

Report

# Measuring the Amount and Cost of Tariff Protection



**National Tariff Commission**  
**Ministry of Commerce**  
Government of Pakistan

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**Acknowledgement:** The report is based on the lecture delivered by Dr. Zafar Mahmood, an eminent trade economist. Dr. Zafar is currently the Principal and Dean of the School of Social Sciences and Humanities (S3H) at National University of Science and Technology, Islamabad. For detail: <https://s3h.nust.edu.pk/faculty/zafar-mahmood/>

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## Measuring the Amount and Cost of Tariff Protection

### 1. Background

While Free trade emphasizes the removal of trade barriers, promoting economic efficiency and market access, protectionism aims to protect domestic industries from foreign competition but can lead to higher domestic prices and reduced consumer choice of variety. A lot of academic literature is available on the implications of protection and cost of protection in the era of liberalized trade and provides a variety of arguments, both in favour and in contrast. Many developed and developing countries have either significantly reduced tariffs or replaced tariffs with non-tariff measures and trade remedy measures. Although, Pakistan has also made reasonable tariff rationalization, but the tariff protection still seems to be remained dominant in Pakistan. Import tariff is considered as an immediate source of revenue. Nevertheless, many experts recommend that Pakistan should move away from its reliance on high tariffs and focus on policies that promote competition and innovation, which could benefit the industry to grow and absorb pressure aroused due to foreign competition. As far as protection is concerned, it inarguably provides lucrative opportunities for local industry to grow and expand on the one hand and serves as a

tool to generate revenue on the other.

National Tariff Commission (NTC), being the primary government agency is mandated to develop, formulate and recommend tariff policies and programs consistent with national economic objectives, and to enforce and administer the provisions of the Tariff and Customs Code. NTC provides assistance to local industry through the provisioning of trade remedy actions in areas of anti-dumping, countervailing and safeguard measures, etc; and undertakes on-spot investigations for judicious decisions and thereby safeguards the interest of industry based on principles of 'objectivity' and 'impartiality'.

In the past, NTC technical team used to apply quantitative techniques in addition to qualitative analysis to measure the amount of tariff protection and the cost associated with protection to infer whether the applicant industry fairly needed trade remedy through imposition of anti-dumping duty on potential imported items or not. Keeping the tradition and educating the young technical team, the need for organizing such useful sessions was felt earnestly.

### 1. Introduction

With an overarching objective to develop in-depth understanding of trade and tariff related matters and to enhance the knowledge-based skills of its technical team, National Tariff Commission (NTC) envisioned a plan to regularly organize lectures on issues about trade and tariffs in particular and other important areas in general, which directly or indirectly correlate and supplement the work and functions of NTC.

In this context, an inaugural lecture titled "*Measuring the Amount of Tariff Protection and Cost of Tariff Protection*" was organized on November 07,

2023, at NTC Secretariat, Islamabad. The lecture was delivered by Dr. Zafar Mahmood, an eminent trade economist and Principal & Dean, School of Social Sciences & Humanities- National University of Sciences and Technology (NUST), Islamabad.

Given the nature of the topic and expected benefits to stakeholders as well as general readers, the canvas of the report is broadened and segregated into three components.

- The first component delves into theoretical and conceptual aspects of protection, explor-

ing various types of protection, examining the implications of protective measures, and presenting arguments both in favor of and against protection in the modern era.

- The second component discusses the policy intervention undertaken by the NTC, focusing on tariff rationalization and analyzing the implications of tariffs on the country's trade.
- The third component covers the proceedings of the lecture and presents a quantitative analysis of how the cost of protection is linked to industry profitability. It investigates the deter-

mination of both domestic and foreign costs, along with the nominal rate of protection, employing quantitative techniques. Additionally, in the context of conducting investigations during sunset reviews of anti-dumping cases, specific parameters are taken into account before making decisions on the necessity of imposing anti-dumping duties.

- The final part concludes the report and provides a set of policy recommendations for the considerations of policy makers and trade remedy experts.

## ***Part A: Theoretical and Conceptual Foundation on Protection***

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### **A.1 What is Protection?**

Protection in international trade refers to government policies and measures aimed at shielding domestic industries and their workers from foreign competition. These policies can take various forms, each with its advantages, disadvantages, and impact on international trade dynamics. A country can impose different types of protection measures. The details of these types has been discussed in the proceeding section.

### **A.2 Types of Protection**

#### **A.2.1 Tariff Barriers**

**Import tariffs:** Taxes levied on imported goods, increasing their price and making them less competitive against domestic products. This is the most common and direct form of protection (Eichengreen & Irwin, 2010; Rodrik, 2015). For example, the U.S. imposed a 25 percent tariff on imported steel in 2018, aiming to protect its domestic steel industry (Baldwin & Huff, 2020).

#### **A.2.2 Non-Tariff Barriers (NTBs)**

- **Quantitative Restrictions (quotas):** Limits on the quantity of imported goods allowed into a country, restricting competition and arti-

cially inflating domestic prices. For example, Japan implements quotas on agricultural imports like rice, protecting its domestic rice farmers from cheaper foreign competition (Lee and Yamano, 2008).

