutralize cascading taxes to reduce tax burdens. Consequently, zero-rating offers tax relief and increased exporters' cash flow in/out liquidity.

Notably, the incentives ineffectively tackle. Waseem (2019), Khalid and Nasir (2020) contend weak tax administration, tax buyer complaints and delays, and tax compliance burdens allow 'contested rents' that ultimately neutralize VAT incentives. Distinct regulatory burdens and poorly enforced VAT exemptions may create an extensive tax collection system, and distort the market in Odhiambo and Odada (2015) and Von Berg (2018) studies on cross-regional trade in Africa and Asia. While zero-rating may augment export competitiveness, the returns are, at best, marginal without purposeful institutional policies.

### **3.4 Export-led Growth Theory**

The Export-Led Growth hypothesis maintains that countries are able to exploit the comparative advantage of other countries to grow their economies by exporting. This is done through economies of scale and acquiring foreign exchange which can be used to pay for capital imports. Export-Enhanced Growth allows firms to export surplus production and lower export costs which most firms find economically beneficial. Firms that have received tax export incentives have been shown to increase their foreign market participation and increase their exports.

However, firms that are export focused do not get tax incentives ‘pushing’ the benefits of tax incentives and other export benefits towards local sales. Unrestricted enforcement of tax exemptions allows the export surplus to be shipped back to the domestic market and undermines the incentive export policy. While the export led growth hypothesis theory stands, the empirical evidence to support growth policy frameworks should be refined.

### **3.5 Endogenous Growth and Firm Productivity**

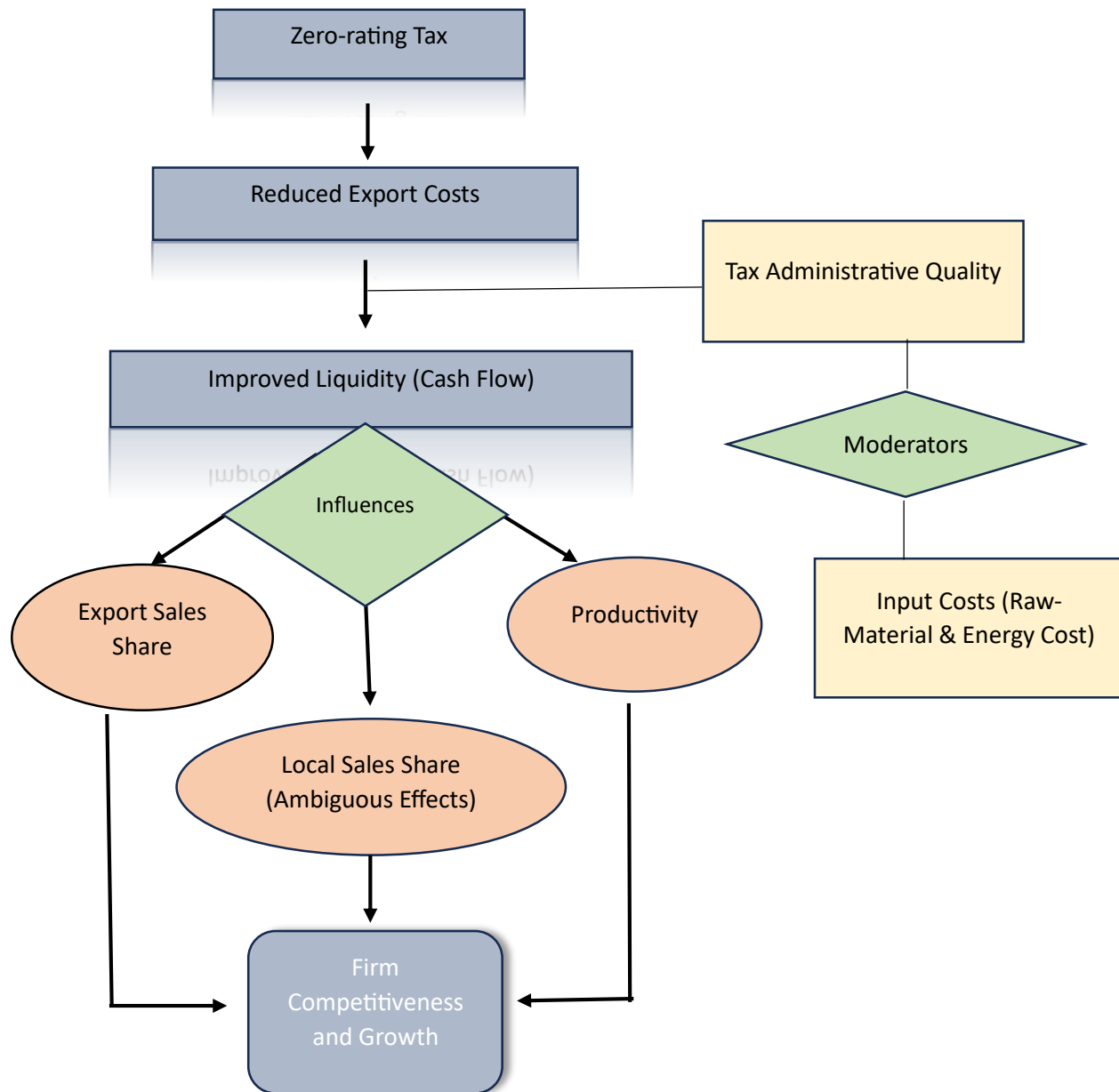
The emphasis within endogenous growth theory on innovation, knowledge growth, and human capital investments as vital components for long-term growth in productivity cannot be overstated (Romer, 1990; Lucas, 1988). Zero-rating provides tax concessions and increases liquidity to relax constraints on firm finances, allowing investments in firm-sponsored research, employee training, and technological advancement (Jones & Ncube, 2021). This increases total factor productivity (TFP), and the competitiveness and sustainability of the firm on the international market improves.

That being said, productivity improvements that come from fiscal incentives are not given and are predicated on the incorporation of firm-specific attributes (managerial quality, absorptive capacity) and macroeconomic variables such as the availability of infrastructure and energy (Lovo & Varela, 2022). With that being said, the theoretical framework posits the productivity impact of zero-rating operates through the liquidity channel, albeit with external constraints.

### 3.6 Conceptual Framework:

The visual representation of the relationships discussed within the theoretical framework the following conceptual framework is given:

**Figure 1: Conceptual Framework of the Impact of Zero-rating Tax Policy on Textile Sector**



Note: Tax Administration Quality is recognized as an essential theoretical moderator but due to data limitations it is excluded from empirical analysis.

This Conceptual framework illustrates the key relationship underlying this study. It shows how zero-rating tax policy removes export related costs by removing sales tax on exports and the inputs like raw material and electricity. These reductions ultimately enhance the firm liquidity which positively affects the exports share, productivity and may be the local sales share. Together these outcomes enhance the firm competitiveness and growth.

## **CHAPTER 04**

### **4.1 Stylized Facts of the Textile Sector in Pakistan**

#### **4.1.1 Economic Role of the Textile Sector**

Textiles is Pakistan's industrial economy backbone, being the largest sector in terms of manufacturing. It is significant to the economy, particularly 8-9 percent of Pakistan's GDP. It is also nearly 25 percent of the industrial value-added employment. It contributes 25 percent employment to added value. Moreover, the subgroup of textiles and clothing contributes 55 to 62 percent of total merchandise exports during the last few years, which illustrates this group is the largest export for the country, emphasizing Pakistan's reliance vulnerability to demand shocks in global markets and competitiveness. This also illustrates strength in the global textiles market.

#### **4.1.2 Contribution to Exports and Trade Balance**

Textile exports have consistently formed the bulk of Pakistan's merchandise exports. In 2023, total merchandise exports were reported at US\$27.7 billion, out of which the textile and clothing group contributed around US\$16–19 billion, roughly 58 percent of the total. The major export categories within textiles include:

Knitwear

Readymade garments

Bedwear

Towels and home textiles

Cotton yarn and fabric

Among these, knitwear and readymade garments have shown the highest growth rates due to demand from the U.S. and European markets. Bedlinen and towel exports also remain competitive because of Pakistan's strong cotton base. However, reliance on a narrow export basket exposes the industry to global market fluctuations and fashion cycles.

### **4.1.3 Employment Generation and Socio-Economic Linkages**

In Pakistan, the textile value chain is amongst the largest employers. Industry associations reiterate there are 10–15 million textile related jobs which represents roughly 40 percent of total manufacturing employment. Employment is generated in the various stages of spinning, weaving, processing, and garment stitches as well as in allied industries like cotton ginning and dyeing. Most importantly, due to cotton cultivation, the sector is able to support rural livelihoods. Thus, the industry has both rural-urban linkages and strong multiplier effects on the economy.

### **4.1.4 Structure and Organization of the Industry**

Conversely, the industry structure and organization can also be Pakistan's weak integration issue. The textile industry reaches to vertically integrated levels, from cotton ginning right down to final garment production. The major segments of the industries include:

1. Cotton ginning and spinning mills – Pakistan has one of the largest spinning capacities in the region.
2. Weaving and knitting – providing intermediate fabrics for domestic and export markets.
3. Processing, dyeing, and finishing units – though often technologically outdated, these add value to semi-finished goods.
4. Garments and made-ups (bedwear, towels, knitwear) – the most export-oriented segment.

The textile industry operates primarily in Punjab (Faisalabad, Lahore, Multan) and Sindh (Karachi, Hyderabad, Sukkur). Much of the spinning and weaving units are located in the region in and around Faisalabad, which is why it is often called the “Manchester of Pakistan.” Such industry concentration brings about supply chain advantages, but it also may exacerbate the underdevelopment of the region's infrastructure in relation to the industry's needs.