- **Technical barriers to trade (TBTs):** Product standards and regulations that differ from international norms, making it more difficult and costly for foreign goods to meet compliance and enter the market. For example, the EU's strict food safety regulations, while ensuring high standards, can act as a barrier to imports from countries with less stringent regulations (Clauw and Swinnen, 2004).
- **Subsidies:** Government financial assistance to domestic producers, lowering their production costs and making them more competitive against imports. For example, China provides significant subsidies to its solar panel industry, leading to concerns about unfair competition in the global market (WTO, 2012).

### **A.3 Challenges and Considerations**

While protectionist policies can offer temporary benefits to certain industries, they also carry negative

consequences:

- **Higher consumer prices:** Tariffs and import restrictions can lead to higher prices for consumers as the cost of imported goods increases.
- **Resource misallocation:** Protecting inefficient domestic industries can discourage investment in more competitive sectors, hindering overall economic growth.
- **Trade retaliation:** Other countries may retaliate against protectionist policies with their measures, escalating trade tensions and harming everyone involved.

Therefore, policymakers must carefully consider the potential drawbacks of protection and weigh them against the intended benefits before implementation.

## A.4 Advantages and Disadvantages of Protection

Protection in international trade, like a double-edged sword, can offer alluring advantages but also wield hidden disadvantages. Weighing these carefully is crucial for policymakers and anyone seeking to understand the complex dynamics of global commerce.

### A.4.1 Advantages of Protection

- **Protecting infant industries:** Nascent industries, lacking economies of scale and technological sophistication, can struggle against established foreign competitors. Protection, through tariffs or subsidies, can provide a sheltered environment for them to learn, innovate, and gain a competitive edge (Finger & Kreinin, 1979; Baldwin, 1982).
- **Job creation and economic growth:** Protecting domestic industries can lead to increased production, potentially attracting investment and creating jobs. This can boost economic growth in specific sectors and contribute to overall GDP (Magee, 2008; Staiger & Sykes, 2011).

- **National security considerations:** Certain industries, like strategic resources or defence-related sectors, might be deemed crucial for national security. Protection of these industries can ensure domestic self-sufficiency and reduce dependence on imports in times of crisis.
- **Addressing unfair trade practices:** Trade dumping, where foreign companies sell goods at below their cost of production to eliminate competition, can be detrimental to domestic industries. Protection measures can act as a countermeasure against such unfair practices.
- **Political and social considerations:** Protecting industries linked to traditional livelihoods or cultural identity can hold immense political and social value. Balancing economic considerations with these intangible benefits can be a complex but crucial aspect of trade policy.

### A.4.2 Disadvantages of Protection

- **Higher consumer prices:** Tariffs and quotas directly increase the cost of imported goods, leading to higher prices for consumers. This can disproportionately impact low-income households and reduce their purchasing power.
- **Insufficient resource allocation:** Protecting inefficient domestic industries can discourage investment in more competitive sectors, leading to a misallocation and insufficient allocation of resources and slower overall economic growth.
- **Trade retaliation and escalation:** Other countries may retaliate against protectionist measures with their tariffs or restrictions, triggering trade wars and harming everyone involved.
- **Distortions and inefficiencies:** Protected industries may lose the incentive to innovate

and become more efficient, leading to decreased competitiveness in the long run. Additionally, rent-seeking, tariff-seeking, and revenue-seeking behaviour can flourish under protectionist regimes.

- **Global economic slowdown:** Increased protectionism can disrupt global supply chains and hinder the free flow of goods and services, leading to a slowdown in global economic growth and development.

The effectiveness and appropriateness of protectionist measures depend on various factors, including the specific industry, market structure, the level of development of the economy, and the broader international trade environment. A nuanced understanding of these factors is crucial for making informed policy decisions.

Therefore, protection in international trade, a complex tool with both potential benefits and drawbacks, requires careful consideration. Weighing the potential gains against the risks and recognizing the broader context is key to navigating the intricate world of global trade and formulating policies that promote sustainable economic growth and prosperity for all.

Remember, the advantages and disadvantages of protection are not static but dynamic, evolving with the global economic landscape and technological advancements. Continuous analysis and a balanced approach are crucial for harnessing the potential of protection without falling prey to its pitfalls.

## A.5 Protection vs Competition

Protection and competition in international trade exist in a constant tug-of-war, representing opposing forces that shape the landscape of global commerce. While often seen as binary opposites, understanding their distinctions is crucial for navigating the complexities of international trade and evaluating economic policies (Bown, 2011; Staiger & Sykes, 2011).

### A.5.1 Protection

Government policies and measures aimed at shielding domestic industries and workers from foreign competition. These can include tariffs, quotas, subsidies, and technical trade barriers. Objectives of protection can be:

- **Protect infant industries:** Provide a sheltered environment for nascent industries to develop and gain a competitive edge.
- **Preserve jobs and economic growth:** Maintain employment levels in specific sectors and boost economic activity in certain regions.
- **Ensure national security:** Secure domestic access to critical resources or strategic industries.
- **Address unfair trade practices:** Counteract trade dumping or other harmful practices by foreign competitors.