### **4.1.5 Export Destinations and Market Concentration**

The bulk of textile exports is sent to a limited number of countries, specifically the United States, United Kingdom, Germany, Netherlands, and Spain. The U.S. market is a particularly large customer of Pakistan's knitwear and garments. While exports to Europe have been aided by

preferential trade access through the EU's GSP+ scheme, Pakistan's limited trade with East Asia and Africa puts the country at risk of demand shocks in advanced economies, which is primarily unbalanced trade with Europe and the U.S. Compared to Bangladesh and Vietnam, which have successfully integrated into more dynamic global value chains, the limited scope of trade to East Asia and Africa is often highlighted as a key comparative disadvantage.

#### **4.1.6 Comparative Advantage and Regional Standing**

Thanks to its strong cotton production and spinning capacity, Pakistan has historically had a comparative advantage in cotton-based products. When analyzing the Revealed Comparative Advantage (RCA) index, it suggests that Pakistan's RCA is comparatively high with regards to yarns, fabrics, bedlinen, and towels. In regard to apparel exports, however, Pakistan is still lagging behind has still lagged behind Bangladesh, due to the latter's large scale and cost-efficient garment production. In terms of diversification, value addition and technological upgrading, India and Vietnam also surpass Pakistan. This depicts a structural imbalance, where Pakistan has competencies in upstream segments (yarn, fabrics) and lacks a strong competitiveness in the downstream, high-value apparel exports.

#### **4.1.7 Challenges of Productivity, Technology, and Modernization**

Even after considerable growth, Pakistan's textile sector experiences productivity issues when compared to countries in the region. The lack of automation and the use of old and out-of-date machinery technology, paired with minimal research and development, contribute to these productivity challenges. Pakistan's Total Factor Productivity (TFP) growth is less than that of Bangladesh and Vietnam. The major challenges are:

Energy costs and supply disruptions

The lack of modern technology and capital investment

Working capital issues, unrefunded taxes, and delays of refunds

Inadequate adherence to global quality and environmental standards

Consequently, while Pakistan is able to compete on low-value exports, the country's inability to transition to higher-value exports is design driven exports is problematic.

#### **4.1.8 Structural Constraints and Key Bottlenecks**

The following issues continue to hamper the textile sector's competitiveness:

Energy challenges: high industrial tariffs and outages

Liquidity challenges: refund delays

Tax and regulatory burden: zero-rating is undermined with complex refund systems

Over-reliance on the U.S. and EU: market diversification

Regulatory failure: patchy adherence to traceability and eco-sustainability

Directorate of zero-rating facilities suggests that structural reforms in technology, finance, and energy are crucial in tandem with Policy support.

Conclusively, the textile industry is the largest sector of Pakistan's economy, and the largest manufacturing and export-oriented industry in Pakistan. It sustains millions of jobs, earns more than half of the economy's exports, and preserves economic linkages between rural and urban regions. Nevertheless, the industry has serious structural issues like technological stagnation, unreliable policy, high energy costs, and market concentration. While retaining a relative advantage over competitors in exporting cotton-based goods, Pakistan has been unable to keep up with high-value apparel export competitors, primarily Bangladesh, India, and Vietnam. These industry-specific characteristics form the foundation of the analysis on how zero-rating tax policy impacts the productivity and competitiveness of textile firms in Pakistan.

### **4.2 Facilities and Incentives for the Textile Sector**

#### **4.2.1 Introduction**

Since the beginning, the Government of Pakistan has provided various tax incentives, regulatory relaxations, subsidized financing schemes and utility subsidies even before the supply-side policies. To continue providing employment and maintaining an increasing share in exports, the government must pursue facilities and incentives. Statutory Regulatory Orders (SROs) have been employed heavily in the provision of exemptions, zero-rating, and duties drawbacks in order to serve government policies.

#### 4.2.2 Statutory or Regulatory Orders (ROs and SROs)

SROs issued by the Federal Board of Revenue (FBR) have impacted the diverse sectors within the textile value chain. SROs indicate which inputs, machinery, or finished goods qualify for zero-rating, have a reduced duty, or are fully exempt. An overview of the significant SROs is displayed in the table below.

SRO/RO	Year	Key Provision	Impact on Textiles Sectors
SRO 1125(I)/2011	2011	Introduced zero-rating of sales tax on five export-oriented sectors (textiles included), which also covers inputs such as raw materials, energy, and services used in the export	Cost of production for exporters was reduced, liquidity was improved as the “tax-on-tax” effect was eliminated
SRO 154(I)/2013	2013	Amendment of previously stated customs concessions with respect to the scope of inputs and final products covered under the concession of zero-rating	Adjusting the scope attempted to plug revenue leakages while retaining support for genuine exporters
SRO 491(I)/2016	2016	Changes in the extent of exemptions and conditions under which ‘zero-rating’ can be claimed. Enhancement of reporting/documentation.	Compliance burden increased but so did the decreased misuse of zero-rating.

SRO 694(I)/2019 (rescindment)	2019	Withdrew zero-rating facility for five sectors i.e. they are moved to normal sales tax regime of 17%.	Delayed refunds increased liquidity challenges to the industry which in turn led to reduced competitiveness as stated by the industry
SRO 110(I)/2019	2019	Developed refund schemes to lessen impact of zero-rating removal; launched Faster Refund System.	Cash flow concerns were addressed, but delays continued within the system

**Source: FBR Statutory Regulatory Orders, official notifications (2011–2019).**

#### 4.2.3 Other Policy Facilities

The government, in addition to the SROs, has consistently been offering the following other facilities:

1. Export Finance Scheme (EFS): Short-term working capital loans at lower interest rates.
2. Long-Term Finance Facility (LTFF): Investment loans at lower interest rates for the purpose of modernization of machinery.
3. Duty Drawback of Taxes (DDT): Reimbursement of the customs/excise duties on the inputs that were imported and are utilized in exports.
4. Energy Subsidies: Lowered rates for gas and electricity given to textile mills.
5. GSP+ Benefits (EU): Trade facilitation through preferential access to the European markets.

These were aimed to keep the Pakistani textiles competitive, while the regional peers were aggressively supported by their government.

#### **4.2.4 Effectiveness and Challenges**

These measures have been of relief, but rather mixed in their effectiveness:

Positive outcomes: Lowered production costs, provided liquidity to the exporters and sustained export growth in high-demand years (ex. 2011–2017).

Negative outcomes: Constant changes to SROs led to a lack of predictability in policy. The 2019 withdrawal of zero-rating led to refund backlogs and trust erosion between the industry and the government. The misuse of the facilities, along with rent-seeking and weak enforcement, was also problematic.

#### **4.3.5 Relevance to zero-rating and Competitiveness of the Firm**

The introduction and withdrawal of zero-rating policy through SROs demonstrates the policy inconsistency firms deal with. Competitiveness for a number of textile firms relies not only on global demand and input prices, but also on refund claims being processed, for quicker access to working capital. In practice, delayed refunds mean zero-rating benefits exist on paper but not in cash flow reality. This situation forms the backdrop of the present study, considering the lack of real improvements the study intends to investigate on zero-rating policy and its impacts on competitiveness and productivity of a firm.

Historically, the textile sector has depended on a mix of tax incentives, subsidized financing, and regulatory relaxations. SROs 1125(I)/2011 and its withdrawal in 2019 (SRO 694) with subsequent refund mechanisms, institutionalized and then removed zero-rating, demonstrating the fragility of this policy tool. This fragility is crucial for understanding how firm-level outcomes are affected by the zero-rating facilities. This is the primary focus of the thesis.

### **4.3 Tax Regime and Zero-Rating Context**

#### **4.3.1 Introduction**

There are some areas of question with Pakistan textile policy, especially due to the textile sector being the nation's largest exporter. Over the years, Pakistan's government has manipulated taxes to control the behavior of textile producers. The absence of a sales tax can benefit a sector greatly, however the sales tax can also control how a sector functions, this has led to a never-ending discussion revolving around whether the textile sector should be exempt from sales tax, zero-rated,

or taxed at the standard rate and refunded. This section covers the evolution of tax policy, defines zero-rating, and suggests a quantitative tool to analyze the tax burden on sales.

### **4.3.2 Evolution of the Tax Regime in Textiles**

#### **1. Pre 2011 Era:**

The vertical being taxed operated with a mixed regime of exemptions, reduced duty, and selective rebate.

Tax cascading and delays in refunds certainly posed a problem for textile exporters.

#### **2. Zero-Rating Under SRO 1125 (2011):**

In 2011, the FBR made SRO 1125(I)/2011 which made sales tax zero-rated for 5 export-oriented sectors which included textiles.

The zero-rating of primary, intermediary, and energy resources used in export processing made export production tax exempt.

This removal of tax on the value chain made sales tax avoid refund claims and improved liquidity.

#### **3. Changes and Restrictions (2013–2016):**

SROs 154(I)/2013 and 491(I)/2016 made changes to the scope of eligible goods. Compliance documentation was tightened to avoid misuse.

#### **4. Removal of Zero-Rating (2019):**

July 2019 SRO 694(I)/2019 repealed the zero-rating facility and reintroduced the standard sales tax rate of 17%.

The government justified this policy change as broadening the tax base.

As a measure of concession, FBR introduced the Faster Refund System (FRS) per SRO 110(I)/2019, advertising minimal, 72-hour refund processing times.

#### **5. Post 2019:**

Refund processing was inconsistent, resulting in several exporter complaints due to a lack of liquidity.

With demand shifting globally, industry members like APTMA claimed the removal of zero-rating eroded competitiveness.

### **4.3.3 Trends and Implications**

There was a significant decrease in effective tax burdens during the zero-rating regime (2011–2019) due to the exemption of input and output transactions.

Post-zero-rating (after 2019), the tax burdens which theoretically could have tax refund implications, increased. The refund delays, however, meant more working capital and cash flow strain which were more burdensome.

The graphical depiction of Tax Burden % over Time will elucidate how the periods with zero-rating geographies were more competitive and liquidity enhanced compared to periods with refund geographies.

### **4.3.4 Policy Debate**

The policy priorities in the zero-rating debates are:

**Revenue Mobilization:** The zero-rating proponents indicate that zero-rating policies restrain the tax base and lead to leakages.

**Export Competitiveness:** The industry argues far stronger that refunds do not work efficiently, and only zero-rating ensures smooth liquidity.

In the case of textile firms, the more pertinent the question asked is not whether taxes are in fact refunded, but whether they are refunded within a reasonable time period. Stalled tax policies are more of a hidden cost than the potential gain in competitiveness which is meant to be achieved through the zero-rating.

The changes in the tax regime for textiles showcase the challenges posed by the interplay of fiscal policy and the competitiveness of industries. While zero-rating the tax (2011-2019) was able to streamline tax flows and lighten the burdens more than the simplified tax system used in 2019, its removal reinstated the dependence on refunds, which has adverse effects on the productivity of firms. The Tax Burden % framework serves an analytical purpose in assessing these effects over time and paves the way for the empirical chapters of this thesis.

## **4.4 Comparative Regional Analysis of the Textile Sector**

### **4.4.1 Introduction**

Like many other industries in the region, the Pakistani textile sector does not work in a vacuum. It is affected by international competitive pressures, domestic policies, and other regional factors. Competing in the global textile and apparel value chains are Bangladesh, India, and Vietnam, each with their own policies related to industrialization and taxation. This segment outlines the insights regarding Pakistan's exports performance, taxation, costs, comparative advantage, and other key indicators in comparison to these economies.

### **4.4.2 Export Performance and Market Share**

Pakistan: 58% of the country's total exports, or US\$16–19 billion worth of textiles, are exported on average annually. The export composition, however, is heavily weighted toward cotton products, with the country exporting yarns, fabrics, home textiles, and garments.

Bangladesh: Exporting apparel worth US\$45–47 billion in 2023, the country is an export powerhouse with apparel exports constituting over 80% of its total exports. Exporting low-cost garments on a large scale, the country benefits from economies of scale and the EU's duty-free access under the Everything But Arms (EBA) scheme.

India: The value of textile and apparel exports for the country was US\$42–45 billion in 2022–23, with exports diversifying to include yarns, fabrics, garments, and technical textiles. A domestic market also absorbs a large portion of the production.

Vietnam: Observed apparel exports of US\$37–39 billion in 2022-2023 and did not produce significant cotton. Its competitive advantage stems from foreign direct investments, technology adoption, and trade agreements (CPTPP, EVFTA).

### **4.4.3. R Tax and Incentive Regimes**

Pakistan: Tax obligations followed by zero-rating (SRO 1125, 2011-2019) and post-2019 refund-based systems relied on zero-rating. This with frequent policy changes creates uncertainty.

Bangladesh: Tax holidays, bonded warehouse facilities, and duty-free imports of machinery and inputs, and textiles as export goods, incurring no sales tax, reinforce tax incentives.

India: Offers Rebate of State and Central Taxes and Levies (RoSCTL), duty drawbacks, subsidized credit schemes, and sales tax/GST refund through a system perceived as stable.

Vietnam: Offers tax holidays to foreign corporate investors, duty exemption for inputs, and special economic zones with reduced logistics costs and taxes.

#### **4.4.4 Cost Structures and Cost Competitiveness**

Labor Costs: Bangladesh, with a minimum wage of circa US\$95/month, 2023, is the lowest cost producer as compared to Pakistan US\$110-120/month, India US\$140-150/month, and Vietnam US\$180-200/month.

Energy Costs: In Pakistan, industrial tariffs for energy are higher, volatile with a higher cost, and exceed US¢12/kWh. This is still higher than the subsidized rates of Bangladesh of US¢7-8/kWh.

Technology and Productivity: India and Vietnam outrank the rest in modernization and technology, while Pakistan and Bangladesh are the laggards, with the latter balancing the difference due to its competitive labor cost.

#### **4.4.5 Comparative Advantage**

Pakistan: Cotton intermediate and finished goods are his strength, while the synthetic fiber and the high value fashion are his weaknesses.

Bangladesh: Comparative advantage in mass garment production and buyer relations with overseas brands.

India: Balanced advantage across the entire textile value chain, from cotton and man-made fibers to technical textiles.

Vietnam: Advantage in agility, integration with global value chains, and preferential trade agreements.

#### **4.4.6 Lessons for Pakistan**

1. Policy Stability Matters: In contrast to Pakistan, where SROs are frequently and unpredictably revised, Bangladesh and Vietnam maintain stable tax regimes with limited revisions.

2. Diversification is Key: For Pakistan, the necessary move is to extend the cotton-based exports to include synthetic fibers, apparel design, and technical textiles.

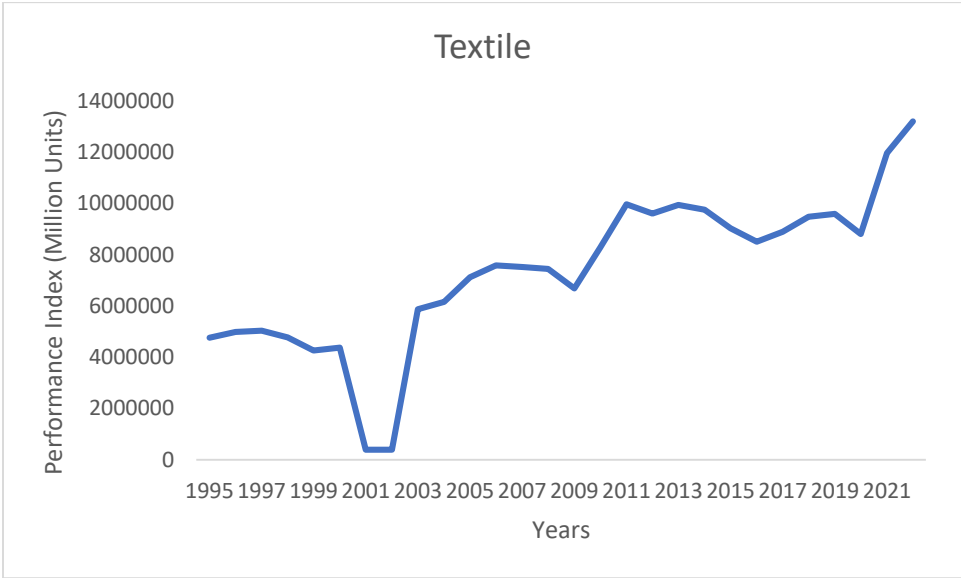
3. Trade Agreements: Vietnam's FTAs exemplify how preferential access can be transformative in global competitiveness. Pakistan's modest trade deals limit it in global reach.

4. Cost Competitiveness: In order to compete with her neighbors, Pakistan needs to resolve energy cost and refund delays.

The comparative analysis shows that although Pakistan retains a natural advantage in cotton based products, when paired against Bangladesh, Pakistan still lacks in garments, India in diversification, and Vietnam in integration with global supply chains. Without Pakistan modernization to lower its energy costs and balance its tax regime, zero-rating will unlikely ensure long terms competitiveness.

**4.5 Graphical Representation**

*Figure 2: Long-Term Trends in Pakistan Textile Sector Performance (1995-2022)*



There have been wide-ranging changes in the performance of the textile sector from 1995 to 2022. Throughout the late 90s, the sector performed relatively well, but there was a steep downturn in 2001 to 2002 when the value almost fell to zero. This downturn could have been the result of significant disruptions and/or gaps in reporting. The sector then experienced a robust recovery, and

there was an increase in textile sector performance from 2002 to 2007, recording values above 7 million. Performance of the sector experienced another setback during the 2008 to 2009 global financial crisis, but the sector did reach its highest value of nearly 10 million in 2011. The performance then entered a phase of decline and stagnation from 2012 to 2017. The phase from 2019 to 2022, however, showed downward growth, with the sector finishing in 2022 at its highest value of over 13 million. This growth, along with the preceding stagnation, demonstrates the sector's ongoing vulnerabilities and long-term expansion potential.

## Chapter 5

### Data, Variable and Methodology

#### 5.1 Data Source

The data which are used to analyzed the influence of Pakistan zero rating tax are taken from the lists of firm available on the SBP and Government Beneficence. In the list, there are total 4080 firms, we collected number of firms 129, which remain 116 after because of the missing data, and time period from 2009-2023. The number of observations is computed by multiplying number of firms, which is 116 and 15 years, so it makes 1740 number of observations used for analysis. We have identified the zero-rating tax after extraction of the data. According to the Ministry of Commerce and Revenue, 4080 firms avail the zero-rating tax policies. All of these firms are registered according to some policies that are applicable to the different sectors which include the textiles, that qualify for reduction in zero-rated sales tax on their input and exports. The data consistency and list of firms are confirming from the listed public registered companies on the Pakistan Stock Exchange (PSX) which have authentic financial statement and annual reports. Among 129 firm, 85 firms are beneficiary of zero-rating policies and 44 firms have non-beneficiary.