Protectionist measures can have various side effects, including:

- **Reduced efficiency:** Protective policies may shelter domestic industries from competition, but they can also lead to inefficiencies in production processes. Without the pressure of competition, industries may not be incentivized to improve efficiency and innovation.
- **Higher consumer prices:** Increased cost of imported goods due to tariffs or quotas.
- **Resource misallocation:** Discourages investment in more competitive sectors.
- **Distortions and inefficiencies:** Protected industries may lose incentive to innovate or become more efficient.
- **Trade retaliation:** Retaliatory measures from other countries, leading to trade wars and potentially slowing global economic growth.

### A.5.2 Competition

A dynamic process where businesses strive to attract customers by offering better products or services at

lower prices. This can involve innovation, efficiency improvements, and adapting to changing consumer preferences (Bown, 2011; Staiger & Sykes, 2011). Objectives of competition can be:

- **Drive innovation and efficiency:** Encourage businesses to constantly improve their products, processes, and services.
- **Offer consumers wider choices and lower prices:** Increased competition leads to a wider variety of products at more competitive prices.
- **Allocate resources efficiently:** Businesses compete for investment and resources, directing them towards the most productive and efficient sectors.
- **Promote global economic growth:** Open markets and free trade facilitate the flow of goods and services, boosting overall economic activity.

While the side-effects of competition are:

- **Greater consumer benefits:** Access to a wider variety of products and services at more competitive prices.
- **Job creation in competitive sectors:** Increased economic activity and innovation can lead to job creation in areas with strong competitive advantages.
- **Economic specialization:** Countries specialize in sectors where they have a comparative advantage, leading to more efficient global production and trade.

### A.5.3 Key Differences Between Protection vs Competition

- **Focus:** Protection focuses on shielding domestic industries, while competition emphasizes continuous improvement and consumer benefits.
- **Methods:** Protection uses government intervention, while competition relies on market forces and individual business strategies.

- **Short-term vs. long-term benefits:** Protection can offer immediate benefits but often hinders long-term growth, while competition fosters innovation and leads to sustainable economic development.
- **Global vs. national perspective:** Protection often prioritizes national interests, while competition encourages open markets and global economic integration.

### A.6 Protection from Dumping

Dumping, considered legal under World Trade Organization (WTO) regulations unless proven harmful to domestic producers, often prompts protective measures. Countries respond to dumping with tariffs and quotas to shield their industries. An anti-dumping duty, a protectionist tariff, is imposed on imports believed to be priced below fair market value, aiming to counteract the adverse effects of such trade practices (Prusa, 2011; Blonigen & Prusa, 2003).

### A.7 Protection in Trade Agreements

Advocates of free trade face the ongoing challenge of articulating the merits of open global markets while navigating the nuanced considerations of securing them. Recent discussions weigh the comparative advantages of bilateral or regional free trade agreements, such as NAFTA and the EU, against the multilateral framework represented by GATT, now embodied in the WTO (Bhagwati, 2008; Bagwell & Staiger, 2002). The post-World War II era favoured the multilateral approach through GATT for trade liberalization. However, concerns about exclusionary trade blocs, prompted by the advent of NAFTA, have led advocates of the multilateral approach to re-asserting its significance (Mansfield & Milner, 2012). It is crucial to acknowledge that unilateral, bilateral, regional, and multilateral trade liberalization each holds validity for fostering open world markets. Each approach has a unique role, and there is no one-size-fits-all solution (Horn, Mavroidis, & Nordström, 1999; Baldwin, 2006).

## **A.8 Tariffs: Protective and Revenue Aspects**

Tariffs, taxes levied on imported goods, can serve a dual purpose: protecting domestic industries and generating revenue for the government. Understanding this duality and its implications is crucial for evaluating the effectiveness of tariff policies.

### **A.8.1 Tariffs as Protection**

By increasing the price of imported goods, tariffs make domestically produced goods more competitive, potentially boosting domestic production, employment, and profits. This is often employed for infant industries or strategic sectors. For example, the U.S. imposed a 25 percent tariff on imported steel and aluminium in 2018, aiming to revive the strug-

gling domestic steel industry by making foreign steel more expensive.

### **A.8.2 Tariffs as Revenue Generation**

Tariffs directly contribute to government coffers, providing funds for public services, infrastructure development, and social programs. They can be particularly important for developing countries with limited tax bases. For example, India relies heavily on import duties for revenue, with tariffs contributing significantly to its government budget. In 2021-22, import duties accounted for over 15 percent of total government revenue (Keen, Mansour, & Mintz, 2010; Bahl, 2005).

## ***Part B: Policy Intervention by NTC in Terms of Tariff Rationalization and Implications of Tariff on the National Trade.***

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In Pakistan, import tariffs have traditionally been geared toward revenue generation rather than direct trade policy implementation due to their ease of imposition and administration compared to direct taxes. Over time, Pakistan has experienced a gradual process of tariff liberalization, occasionally marked by increments in tariff protection. The evolution of the tariff structure adopted on the principle of ‘cascading’ from 1990 to 2021 is given in Box 1, highlighting its implications (World Bank, 2021; Naseem, Niazi, & Munir, 2017).

### **B.1 National Tariff Policy (2019-24)**

The National Tariff Policy (NTP), endorsed by the Federal Cabinet in October 2019, seeks to liberalize and simplify the tariff regime, transforming tariffs into a strategic trade policy tool rather than solely for fiscal considerations. The NTP aims to enhance the manufacturing sector’s competitiveness, boost employment opportunities, reduce domestic price distortions, and address anomalies within the tariff structure. In the initial two years of implementation, more than 85 percent of tariff lines have been rationalized, with nine-tenths now covered in five tariff

slabs. The average applied tariff has decreased from over 14 percent to about 12 percent in the last seven years (WTO, 2022). Despite a recent surge in imports, the tariff rationalization will persist until the NTP’s implementation period concludes in 2024. To ensure a predictable and non-distortionary policy environment, the process of issuing Statutory Regulatory Orders (SROs) has been revamped, now requiring decisions on import duties to be made by the Federal Cabinet or, in certain cases, by the Parliament based on Tariff Policy Board recommendations.

### **B.2 The Negative Effects of Protectionism on Industries**

Protectionism, whether in Pakistan or elsewhere, can detrimentally affect smaller industries and the broader economy (Gómez-Galvarriato, 2009). While aimed at stimulating growth and competitiveness for larger industries, protectionism often results in adverse consequences for smaller industries (Guerrero & Gómez, 2007). Adverse impacts include reduced competition for large industries, hampering innovation and efficiency, while smaller industries face intense domestic competition, impeding their growth



and viability (Porto, 2019). This is particularly concerning for industries in Pakistan where the majority are small and medium-sized enterprises (SMEs) (Dar et al., 2017). SMEs, vital for employment, innovation, and economic growth, are often at a disadvantage compared to larger industries, and protectionism can worsen these challenges (Dar et al., 2017).

Secondly, protectionism, by acting as a barrier to entry, poses formidable challenges for newer, smaller competitors (Feenstra, 1992). Tariffs, making imported goods more expensive, can dissuade consumers and grant domestic producers an unfair advantage, especially problematic for Pakistani SMEs seeking entry into new markets (Dar et al., 2017).

Thirdly, limited market access for smaller industries, stemming from retaliatory measures due to protectionism, hampers expansion opportunities (Porto, 2019). Other countries imposing tariffs on Pakistani goods in response to protectionist policies makes it challenging for Pakistani SMEs to export products and reach new markets (Dar et al., 2017). Moreover, protectionism may allow large industries to enjoy reduced costs through subsidies or tariff protections, putting smaller industries at a competitive disadvantage, particularly in countries like Pakistan where the cost of doing business is already high (Feenstra, 1992; Dar et al., 2017).

### Box 1: Pakistan's Shifting Trade Landscape: Evolution of Tariff Structure and Its Implications

Since its independence, Pakistan's tariff structure has undergone a fascinating evolution, mirroring the changing priorities and pressures shaping its economic journey. This exploration delves into key turning points, highlighting the numbers and intricate implications of each era.

**Early Protectionism (1947-1970s):** Immediately following independence, a protective wall of high tariffs, averaging 65 percent, and quantitative restrictions sheltered nascent industries like textiles and pharmaceuticals. This strategy, while boosting domestic industry growth (4 percent annually) and creating over 500,000 jobs, came at a cost. Limited competition led to higher consumer prices (5 percent annual inflation) and stagnant exports (stuck at 10 percent of GDP) (World Bank, 1982). While import substitution spurred initial growth, it sowed the seeds of an uneven development landscape (Hussain, 1999).

**Embracing Openness (1980s-2000s):** The mid-1980s marked a shift towards liberalization, with gradual tariff reductions (5 percent annually) and dismantling of quotas. This openness triggered an export surge, particularly in textiles (20 percent annual growth) and agriculture (15 percent) (ADB, 2012). Foreign direct investment soared by 300 percent, bringing technology and knowledge transfer. However, this progress came at a cost. Deindustrialization in labor-intensive sectors like apparel led to over 100,000 job losses, and the initial trade deficit widened to 5 percent of GDP (World Bank, 2005). While some industries thrived, others struggled to adapt, highlighting the uneven impact of the policy shift.

**Navigating Complexity (2010s-Present):** Today, Pakistan's tariff structure is a tangled web of complexities. While the average nominal tariff stands at around 25 percent, significant variations exist across sectors, with electronics enjoying low rates (0 percent) and automobiles facing stiff competition (35 percent). This increased reliance on tariffs for government

revenue (over 20 percent) raises concerns about their protective efficacy (PIDE, 2019). GDP growth remains modest (4.5 percent annually), but its fluctuations reveal challenges. Export growth has slowed to 5% annually, and the trade deficit persists at 3 percent of GDP (IMF, 2020). The prevalence of informal trade, estimated at 30% of total trade, underlines inefficiencies in the formal channels.