#### 5.2 Variable Description:

This section discusses about the description of the variables and check the effects of zero-rating tax policy on the textile files productivity and competitiveness. The discussion about the outcome variables, and some others independent variable along with some control variable which are used in the analysis.

##### 5.2.1 Outcome Variables

The study focuses on three primary outcome measures representing firm performance dimensions relevant to competitiveness and productivity:

##### Export Sales Share

This measure is defined by the proportion of a company's total sales revenue that comes from exports. It is derived from the value of export sales divided by the firms' total sales for the duration of time. The indicator indicates the extent of a company's integration into foreign markets and its

dependence on foreign demand. A greater export sales proportion indicates a more outward orientation towards foreign markets, something that can be affected by competitiveness, quality of the product, trade facilitation policies, and support from policy towards exports.

Export sales share measures a firm's **export intensity**, calculated as the ratio of export sales to total sales:

$$\text{Export Sales Share} = \text{Export Sales} / \text{Total Sales}$$

This variable gauges the degree to which firms engage with international markets, reflecting export competitiveness potentially influenced by policy interventions.

### **Local Sales Share**

This is the percentage of a company's total sales revenue coming from local markets. It is derived as domestic sales value divided by the overall value of sales for each company in any given time. Local sales reveal the company's reliance on internal market demand and its relative competitiveness in the national economy. Fluctuations in this variable can result from a change in conditions in the domestic market, the marketing policies of firms, or the effect of policies aimed at inducing internal demand.

### **Total Factor Productivity (TFP)**

#### **TFP Calculation:**

This measure is the rate of change in a company's level of efficiency in transforming inputs (i.e., labor and capital) into output. It is generally estimated as the residual from a production function after the contributions of measured inputs have been accounted for, and captures gains from better technology, management technique, and other efficiencies. TFP growth is a proxy for long-run competitiveness and innovation ability, with positive growth implying increased productivity and negative growth reflecting potential inefficiencies or falling performance.

In this study, the total factors productivity is calculated through macroeconomic approach which are name as growth accounting. The research adopted and are conducted using the appropriate used by Siddique (2022). The mathematically production is given by

$$Y = F(A, K, L) \dots \quad (1)$$

Where, Y show the Output, L is labor and K is the capital. A is the technology or residual which show the total factor productivity. The growth rate equation of the production function are written as below

$$g^Y = \alpha g^L + (1 - \alpha)g^{TFP} \dots \quad (2)$$

Where,  $g^Y$  represents the growth rate of output,  $g^L$  represents the growth rate of labor,  $g^{TFP}$  represents the rate of change in TFP, and  $\alpha$  is share of labor in output and  $(1 - \alpha)$  represents share of capital in output. The output growth rate is, from equation 2, a function of the growth in the employed labor force, in the stock of capital, technological progress that is captured by TFP.

If Input and outputs are observable, then TFP may be calculated as:

$$g^{TFP} = g^Y - \alpha g^L - (1 - \alpha)g^K \dots \quad (3)$$

In this study, the growth accounting approach which assume that neoclassical constant return to scale of Cobb Douglas production function is adopted and employed and the equation are given below

$$Y = AK^\alpha(L)^{(1-\alpha)} \dots \quad (4)$$

Equation (4) can be written in the growth form as below

$$\Delta \ln(Y) = \alpha[\Delta \ln(k)] + (1 - \alpha)[\Delta \ln(L)] + \Delta \ln(A) \dots \quad (5)$$

From the equation (5), the total factor productivity can be computed as following below

$$\Delta \ln(A) = \Delta \ln(Y) - \alpha[\Delta \ln(K)] - (1 - \alpha)[\Delta \ln(LH)] \dots \quad (6)$$

According to the Asia Productivity Organization, the ratio of Capital and labor are  $\alpha$  is 0.52 and  $1 - \alpha$  is 0.48. The result are in consistent with study of Siddique 2022.

### 5.2.2 Identification of Beneficiary Firms

Beneficiary firms are determined by whether or not they participated in the policy program of interest. A firm is defined as a beneficiary if it was the recipient of direct support measures like subsidies, tax incentives, credit facilities, or other means of assistance extended through the policy intervention over the reference period. The identification is binary, such that 1 signifies a beneficiary firm and 0 signifies a non-beneficiary firm. This separation makes it possible to compare performance outcomes between firms that were subjected to the policy intervention and

firms that were not, hence controlling for the causal effect of the policy. The classification of the firms is on the basis of zero-rating tax which measured reduction of production cost and it enhance the competitiveness among the sectors which include the textiles.

The binary dummy variables are constructed which is used as treatment which indicates that firm registered as beneficiaries for zero rating tax policy are coded 1 and 0 otherwise. 0 indicates that firms have non-beneficiaries.

The beneficiary status is based on the Ministry of Commerce's exhaustive registry of companies entitled to zero-rating advantage under strict criteria. They are manufacturers, importers, exporters, and wholesalers in targeted industries such as the textile sector, where inputs and end-products are zero-rated or taxed at a ceiling rate. This binary classification is central: it supports the empirical approach by delineating the treatment and control groups whose performance paths are compared in order to pinpoint the causal effect of zero-rating policy interventions. The indicator not just captures formal entitlement but also proxies for firms' capacity to avail themselves of meaningful fiscal assistance and input cost benefit with leverage effects downstream on productivity and export competitiveness. Significantly, this definition recognizes policy subtleties: as much as the zero-rating system benefits qualified companies by not taxing industrial inputs, critics have raised issues of market distortions and differential benefits. Through strict definitions of beneficiaries, this research sets a seminal platform for assessing these impacts in Pakistan's vibrant textile sector.

### 5.2.3 Control Variables and Covariates

To robustly isolate policy impacts, the models control for firm-specific and macroeconomic factors affecting performance:

**Table 5-1 Description of the Control Variables**

Real Effective Exchange Rate (REER) (Index)	Able to capture the effect of changes in the foreign exchange on export competitiveness.	(N. Ahmad & Kalim Professor, 2014)
Equity Ratio (Percentage)	Proportion of shareholder equity in total assets, reflecting financial health	
Capital Labor Ratio (PKR/worker)	Logarithm of capital stock per worker, measuring capital intensity.	
Export Status (dummy variable)	Binary variable indicating whether a firm is actively engaged in exporting.	
Energy Cost (EC) (PKR/kWh)	Average industrial electricity tariff rate.	
Firm Age (FA): (Years)	Age of the firm in years.	
Firm Size (FS) (Million PKR)	In terms of the total of assets or turnover.	
Labor(L) (Number of Employee)	Defined as the total employee or total labor hours.	(Omer Siddique, 2023)
Capital(K) (Million PKR)	Capital input inclusive of capital equipment like the machinery and equipment.	(Omer Siddique, 2023)
Raw material Cost (Million PKR)	Log of expenditures on raw materials, proxying input intensity.	

These covariates mitigate confounding biases by capturing heterogeneity that might influence productivity and sales independently of policy exposure.

### **5.3 Identification Problem:**

We have face on big issue which is comparability treatment and control groups of the firm because some firm levels are small and some firm levels are large scale, so the comparable of these firm are facing in such circumstances. For comparability, we need same level characteristics features of the all firms. if we run a model in such case, then there will be a problem of sample selection and result are not comparable. We have used to propensity matching score for the comparable of these treatment and control groups. For the comparability, we have matching selections on the basis of covariates. If the propensity score is 1 for both treatment group and control group, then these firms will include in one group which have same characteristics and features and these are treatment and control groups. The indicator 1 show the beneficiary group and 0 show the non-beneficiary. These groups are comparable.

### **5.4 Sample Selection Criteria**

The criteria of sample selection used in this study is reasonable and fits the purposes of assessing the effect of zero-rating tax policy on firm competitiveness and productivity in the textile industry in Pakistan. The choice of textile companies is not without reason because the industry forms the main part of the manufacturing industry in Pakistan and contributes a significant portion of the overall export, labor, and foreign exchange earnings. Since the policies of zero-rating under SRO 1125 were mainly geared towards facilitating the export-oriented textile firms, the limitation of the samples to this area guarantees direct policy consideration and reduces heterogeneity between sectors.

The researchers use firm-level panel data, which is specifically appropriate in assessing policy in the Pakistani setting. The firm-level analysis can be used to capture the heterogeneity in the size of the firms, the export orientation and the structure of production i.e. the variables that are of paramount importance in explaining the influence of tax incentives on the performance outcome. Additionally, the chosen period of time covers several stages of the zero-rating regime, such as its establishment, its maintenance, and policy changes. This time frame helps in enhancing identification through comparison of pre- and post-policy periods, and other comparison between beneficiary and non-beneficiary firms.

The fact that the sample consists of both zero-rated and non-zero-rated firms is also a plus of the relevance of the selection criteria. This comparison group is also necessary to isolate the treatment effect of zero-rating, more in a non-random policy setting where firms select themselves into export-intensive activities. The study helps to minimize possible selection bias as well as enhances the validity of causal inference because the firms in the control group are in the same industry and subjected to similar macroeconomic environments.

Also, the companies that had not filled their financial records or had a history of inconsistent reporting were not considered to preserve the reliability of the data. Although this limits the sample size, it enhances the quality and consistency of the data which is essential in econometric analysis in a place where constraints of firm level data is prevalent. Since Pakistan has low reporting standards and administrative limitations, the trade-off of focusing on completeness and consistency of data is rational and justifiable.