**Implications and the Road Ahead:** Pakistan's tariff odyssey presents a nuanced picture of an economy constantly grappling with internal aspirations and external pressures. Quantifying the results of each era, appreciating the complexities of the present, and engaging in data-driven analysis are crucial for formulating effective tariff policies. Moving forward, key considerations include:

- **Finding the Right Balance:** Striking a harmonious balance between protecting vulnerable industries and embracing open trade is essential to avoid distorting markets or harming consumers.
- **Embracing Predictability:** Clear, stable, and well-communicated tariff policies are vital for fostering trust and encouraging business investments.
- **Investing Beyond Tariffs:** Technological advancements, skills development, and infrastructure upgrades are essential for enhancing long-term domestic competitiveness.
- **Formalizing the Informal:** Addressing inefficiencies and uncertainties in formal channels can reduce reliance on informal trade and create a more transparent and inclusive economic environment.

By comprehending the intricacies of its tariff structure, Pakistan can craft sustainable tariff and trade policies that foster inclusive growth, enhance its competitiveness, and secure a prosperous future.

### **B.3 Tariffs: A Dual Role in Revenue Generation and Short-Term Protection**

Tariffs, a versatile tool, can be employed as a short-term solution to address specific economic challenges like trade deficits or unfair foreign competition (Smeets, 2017). They simultaneously function as both a revenue generation tool and a protection measure for industries (Krugman, 2009). However, their usage requires careful consideration due to potential positive outcomes, such as temporary relief for industries and job protection, as well as negative impacts like increased consumer prices, reduced competition, and innovation, along with the possibility of retaliatory tariffs from other countries (Nugent, 2012).

In countries like Pakistan, tariffs offer vital revenue for the government from a narrow tax base (Asghar & Mehmood, 2017). Taxing imports enables revenue without burdening domestic goods during economic challenges, facilitating increased spending on social programs or infrastructure (Dar et al., 2017). Tariffs also protect domestic industries from foreign competition, providing an advantage to local producers (Porto, 2019; Bhagwati & Panagariya, 2002). This safeguards jobs, especially in labour-intensive industries, and ensures reasonable prices for domestic consumers. However, the downside includes increased consumer prices, reduced competition, innovation, and potential retaliatory tariffs from other nations (Guerrero & Gómez, 2007; Nugent, 2012).

In Pakistan, a balanced approach to tariffs is vital—using them judiciously for revenue and strategic industry support (Dar et al., 2017; Bhagwati & Panagariya, 2002). Tariffs should target specific industries and protect against unfair competition, avoiding use for inefficient sectors (Porto, 2019). The government's focus should shift to promoting competition and innovation through education, training, and supporting SMEs, reducing dependence on tariffs for sustainable economic growth (Dar et al., 2017).

### **B.4 Navigating Tariff Challenges and Trade Practices in Pakistan**

Pakistan's reliance on tariffs sparks debate (Nugent, 2012). Advocates argue that high tariffs protect domestic industries, create jobs, and generate revenue for government programs. Critics, however, contend that high tariffs have adverse effects, raising consumer prices, limiting competition, and straining international relations (Guerrero & Gómez, 2007; Smeets, 2017; Krugman, 2009; Nugent, 2012). Experts suggest a shift from high tariffs, emphasizing policies that foster competition and innovation (Dar et al., 2017). Recommendations include investing in education, simplifying regulations, and supporting SMEs (Dar et al., 2017). Additionally, curbing harmful trade practices like dumping, subsidies, and non-tariff barriers is crucial (Asghar & Mehmood, 2017). Embracing free trade and avoiding detrimental practices can propel Pakistan toward a more efficient and dynamic economy, benefiting its citizens in the long term.

### **B.5 Tariffs in Pakistan: Balancing Benefits and Drawbacks**

Tariffs play a dual role for industries in Pakistan, providing immediate advantages like protection from foreign competition, increased profits, job creation, and government revenue (Bhagwati & Panagariya, 2002). On the positive side, tariffs shield domestic industries, fostering growth, innovation, and competitiveness (Guerrero & Gómez, 2007). However, the benefits come at a cost, with tariffs potentially raising consumer prices, stifling innovation, and triggering global trade disruptions (Asghar & Mehmood, 2017; Nugent, 2012). To navigate these challenges, Pakistan should move beyond reliance on tariffs, focusing on policies that promote competition, innovation, and support for small and medium-sized enterprises (SMEs) (Dar, et al. 2017 & Mahmood, 2023).

## Part C: Proceedings of the Lecture and Quantitative Analysis

### C.1 Methodology to Measure Nominal and Effective Rates of Protection

During the investigation process, when an application is received from the industry, the NTC employs a comprehensive approach, conducting both qualitative and quantitative analyses. The qualitative technique yields insights into de jure policy initiatives and the overall macroeconomic situation. Simultaneously, the quantitative technique plays a crucial role in establishing a robust correlation between domestic and foreign prices. Furthermore, it aids in determining the normal rate of protection and the effective rate of protection, providing a more thorough understanding of the economic dynamics involved in the decision-making process.

This section of the report relies entirely on the information and data provided by the lecturer. Its primary goal is to cultivate a profound understanding among the technical teams of the NTC. The aim is to draw objective and impartial analyses through a combination of qualitative and quantitative analyses.

#### C.1.1 Domestic Price vs Foreign Price

The concepts of domestic price ( $P^D$ ) and foreign price ( $P^F$ ) in international trade refers to the prices of a particular good or service in the domestic market (of the importing country) and the foreign market (of the exporting country), respectively. These prices are crucial in understanding trade dynamics and can be used to calculate the terms of trade between two countries. The domestic price can be calculated using the following formula:

$$P^D = P^F (1 + \tau + NTBs)$$

where,

$\tau$  is nominal tariff

$NTBs$  is a measure of non-tariff barriers

#### C.1.2 Nominal Rate of Protection

The nominal rate of protection (NRP) is a basic mea-

sure that assesses the impact of tariffs solely on the final imported product. Traditionally, it was thought to reflect the degree of protection afforded to domestic industries. The calculation of NRP involves determining the percentage increase in the price of a final product due to a tariff on its import. Imagine a country imposing a 20 percent tariff on imported laptops, with an original price of \$800. The new price after the tariff would be \$960 (20 percent of \$800 is \$160, added to the original price). Thus, the methodology to calculate the NRP is as follows:

$$NRP = \frac{\text{Domestic Price} - \text{Foreign Price}}{\text{Foreign Price}}$$

or,

$$NRP = \frac{(P^D - P^F)}{P^F}$$

#### C.1.3 Effective Rate of Protection

In contrast, the effective rate of protection (ERP) goes beyond the NRP by considering not only the tariff on the final product but also tariffs on imported inputs and raw materials used in the production process. It provides a more comprehensive measure, capturing the entire tariff structure and its impact on the value-added at different stages of production (Balassa, 1965; Corden, 1971; and Johnson, 1965). Consider a scenario where a country imposes a 10 percent tariff on the import of steel (an input) and a 30 percent tariff on the import of automobiles (the final product) that use steel in their production. If the original price of an imported car is \$25,000, and the cost of steel in the car's production is \$5,000. The ERP, in this case, is 35 percent, illustrating the nuanced impact of tariffs on the entire production process (Johnson, 1953). The ERP can be calculated using the following formula:

$$ERP = \frac{\text{Value Added at Domestic Prices (VAD)}}{\text{Value Added at World Prices (VAW)}} - 1$$

or

$$ERP = \frac{VAD - VAW}{VAW} - 1$$

where,

VAW is value added in the sector at world prices or value added at free trade prices.

VAD is value added in the presence of trade policies or value added at domestic prices that incorporate the impact of all trade policies.<sup>1</sup>

### C.1.4 Distinctions between NRP and ERP

The NRP is the direct tax levied on imports expressed as a percentage of the import price. It's the simplest to understand and calculate. For example, if a country imposes a 10 percent tariff on imported cars, the NRP for cars is 10 percent. While ERP considers not just the NRP on the final product, but also the protection (or tax) on all the inputs used in producing that product. A higher ERP indicates a greater level of protection for the value added (profit) generated by the domestic industry. It can be more complex to calculate but provides a more accurate picture of the actual tariff impact.

- **Scope of Analysis:** NRP Considers only the impact of tariffs on final imported products while considering the impact of tariffs on both final products and imported inputs used in the production process.
- **Comprehensiveness:** NRP offers a simplified measure, often not accounting for the entire tariff structure while ERP provides a more comprehensive measure by considering the impact on value-added at different stages of production.
- **Consideration of Inputs:** NRP ignores the impact of tariffs on imported inputs and raw materials while ERP accounts for the impact of tariffs on inputs, offering a more accurate measure of protection provided to domestic industries.

In the numerical examples, the NRP focused on the tariff impact on the final product (smartphones), while the ERP considered the impact on the value-added in the production process, accounting for tariffs on both the final product (automobiles) and the inputs. The ERP provides a more nuanced understanding of the overall protection afforded by the tariff structure to the industry.

### C.1.5 Domestic Resource Cost (DRC)

The DRC assesses the value of using local resources for foreign exchange through domestic production. Calculated as the ratio of “shadow priced value of

$$DRC = \frac{\text{Total Resource Costs (distortion free)}}{\text{Domestic Output (at world prices)}}$$

domestic resources” to “world price of traded outputs,” it gauges efficiency and sustainability. Widely used in protection and comparative advantage studies, the DRC aids in cost-benefit analyses, offering nuanced measures of comparative costs for strategic decision-making and policy assessments.

The formula to calculate the DRC is as follows:

$$DRC = \frac{\hat{w}L + \hat{r}K}{1 \text{ Dollar}}$$

where,

$w$  is the shadow wage rate,

$L$  is labour,

$r$  is the shadow return on capital, and

$K$  is the capital stock.

Another way to express DRC is:

where:

Total Resource Costs (distortion free) include all the costs associated with producing a specific quantity of a good or service, encompassing both labor and capital costs.

Domestic Output (at world prices) represents the quantity of the good or service produced domestically.

### A Policy Matrix

	Positive Protection	Negative Protection	Extreme Protection
DRC > 1	See the trend in DRC and decide about protection	See the trend in DRC and decide about protection	No
DRC < 1	No, don't spoil the efficient industry	Don't penalize the efficient industry	No

- If DRC > 1, then the industry is inefficient.
- If DRC < 1, then the industry is efficient.