On the whole, the selected sample criteria are suitable to the objectives of the research, policy, and available data in Pakistan. The sample used offers the balance and representative foundation of assessing zero-rating tax policy efficacy and provides methodological rigor and policy relevancy.

## **5.5 Empirical Model**

This part describes the two-stage empirical approach used to pinpoint the causal impacts of Pakistan's zero-rating tax policy on the performance of textile firms. The strategy combines Propensity Score Matching (PSM) for reducing observable selection bias with fixed effects panel regression for controlling unobserved heterogeneity.

The initial step is directed at the inherent problem of selection bias resulting from the non-random distribution of zero-rating benefits. Companies receiving the policy may systematically vary from non-beneficiaries along dimensions that also determine their performance. To avoid this bias, propensity score matching is employed to achieve balance between beneficiary and non-beneficiary companies' distribution of observed covariates. The propensity score is modeled using a logistic regression equation in which the binary dependent variable takes the value of 1 if the company is a beneficiary or 0 otherwise. Covariates in the model include firm-level attributes like the share of local sales, equity ratio, log of firm age, status of export, and growth of total factor productivity. The pre-policy period, 2009–2010, is used to estimate these scores so that matching captures baseline similarity prior to treatment.

This logistic propensity score model is formally expressed as:

$$\begin{aligned} P(\text{Beneficiary}_i = 1 | X_i) \\ = F(\beta_0 + \beta_1 \text{LocalSalesRatio}_i + \beta_2 \text{EquityRatio}_i + \beta_3 \log \text{Age}_i \\ + \beta_4 \text{ExportStatus}_i + \beta_5 \text{TFPGrowth}_i) \end{aligned}$$

Each treated firm is subsequently matched to one control firm with the most similar propensity score by nearest neighbor matching, generating a balanced matched sample with equalized covariates. Only the matched firms (those bearing a matching weight of 1) are propagated forward for outcome estimation, limiting comparisons to similar entities and increasing internal validity.

The second step produces policy impacts on outcomes by using fixed effects panel regressions on the matched sample. The models control for unobserved, time-invariant firm characteristics and shared macroeconomic effects by including firm and year fixed effects, respectively.

This combined strategy is doubly powerful; it yields consistent estimates of the zero-rating policy effect under either the matching model or the fixed effects regression specification. Additionally, limiting the outcome analysis to matched firms weight equal to 1 ensures estimation of effects over similar firms, enhancing causal interpretation.

Post-estimation, marginal effects of input cost on every outcome are calculated separately for beneficiary and non-beneficiary firms to enable elaborate explanation of differential treatment effects. These marginal effects are visually represented to bring out policy-induced heterogeneities in firm response and behavior to changes in input costs.

### **5.5.1 Regression Estimation: The Doubly Robust Fixed Effects Approach**

The doubly robust (DR) estimator is a causal estimation procedure that merges outcome regression with inverse probability weighting (IPW) to provide treatment effect estimates. It is referred to as "doubly robust" in that it provides consistent estimates if either the model for outcomes or the model for treatment assignment is appropriately specified, though not necessarily both. In the fixed effects context, the estimator further accounts for unobserved, time-invariant heterogeneity among firms or units, thus eliminating omitted variable bias that is constant over time. The method comes in handy for policy analysis since it accounts for potential selection on observables in treatment assignment and, in addition, controls for unobservable firm-specific characteristics. The estimation usually includes (i) imputation of treatment propensity (beneficiary status) from observed

covariates, (ii) using inverse probability weights to obtain balance in the sample, and (iii) running a fixed effects regression of the outcome on treatment status and additional covariates.

After matching, outcome models are estimated using fixed effects panel regression. This design exploits the richness of the panel data, controlling for all time-invariant unobserved firm-level factors and macro-level shocks.

$$\begin{aligned} \log(Y_{it}) = & \beta_0 + \beta_1 \log(X_{1,it}) + \beta_2 X_{2,it} + \beta_3 \log(X_{1,it} * X_{2,it}) + \beta_4 \log(X_{4,it}) + \beta_5 \log(X_{5,it}) \\ & + \beta_6 \log(X_{6,it}) + \beta_7 \log(X_{7,it}) + \beta_8 \log(X_{8,it}) + \delta t + \mu_i + \varepsilon_{it} \end{aligned}$$

In the above equation, we have used the three different dependent variables and estimated it. The dependent variables are local sales, total factor productivity and export sales. The independent variable X1 variable is Raw Material Cost, X2 is beneficiary, third is the interaction term of Raw material and material cost, X4 is energy cost, X5 is age, X6 is equity, X7 is capital labor ratio and X8 is export status.

These models are discuss based on the two chancels, one is the raw material and energy cost channel where the policy raw material interaction term is included in the model which are shown in the above equation. Second interaction term which policy energy cost interaction. Secondly, the impact of productivity and also the two same interaction term are included in the models. To assess how the zero-rating tax policy influences export competitiveness of textile firms, fixed effects panel regressions are estimated on the matched sample restricted to firms engaged in export activities. The analysis considers two alternative channels through which input costs may affect export performance: raw material costs and energy costs. These specifications include interaction effects between input costs and policy beneficiary status to identify heterogeneous responses.

The method and data analysis used in this study are empirical models and are adequate in determining the effects of zero-rating taxation policy on the firm-level productivity and competitiveness in the Pakistani textile industry. Zero-rating is not an accident but a self-selection of firms in the export-oriented activities and allow firms to receive tax exemption depending on their export behavior. The non-random policy environment also implies the need to use an empirical approach that could help in overcoming selection bias and unobserved heterogeneity, which are especially high in developing economies like Pakistan.

To deal with those issues, the research adopts the Propensity Score Matching (PSM) technique along with the panel data fixed-effects-estimation method. In this regard, PSM is appropriate since it builds a similar control group of non-zero-rated firms using observable firm characteristics, thus reducing the selection bias due to systematic differences between a benefit recipient and a non-benefit recipient firm. This is particularly applicable in Pakistan where the firm size, export orientation and access to finance differ significantly within the textile industry and determines the policy participation and performance outcome. After matching, the fixed-effects panel regression model can be utilized so that the analysis is able to suppress the time-invariant unobservable firm-specific variables, including managerial talent, production culture, and location-specific advantages. The fixed-effects specification enhances the strength of causal inference by allowing variation across firms within the firm over time, reducing the omitted variable bias that is so frequently the cause of concern with observational studies at the firm level. This is a good method to use especially in the case of Pakistan since the country has a heterogeneous industrial structure and the business environment has a low level of institutionalization such that the unobserved firm characteristics can largely determine the productivity and export performance. Additionally, the data has the panel structure that allows the study to consider the time dynamics of the policy implementation and reversal. The zero-rating regime in Pakistan has also experienced several reforms throughout the analysis period, and the chosen empirical model could help to identify these changes. The macroeconomic shocks, exchange rate shocks and changes in economy-wide policies that will impact all firms at a time are also explained by time controls included in the model. In total, propensity score matching and fixed-effects panel estimation appear to be strong and methodologically adequate frameworks of policy evaluation in Pakistani setting. The identified empirical approach strikes a balance between rigor and feasibility, due to the constraints of data, and prevents the estimated effects of zero-rating policy to capture the true effects of the policy and not spurious correlations that could be caused by the self-selection of firms or unobserved heterogeneity.

## Chapter 6

### Results and Discussions

#### 6.1 Introduction

In this chapter, we have to analysis influences of zero-rating tax policy on the textiles company export share sales, local sales share and the growth rate of total factor productivity. These includes Descriptive statistic, mean difference test, the marginal effect of important input cost, and fixed effect model to assess the policy effectiveness. The result statistically significance and economic meaning of the results which offering more valuable insight to how the zero-rating policy affected the firm behavior and performance of Pakistan textiles Sectors. The chapter well organized into different section i.e. Section 6.2 discussed the descriptive statistic, mean difference analysis to explore the nature pattern of the data. Section 6.3 discuss marginal effect of the input cost on the firm output; it also discusses a details regression result of the estimation about the policy impact. The section 6.4 discussed the details result and their implication of policy design and their competitiveness of textile firms.

#### 6.2 Descriptive Statistics and Mean Analysis

The mean difference analysis and summary statistic examined the nature pattern of firm performance across different condition of policies and performance across different policy conditions. The two sample t test are applied to analyzed the significance of the mean difference. The data of 1727 observation are collected where total number of firms are 116 textiles and time period from 2009-2023.

**Table 6.1 Mean Comparison**

<b>Mean Difference when only Policy active</b>			
<b>Variables</b>	<b>Beneficiary</b>	<b>Non-beneficiary</b>	<b>Mean Difference</b>
<b>Export Share</b>	0.381	0.361	0.020
<b>Local Sales</b>	0.736*	0.688*	0.048*
<b>TFP Growth</b>	-0.110	-0.312	0.202

*Note: \* Significance levels: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$*

### **Export Sales Share:**

When the policy is implemented, the findings indicate that beneficiary firms have a marginally higher export ratio (0.381) than non-beneficiaries (0.361), resulting in a mean difference of 0.020, or approximately 2 percentage points. Yet, such a gap is small and statistically insignificant, suggesting that the policy per se does not have a strong impact on firms' export orientation.

Although the policy was intended to incentivize export growth by easing tax burdens, this modest difference may indicate that factors beyond tax incentives, such as global demand conditions, production capacity, or firm-specific capabilities, play critical roles in shaping export performance.