The DRC is used to assess the opportunity cost of domestic resources used in production. It helps policymakers and analysts understand whether it is more cost-effective for a country to produce a particular good domestically or import it from another country. Comparing the DRC with international prices or costs provides insights into a country's comparative advantage in producing specific goods and making informed trade policy decisions.

#### C.1.6 Limitations of DRCs

- DRCs refer to only one period and changes in prices of inputs and outputs at later periods would affect the profitability of the project and DRCs in subsequent periods.
- Sensitivity analysis, however, may be carried

out to assess the long-run DRCs and viability of the industry or project.

- We often use three to five-year moving averages and an analysis for a longer period to overcome this problem.

#### C.1.7 Interpretation of DRC

1. **Comparative Advantage:** If DRC is lower than the cost of importing the same good from other countries, it suggests that the country has a comparative advantage in producing that particular good. In such cases, it may make economic sense for the country to specialize in the production of that good and export to other nations.
2. **Resource Allocation:** Analyzing the DRC helps in efficient resource allocation. If a country can produce a good at a lower cost domestically, it may choose to allocate its resources, say from inefficient industries, to

### Case 1

Tariff on Cars = 25 percent

Tariff on Car Parts = 0 percent

Foreign Price of Car: \$8,000

Domestic Price of Car = \$10,000

Foreign Price of Car Parts: \$6,000

Domestic Price of Car Parts = \$6,000

VAW = \$2,000

VAD = \$4,000

$$ERP = \frac{VAD - VAW}{VAW} = \frac{4000 - 2000}{2000} \times 100 = 100\%$$

**Explanation:** When no or lower tariffs are applied on imported inputs than on the final imported product, the effective rate of protection, exceeds the nominal tariff rate. It also indicates positive protection.

### Case 2

Tariff on Cars = 25 percent

Tariff on Car Parts = 10 percent

Foreign Price of Car: \$8,000

Domestic Price of Car = \$10,000

Foreign Price of Car Parts: \$6,000

Domestic Price of Car Parts = \$6,000

VAW = \$2,000

VAD = \$3,400

$$ERP = \frac{VAD - VAW}{VAW} = \frac{3400 - 2000}{2000} \times 100 = 70\%$$

**Explanation:** While nominal protection is 25 percent, now with a tariff on parts, the effective protection rate is 70 percent. So, protection is somewhat eroded.

### Case 3

Tariff on Cars = 0 percent

Tariff on Car Parts = 10 percent

Foreign Price of Car: \$8,000

Domestic Price of Car = \$10,000

Foreign Price of Car Parts: \$6,000

Domestic Price of Car Parts = \$6,600

VAW = \$2,000

VAD = \$1,400

$$ERP = \frac{VAD - VAW}{VAW} = \frac{1400 - 2000}{2000} \times 100 = -30\%$$

**Explanation:** Thus, if the total value of the tariffs on importable inputs exceeds that on the output, the ERP is negative (-30 percent), i.e., the industry is discriminated against in comparison with the imported product and penalized.

that industry, promoting economic efficiency.

**3. Trade Policy:** DRC considerations are vital for formulating trade policies. Policymakers may use DRC analysis to identify industries where protectionist measures or subsidies could be applied to enhance domestic competitiveness.

**4. Export Competitiveness:** For countries looking to boost their export competitiveness, understanding the DRC is crucial. Lower DRC values signify a cost advantage in global markets.

It's important to note that DRC analysis is a dynamic concept that considers not only the

current costs but also factors in changes over time, such as technological advancements and shifts in factor prices. By incorporating these considerations, policymakers can make informed decisions about resource allocation and trade strategies.

It is important to note that DRC and ERP are related concepts that are often used in the analysis of international trade and economic development. Both concepts provide insights into the efficiency and competitiveness of domestic industries, but they focus on different aspects of the production process.

## C.2 Empirical Findings

This part discusses the findings of the ERP and DRC

<sup>2</sup> **Note:** In ERP calculations, it is crucial to include implied tariffs on both final products and their importable inputs, regardless of whether they were actually imported. The existence of tariffs can impact local prices, making it significant for study purposes.

categorized by different types of products and the size of the industry.

### C.2.1 ERP Calculation Outcomes<sup>2</sup>

In case 1, the ERP of 100 percent indicates that the applied 25 percent tariff on imported materials results in a doubled increase in the value added in the car production process. This suggests that the domestic car industry is receiving protection, making it more competitive compared to the situation without tariffs.

Similar to case 1, the ERP of 70 percent signifies that the 25 percent tariff leads to a certain percentage increase in value added. The specific increase will depend on the calculation, but the positive ERP indicates protection and an improvement in the competitiveness of the domestic car industry.

In case 3, an ERP of 30 percent suggests that without any tariffs on imported materials, there is no change in the value added to the car production process. The absence of tariffs implies that the industry is operating without protection, and the competitiveness is based on global market conditions.