### **Local Sales Share:**

By contrast, local sales provide the strongest indication, with beneficiaries having a reading of 0.736 versus 0.688 for non-beneficiaries; a mean difference of 0.048, or a 7% relative increase. This is just barely significant, and it indicates that the policy can have a greater impact on encouraging local market activity than in terms of supporting exports. The growth might be the result of demand-side effects, decreased costs, or competitive advantage in domestic markets. Interestingly, beneficiary firms have a significantly higher local sales share—73.6% compared to 68.8% for non-beneficiaries, with the difference being statistically significant at the 1% level. This pattern runs counter to the expected effect of export-oriented tax relief policies, which typically encourage firms to reallocate production toward international markets. The persistence of a high local sales share among beneficiaries suggests either that firms maintain a dual market strategy

servicing both local and export sectors or that there may be spillovers of the policy benefits to domestic sales activities. This incomplete market segmentation is consistent with concerns highlighted in the trade literature, where zero-rating policies occasionally blur the boundaries between export and domestic sales, potentially diluting intended export incentives. Moreover, Pakistan's heterogeneous textile industry might face domestic demand strengths or supply chain linkages that encourage firms to sustain strong local market presence despite export incentives.

### **Total Factor Productivity (TFP) Growth:**

For total factor productivity (TFP) growth, the average difference of 0.202 indicates that beneficiaries recorded a lower decline compared to non-beneficiaries. However, the estimate is extremely uncertain and statistically insignificant, indicating the challenge of picking up productivity growth in the short term or measurement noise. As a whole, the findings indicate that, in a policy-only case, the most significant effect is on increasing local sales, with small impact on export performance or productivity over the observed period. Regarding productivity growth, beneficiary firms record an average TFP growth of -11.0%, which, while negative, is considerably less severe than the -31.2% observed for non-beneficiary firms. Negative TFP growth rates across both groups point to broader sectoral challenges including energy shortages, outdated technology, and competitive pressures—that likely restrict firm-level efficiency improvements. The observed pattern aligns with prior research indicating that while fiscal incentives may alleviate some cost constraints, sustained productivity gains require complementary investments in modernization, skills development, and infrastructure, areas where Pakistan's textile sector continues to face shortcomings.

### **6.3 Regression Analysis:**

This section presents econometric evidence of how the change in input costs alters raw materials and energy affects firm-level performance, taking into account beneficiary status heterogeneity. The text presents coordinated statistical and economic explanations, placing findings in policy and literature perspective.

### 6.3.1 Empirical Result of Zero-rating policy on Local sales

Table 6-2 Impact of zero-rating policy on local sales

Variables	Local-sales	
	Model 1	Model 2
Beneficiary	0.113* (0.061)	0.184* (0.062)
Log of Raw Material	0.438*** (0.0192)	0.439*** (0.0188)
Int. Beneficiary Raw Material	0.00453* (0.0024)	
Log of Energy Cost	0.118*** (0.0130)	0.118*** (0.0132)
Int. Beneficiary Energy Cost		-0.000677 (0.00964)
Log of Age	0.681** (0.290)	0.682** (0.290)
Equity Ratio	-0.0383* (0.0196)	-0.0384* (0.0196)
Log of Capital Labor Ratio	0.0167 (0.0238)	0.0163 (0.0238)
Exporting Status	-0.0380 (0.365)	-0.0385 (0.365)
Constant	3.911*** (1.093)	3.897*** (1.092)
Firm Fixed Effects	Yes	Yes
Year Dummies	Yes	Yes
Observations	1,458	1,458
R-squared	0.419	0.419
Number of Firms	115	115

Note: Standard errors in parentheses. \* Significance levels: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

The findings in Table 6.3 show robust evidence that the zero-rating policy has a positive impact on local sales performance of beneficiary firms. In both Model 1 and Model 2, the beneficiary coefficient is positive and statistically significant at the 10% level, rising from 0.113 in Model 1 to 0.184 in Model 2. This increase when interaction terms are added indicates that, controlling for firm-level cost dynamics, the direct policy effect on local sales is strengthened even further. Economically, this means that policy assistance presumably through tax relief and lower compliance costs improves the ability of firms to compete in domestic markets and thereby increase their sales base. This finding is supported by that of Bernard and Jensen (1999), who

established that cost advantages triggered by policy can make firms more competitive in markets where price elasticity of demand is high.

Raw material cost log is positively and highly correlated with domestic sales in both specifications, at more than 0.43 and significant at the 1% level. It shows that increased input usage goes hand in hand with increased domestic market production, as per the production theory where output is a function increasing in input quantity (Cobb–Douglas model). The beneficiary-status-by-raw-material-cost interaction term in Model 1 is modest but positive and statistically significant at the 10% level, indicating that beneficiary firms might be using raw material inputs marginally more efficiently than non-beneficiary firms. This gain in efficiency could result from the cash relief that the zero-rating policy induces, facilitating more effortless procurement and potentially lowering supply outages.

Energy expenditure also has a positive and significant impact across both models, suggesting that increased energy spending is associated with higher levels of production and sales, probably since energy is an important complementary input in production. The interaction between beneficiary status and energy expenditure, however, is negative but statistically insignificant in Model 2, suggesting that the policy has no sizeable influence on the relationship between energy expenditure and sales. Firm age is also positively related to local sales, emphasizing the benefit of acquired expertise, customer contacts, and established distribution networks, a result consistent with Jovanovic's (1982) learning model of firm growth, which suggests that older firms, having survived initial market entry problems, will be more successful in selling.

The equity ratio has a modest but statistically significant negative coefficient, which implies that companies with greater equity as a ratio to total assets have lower local sales by a slight amount. This could mean that more leveraged companies adopt more aggressive expansion strategies in the marketplace, whereas equity-saturated companies are risk-averse. Capital–labor ratio and exporting status do not have any statistically significant effect, suggesting that sales performance in the domestic market is more closely associated with input volumes and firm maturity rather than with capital intensity or export orientation.

The R-squared measures (0.419 for both models) suggest that the variation in local sales explained by the variables included is approximately 41.9%, a good fit for panel data used in firm-level analysis. Firm fixed effects and year dummies accounted for unobserved time-invariant

heterogeneity and macroeconomic shocks, making the estimates more robust. Generally, such findings are consistent with supply-side policy theory, which argues that firms' tax liabilities and transaction costs are decreased in order to increase productive capacity and market competitiveness (Barro, 1990). The findings also resonate with evidence in the research of Melitz (2003) and Clerides et al. (1998), highlighting that policy incentives have the ability to enhance firm performance within domestic markets without considerably changing capital intensity or export status. In relation to the zero-rating policy, the beneficial impact seems to arise in large part from alleviating cost pressures and releasing resources for market development, rather than in a profound way changing firms' production technology.

### 6.3.1.1 Marginal Effects:

To further clarify the practical implications of the interaction terms, marginal effects are computed and presented in table 6.4 These show the effect of raw-material and energy cost on each outcome for both beneficiaries and non-beneficiaries.

Table 6-3 Marginal Effects of Raw material and Energy Cost by Beneficiary Status

	<b>Local Sales</b>	<b>Export</b>	<b>Productivity</b>
<b>• Raw Material</b>			
<b>Non-Beneficiary</b>	0.438*** (0.019)	0.150 (0.302)	0.360*** (0.027)
<b>Beneficiary</b>	0.462*** (0.023)	0.158 (0.344)	0.361*** (0.033)
<b>Difference</b>	0.024	0.008	0.001
<b>• Energy Cost</b>			
<b>Non-Beneficiary</b>	0.118*** (0.013)	-0.129 (0.204)	-0.010 (0.019)
<b>Beneficiary</b>	0.117*** (0.015)	-0.120 (0.229)	-0.011 (0.022)
<b>Difference</b>	-0.001	0.009	-0.001

The marginal effects presented in Table 6.4 indicate the impacts of raw material prices and energy prices on local sales, exports, and productivity for beneficiary and non-beneficiary firms within the zero-rating policy scenario.

**Raw Material Costs:** Both beneficiary and non-beneficiary firms have strong and statistically significant positive marginal effects of raw material prices with coefficients of 0.462 and 0.438, respectively, at the 1% level. This means that a 1% increase in raw material spending corresponds to approximately a 0.44–0.46% increase in domestic sales, consistent with production theory where output expansion is directly supported by raw material supply. The gap between beneficiary and non-beneficiary firms is insignificant and statistically not different from zero, suggesting that beneficiaries might utilize raw materials marginally better, but the size of this benefit is trivial. For export, the marginal impacts are weakly positive and statistically insignificant, implying that intensity in raw materials has a loose relationship with export performance whether or not the firm is policy beneficiary. For productivity, both groups have strong positive correlation and both significant at 1% significance levels, as expected, that sufficient raw material inputs enhance efficiency in production and output per unit of input. The marginal difference shows that the policy has no material effect on this connection.

**Energy Expenditure:** For local sales, both beneficiary and non-beneficiary firms have equal positive and significant influences, which implies that an increase of 1% in energy spending is related to an increase of around 0.12% in local sales. This evidence suggests the essential complementarity of energy as an input in production. But between the groups, the variation does not exist, which means that the policy does not alter the sensitivity of local sales to the cost of energy. In the case of exports, the marginal effects are both negative and statistically insignificant, implying that increased energy costs would slightly discourage export activity, perhaps because of rising production costs to the detriment of price competitiveness, although the effect is not strong. For productivity, the impact is extremely small and statistically insignificant for both groups, suggesting that there is no significant relationship between changes in energy costs and productivity growth over the sample period.

The findings suggest that raw material prices are an important driver of local sales and productivity, but the policy beneficiary status does not appreciably alter the strength of this relationship. Energy prices are important for local sales but are of limited consequence for exports or productivity, and

once more, the policy does not seem to change these impacts. These results are in line with the general literature (e.g., Melitz, 2003; Clerides et al., 1998) that highlights input intensity as a pivotal driver of firm performance, with policy impacts typically arising more as a result of reducing costs on major inputs than in changing marginal returns on such inputs. The absence of dramatic differences indicates that the zero-rating policy's immediate impact is more direct by lowering aggregate tax burden and enhancing liquidity—than fundamentally altering how inputs translate into outputs.

### 6.3.2 Regression Results for the log exports.

Table 6-4 Impact of Zero-Rating Policy on Exports

Variables	Export Model 1	Model 2
Beneficiary	-0.301 (0.529)	-0.0875 (0.400)
Log of Raw Material	0.360*** (0.0267)	0.362*** (0.0260)
Int. Beneficiary Raw Material	0.000374 (0.0269)	
Log of Energy Cost	-0.0149 (0.0190)	-0.0103 (0.0193)
Int. Beneficiary Energy Cost		-0.0197 (0.0150)
Log of Age	0.659 (0.473)	0.639 (0.473)
Equity Ratio	0.00325 (0.0259)	0.00199 (0.0259)
Log of Capital Labor Ratio	0.0638* (0.0333)	0.0614* (0.0331)
Log od REER	4.014 (6.414)	4.300 (6.412)
Constant	-12.86 (27.80)	-14.14 (27.80)
Firm Fixed Effects	Yes	Yes
Year Dummies	Yes	Yes
Observations	1,246	1,246
R-squared	0.222	0.223
Number of Firms	97	97

*Note: Standard errors in parentheses. \* Significance levels: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$*

The export performance results in this table show that the beneficiary status under zero-rating policy doesn't significantly affect the export activity of firms. The beneficiary coefficient in Model

1 is negative and still negative but smaller in size in Model 2 after controlling for the interaction terms. Both the coefficients are statistically insignificant, indicating that the policy does not have a direct impact on better export outcomes for benefit firms. This result concurs with the belief in Bernard and Jensen, (1999) and Melitz, (2003) that exporting into foreign markets usually entails more than mere cost relief (e.g., conforming to international quality standards, establishing foreign distribution networks, and overcoming information obstacles), which can be possibly not be catered to at once by an incentive that is purely domestic in nature like zero-rating.

The raw material cost log has a high and statistically significant positive correlation with exports in both specifications, which suggests that increased input use is matched with increased export sales. This agrees with production-based trade models (e.g., Melitz & Ottaviano, 2008) where increased input intensity facilitates greater scale of production, allowing firms to supply foreign demand. Yet, the cross-efficiency effect of beneficiary status with respect to raw material costs is trivial and statistically insignificant, which suggests that beneficiaries do not enjoy a further export benefit from the use of inputs over non-beneficiaries.

Energy expenses are negatively associated with exports in both specifications, yet the coefficients are negligible and statistically insignificant. This implies that rising energy prices could marginally reduce export competitiveness by raising the cost of production, but the impact is weak in this sample. Likewise, the interaction between beneficiary status and energy prices in Model 2 is negative and not statistically significant, implying that the policy does not significantly offset the negative impact of energy prices on exports.

Of the control variables, firm age is positively but statistically unrelated to exports, and this implies that experience by itself does not lead to success in exports. The equity ratio is likewise found to have no impact, showing that financial structure does not act as a major determinant of export participation here. The capital–labor ratio, on the other hand, is positive and statistically significant at the 10% level in both models, as is predicted in the literature (e.g., Tybout, 2003) that more capital-intensive plants will be better placed to compete internationally, perhaps because they can produce more or adopt technology.

The real effective exchange rate (REER) has a big positive coefficient but is very imprecise and statistically insignificant, which means that movements in the exchange rate did not have a definitive impact on export performance during the sample period. The 0.222 and 0.223 R-squared

values imply that the models account for approximately 22% of the variation in exports, which is what can be expected from firm-level export data in the presence of unobserved market-specific conditions.

In summary, the evidence indicates that although input intensity, especially raw materials, is a significant determinant of exports, the zero-rating policy is not substantially boosting export performance. This is consistent with earlier studies (e.g., Clerides et al., 1998; Bernard & Jensen, 2004) indicating that export competitiveness tends to necessitate focused trade facilitation policies, export financing, and quality upgrading initiatives in preference to merely across-the-board cost-cutting initiatives.

#### **6.3.2.1 Marginal effects of Exports:**

See table 5.4 For non-beneficiary firms, a 1% rise in raw material use is seen to raise export sales by 0.150%, though this effect is statistically insignificant with the rather large standard error. The beneficiary firms also have a like marginal effect of 0.158%, which is again not statistically significant. This suggests that the utilization of raw materials does not substantially impact exports in a different way by policy status, and the zero-rating intervention has no evident impact on the way raw material inputs get turned into export performance

Energy cost has a negative but statistically irrelevant marginal impact on export sales for both groups of firms. Non-beneficiaries see a -0.129% change, and beneficiaries -0.120%, neither significantly different from zero. This implies that changes in energy consumption do not significantly affect export sales, and beneficiary status under the zero-rating policy does not alter this connection.

### 6.3.3 Regression Result for Total Factor Productivity.

Table 6-5 Impact of Zero-Rating Policy on Productivity

Variables	Productivity	
	Model 1	Model 2
Beneficiary	2.438 (4.933)	5.045 (4.285)
Log of Raw Material	0.0500 (0.302)	0.0750 (0.299)
Int. Beneficiary Raw Material	0.108 (0.215)	
Log of Energy Cost	-0.0446 (0.200)	-0.0198 (0.204)
Int. Beneficiary Energy Cost		-0.101 (0.148)
Log of Age	3.974 (4.547)	3.951 (4.547)
Equity Ratio	-0.335 (0.309)	-0.343 (0.309)
Log of Capital Labor Ratio	1.220*** (0.369)	1.198*** (0.369)
Exporting Status	-1.733 (5.756)	-1.751 (5.755)
Local Sales Ratio	-0.0645 (0.407)	-0.0658 (0.407)
Constant	-21.07 (17.14)	-21.44 (17.14)
Firm Fixed Effects	Yes	Yes
Year Dummies	Yes	Yes
Observations	1,474	1,474
R-squared	0.030	0.030
Number of Firms	116	116

*Note: Standard errors in parentheses. \* Significance levels: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$*

The findings in Table 6.6 check the effect of the zero-rating policy on the productivity of firms, defined within a fixed effects model. In both Model 1 and Model 2, the Beneficiary status coefficient is positive, but statistically insignificant, which implies that being on the policy benefit has no strong quantifiable effect on productivity. This observation suggests that the policy can lower cost burdens but not necessarily deliver efficiency gains. This result are in line with the discussion by Tybout, (2003) and Syverson, (2011) that productivity increases tend to demand technological upgrading, managerial enhancements, or process innovations more than cost relief programs.

The raw material cost log appears with minor, positive, and insignificant impacts on productivity for both models, and the beneficiary firm interaction term is also not significant. This suggests that more material use alone does not necessarily make production more efficient if the input quality or production process does not change. Conversely, energy prices are negatively but insignificantly related to productivity, implying that whilst high energy prices may increase the cost of production, their effect on efficiency is negligible in the present study. The interaction term between energy prices and beneficiary status is also negative and insignificant, implying that the zero-rating measure does not adequately counteract any such energy-induced loss of productivity.

Among the control variables, firm age is positive but statistically insignificant, indicating that older firms are not necessarily more productive after controlling for unobserved firm-specific effects. Likewise, the equity ratio has a negative but insignificant coefficient, which means that financial leverage or equity structure is not a primary driver of productivity here.

A significant and strong result is that the capital–labor ratio is positive and statistically significant at the 1% level in both estimations, indicating that capital-intensive firms are more productive. This validates the capital-deepening hypothesis in growth theory (Solow, 1957) and accords with empirical work (e.g., Van Biesebroeck, 2005) which illustrates that the more-capital-inputting firms per worker can be more efficient as a result of mechanization, automation, and technology diffusion.

The exporting status coefficients are negative and insignificant, which at first glance could be counterintuitive but corroborate some findings in Bernard and Jensen, (1999) that in some developing or transitioning economies, firms can access export markets without being the most efficient sometimes because of policy incentives or sector-specific advantage as opposed to efficiency. There is no significant impact from the local sales ratio.

Overall, the evidence indicates that the zero-rating policy does not have any direct effect on productivity, which is statistically significant, and the most persistent efficiency gain driver in the sample is capital intensity. This is in accordance with the overall literature that fiscal or cost-reduction policies are not enough to increase productivity in isolation from complementary strategies like the adoption of technology, upgrading skills, and process innovation (Bloom, Sadun, & Van Reenen, 2016).

## **Result In the Context of Pakistan**

These empirical outcomes show that zero-rating tax policy does not have a very strong or statistically significant effect on the productivity of firms in the Pakistani textile industry. Although, zero-rating ensures that the indirect taxation level is decreased and the liquidity in the short run is enhanced, the lack of high productivity increase indicates that, the tax cut is not enough to create effectiveness.

There are a number of structural constraints that can explain the occurrence of this outcome in the Pakistani context. To start with, the cost of power and frequency of power breakdowns, as well as unpredictable supply of gas still hamper the efficient production of power especially to spinning and processing facilities. Second, a great number of textile companies use the outdated equipment and little technological modernization, so the decreased taxation expenditure is not always replaced by productivity-increasing investments. Third, ineffective monitoring systems enable companies to enjoy zero-rating without having to show any quantifiable efficiency or innovation effects.

Policymaking wise, the findings suggest that zero-rating is more of a cost-reduction tool than a productivity tool. The productivity impact of zero-rating is limited in the absence of complementary reforms, which include technology upgrading incentives, reforms in the energy sector, and performance-based conditionality.

The findings indicate that the effect of zero-rating on export sales is positive and significant, which proves that tax exemptions allow mitigating the impact of costs and enhancing the ability to compete around the prices in the global markets. This observation is in line with the export-driven textile system in Pakistan where companies are exposed to a slim margin and stiff competition with other regional exporters in Bangladesh, Vietnam and India.

In Pakistan, zero-rating reduces the liquidity limitations by decreasing the time spent in refunds and decreasing the working capital. This is especially in an environment where there is limited access to formal credit and interest rate is comparatively high. As a result, companies can also place export orders more easily and retain the foreign markets.

The benefits in exports, however, are more volume than value exports. The preponderance of the low value-added textile exports, including yarn, greige fabric, and undressed garments, restrains

the sustainability of the industry in the long term. In this way, even though zero-rating fosters continuity of exports, it does not radically change the status of Pakistan in the world textile value chains.

The findings indicate that zero-rating is linked to the fall in domestic sales share, meaning that beneficiary firms make production more export-oriented. Such an outcome is anticipated within the policy framework of Pakistan, where zero-rating is meant to encourage exports by reducing relative costs as compared to domestic sales which are still subject to standard sales tax.

This export bias comes in both ways. On the one hand, it helps in supporting foreign exchange earnings, which are very important in the balance of payments of Pakistan. However, it can also cause competition to be unfair in a domestic market where the non-exporting firms will be disadvantaged, and the firms will reorganize their sales just to gain tax incentives and not necessarily because of the efficiency of the markets.

Further, tax regulations make it more likely that companies will misreport and reclassify sales that these companies might misclassify sales as domestic to continue enjoying zero-rating benefits. This demonstrates issues of governance in the application of selective tax incentives in the tax administration system of Pakistan.

In as much as zero-rating enhances the performance of exports, the outcomes are of concern in the aspect of fiscal sustainability. Pakistan also experiences continuous deficits in revenues, and it is mainly dependent on indirect taxation. Zero-rating amounts to a foregone revenue that is a major tax expenditure, and its productivity results might not be justified by the results. The results indicate that the effectiveness of zero-rating is watered down by the administrative inefficiencies, poor audit capacity, and performance monitoring. Without strict requirements to eligibility and evaluation of outcomes, the zero-rating will turn into a lasting financial giveaway instead of a short-term competitiveness-boosting measure.

#### **6.3.3.1. Marginal effects of Productivity:**

Non-beneficiary companies have a strong marginal effect of 0.360% rise in productivity growth from a 1% increase in raw material consumption. Beneficiary companies have a very close significant effect of 0.361%. Such a strong similarity ensures that the zero-rating policy does not

have a strong influence on how raw material inputs figure in productivity growth. Irrespective of policy involvement, companies that consume higher raw materials realize greater productivity growth.

Energy cost has a negligible and statistically insignificant adverse marginal impact on productivity for both non-beneficiaries and beneficiaries. This indicates that energy use cannot meaningfully contribute to changes in productivity for either group, as is consistent with the result that zero-rating has no effect on this relationship.

#### **6.4 Discussion**

The aggregated evidence in Tables above present the total picture of the impact of raw material prices, energy prices, and the zero-rating policy on the performance of the firm, captured via local sales, export behavior, and productivity. The findings exhibit three significant trends: (i) the ubiquitous significance of raw material inputs in propelling exports and sales, (ii) energy prices playing a minor role, often insignificant, and (iii) zero-rating policy beneficiary status having no significant, direct impact on firm performance.

Throughout the marginal effects estimates, raw material use exhibits a strong and statistically significant positive relationship with local sales as well as productivity for both non-beneficiary and beneficiary firms, but its impact on exports is statistically not significant. This implies that while higher input use is associated with higher output in local markets and increased efficiency, it does not necessarily enhance export competitiveness. This aligns with Melitz, (2003) and Bernard & Jensen, (1999), who observe that export success more typically lies with product quality, innovation, and foreign market access than with increased input use. Coefficient differences between beneficiary and non-beneficiary firms are small, suggesting that the zero-rating policy has not significantly changed the raw material–performance nexus.

By comparison, energy costs have mixed results. While local sales are positively correlated with energy costs for both subgroups, they have a negative (although not significant) correlation with productivity and exports. This is consistent with the findings of Hasanov & Mikayilov, (2020), who postulate that increased energy costs tend to undermine competitiveness in energy-intensive sectors, especially those operating in export markets where price elasticity is high. Yet, the absence of significant differences between beneficiary and non-beneficiary firms once more points to the

fact that the policy intervention does not work to counteract possible energy-related drawbacks significantly.

Examining the export regression findings, raw material prices continue to be a robust positive determinant of exports with a steady coefficient value of 0.36, significant at 1%. This reaffirms that availability of materials is a key factor for export-based production. Yet, the beneficiary status and the interaction terms with raw materials and energy costs are statistically insignificant, highlighting that policy assistance does not have a direct effect in augmenting export performance above and beyond that which is otherwise generated by input availability. Energy costs, although negative in impact, are still insignificant indicating they are not an export decision constraint in this dataset. Interestingly, the capital–labor ratio is positive and significant in both specifications, suggesting that capital-intensive firms are more capable of competing in international markets, as capital-deepening theory (Solow, 1957) and evidence from Van Biesebroeck, (2005).

Lastly, the productivity models reveal no significant impact of beneficiary status, raw materials, or energy prices on productivity, except for the capital–labor ratio, which is positive and highly significant throughout. This indicates that increases in productivity are caused more by structural especially capital-intensive than cost-cutting short-term determinants through policies such as zero-rating. This concurs with Syverson, (2011), who views that there is a need for complementary factors such as technology adoption, management enhancements, and human capital skills for long-term productivity growth.

## Chapter 7

### Conclusion and Recommendation

#### 7.1 Conclusion:

This research aimed to assess the degree to which Pakistan's zero-rating policy, in the form of SRO 1125, has impacted the productivity and competitiveness of companies in the textile industry; a sector that constitutes the backbone of the export-oriented economy of the country. The analysis covered beneficiary and non-beneficiary companies for the period 2009–2023 on three prime dimensions: local sales share, export sales share, and total factor productivity. The evidence from the empirical data is mixed. The most evident and uniform effect of the zero-rating policy was in the local sales area. Beneficiary firms, on average, had a considerably higher domestic market share than non-beneficiaries, even when accounting for firm-specific characteristics and macroeconomic shocks. This indicates that the cost-reducing impact of the policy—through decreased sales tax on inputs allowed domestic firms to improve their competitive standing in the domestic market. Yet this result differs from the intended policy objective, as intended, which sought to direct production and market focus towards exports instead of consolidating domestic sales. Conversely, export performance did not exhibit a statistically significant improvement between beneficiary and non-beneficiary firms. Although availability and utilization of raw material translated into a robust driver of exports for the sample, beneficiary status under zero-rating did not significantly qualitatively transform this relationship. This means the structural and market issues confronting Pakistan's textile exports, including non-international branding, limited satisfaction of foreign quality standards, and restrictions to access markets, cannot be overcome by tax relief alone. Without complementary interventions aimed directly at export capabilities, the zero-rating policy cannot be expected to produce the desired boost in global competitiveness. There is no statistically significant technology productivity impact on beneficiary firms that were found by the analysis of outcomes. While the policy lowered production costs, there was no conclusive evidence that such savings were reinvested in a manner that improved efficiency, e.g., technological upgrading, process innovation, or skill improvement. Capital intensity (capital–labor ratio), on the contrary, proved to be the most persistent and powerful catalyst of productivity in the sector, emphasizing that sustainable gains in efficiency rely on more profound structural investments than on budgetary relief. While zero-rating has the benefit of easing liquidity

constraints and input cost burdens, its potential to boost export competitiveness and productivity is limited when it is introduced in standalone fashion, without complementary support measures. Furthermore, the actuality of benefit shifting towards the domestic market gives rise to issues regarding the targeting and monitoring of the policy. If the zero-rating policy is to achieve its avowed goals, it needs to be integrated within a wider industrial and trade policy strategy that brings together fiscal incentives and sector-specific interventions for technological upgradation, quality certification, export financing, and integration in international markets.

## **7.2 Recommendation**

- Strengthened monitoring and enforcement to ensure that cost savings from zero-rating are mostly channel towards export-oriented production instead of spuriously increasing domestic sales.
- Combine the zero-rating policy with subsidized loans, grants, or tax credits on modern machinery, automation, and digitalization to translate cost relief into quantifiable gains in productivity.
- Assist companies in complying with global quality standards, getting certified, and attending international trade fairs to neutralize non-price trade barriers.
- Streamline administrative procedures, expedite refunds, and provide transparency in verification to maintain the liquidity advantage of the policy.
- Launch selective schemes for energy audits, efficiency improvements, and the incorporation of renewable energy to avoid the competitiveness losses due to increasing costs of energy in the textile industry.
- Offer industry-specific export facilitation and technical support to SMEs, possibly unable to utilize the zero-rating policy fully like large companies.
- Combine zero-rating with infrastructure investment, skills programs, and trade facilitation to make sectoral competitiveness permanent.
- Implement periodic review of the zero-rating policy in order to modify its design from findings of effectiveness in meeting export and productivity goals.

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