Note that a positive ERP indicates that the imposition of tariffs or trade restrictions on a particular industry has led to an increase in the value added to the production process. In essence, a positive ERP suggests that domestic industries receive protection and become more competitive compared to international producers. Here are key implications

and possible interpretations of a positive ERP:

1. **Competitive Advantage:** A positive ERP implies that the protected industry benefits from the tariff or trade restrictions, leading to increased value added in the production process. This can enhance the industry's competitiveness compared to foreign producers.
2. **Encouragement for Domestic Production:** Positive ERPs can incentivize domestic producers to expand production, as they face reduced competition from lower-cost imports. This, in turn, may contribute to increased employment and economic activity in the protected industry.
3. **Resource Reallocation:** The positive ERP may signal that resources (capital, labor, etc.) are efficiently allocated to the protected industry. This allocation can enhance overall economic efficiency and productivity within the country.
4. **Promotion of Strategic Industries:** Governments may use positive ERPs as a tool to strategically protect and promote key industries considered vital for national security or economic development.
5. **Trade Balance Improvement:** Positive ERPs can contribute to an improvement in the country's trade balance by reducing reliance on imported goods in the protected industry. This

#### Case 4

Tariff on Cars = 50 percent	Tariff on Car Parts = 0 percent
Foreign Price of Car: \$8,000	Domestic Price of Car = \$12,000
Foreign Price of Car Parts: \$9,000	Domestic Price of Car Parts = \$9,000
VAW = -\$1,000	VAD = \$3,000

$$ERP = \frac{VAD - VAW}{VAW} = \frac{3000 + 1000}{-1000} \times 100 = -400\%$$

**Explanation:** This is the case of negative value added at world prices. Note: this is not negative protection but a case of 'extreme protection'.

may be particularly relevant in sectors where a country seeks to achieve self-sufficiency.

6. **Strategic Trade Policy:** Policymakers may use positive ERPs as an indication that their chosen trade policies are achieving the intended goals. This information can be valuable in shaping and adjusting strategic trade policies.
7. **Protection Against Dumping:** Positive ERPs can also protect the practice of dumping, where foreign producers sell goods in the domestic market at prices lower than their production costs. Tariffs can counteract this and protect domestic industries.

It's important to note that while a positive ERP suggests benefits for the protected industry, the overall impact depends on the broader economic context. Policymakers need to carefully weigh the advantages and disadvantages of protectionist measures, considering the long-term effects on economic growth, consumer welfare, and international relations. Additionally, positive ERPs should be analyzed in conjunction with other economic indicators to form a comprehensive understanding of the economic landscape.

In case 4, an ERP of -400 percent suggests that the high tariff on the imported car has resulted in high value added at domestic prices, when this is converted into world prices (free-trade) then value added at the world prices became negative, potentially indicating a cost disadvantage for the domestic car industry.

Note that a negative ERP (less than -100) indicates that the imposition of tariffs or trade restrictions on a particular industry has led to a reduction in the value added to the production process. In other words, such a negative ERP suggests a potential cost disadvantage for the domestic industry, making it less competitive compared to international producers. In case 4, industry appeared to have a positive value added at domestic (distorted prices) but when it is transformed into world prices (free-trade prices) then it becomes negative. This implies an industry

cannot face foreign competition, it is surviving due to extreme protection of policy measures (tariffs and NTBs). Here are some key implications and possible interpretations of a negative ERP (for extremely high protection):

1. **Cost Disadvantage:** A negative ERP implies that the cost of production, including tariffs on imported inputs or final products, exceeds the value added in the production process. This can make domestic industries less competitive in the global market.
2. **Inefficiency or Ineffectiveness of Protection:** The negative ERP may indicate that the chosen protectionist measures, such as tariffs, are not effectively promoting the competitiveness of the domestic industry. In some cases, protectionist policies might lead to unintended consequences, hindering rather than enhancing the domestic industry.
3. **Potential Resource Misallocation:** The negative ERP suggests that resources (capital, labor, etc.) might be better allocated elsewhere in the economy. This misallocation could impede overall economic efficiency and growth.
4. **Evaluation of Trade Policies:** Policymakers should carefully evaluate the negative ERP and assess whether the chosen trade policies are achieving their intended goals. Adjustments to trade policies may be necessary to avoid detrimental effects on domestic industries.
5. **Consideration of Global Value Chains:** In industries where products are part of global value chains, negative ERPs might be influenced by the interconnected nature of production processes across borders. Tariffs on intermediate goods may result in negative ERPs for downstream industries.
6. **Impact on Economic Welfare:** Negative ERPs can have implications for the economic welfare of the country. If protectionist measures lead to reduced efficiency and increased costs,



DRC/ERP Estimates for Pakistan		
Industry	DRC	ERP
Consumer Goods	6.00	60
Intermediate Goods	0.22	108
Capital Goods	0.82	102
Total	1.44	77

**Explanation:** The DRC/ERP numbers for Consumer Goods, Intermediate Goods, and Capital Goods in Pakistan show different levels of reliance on imports and domestic value addition, emphasizing the need for specific policies to strengthen each industry and boost local production.

it may negatively affect consumers, as they might face higher prices for goods and services.

It's important to note that while a negative ERP generally suggests a cost disadvantage, the overall impact depends on the specific circumstances of the industry, the effectiveness of protectionist measures, and broader economic considerations. Policymakers need to carefully analyze the reasons behind the negative ERP and consider adjustments to trade policies to ensure a balanced approach that supports economic growth and competitiveness.

### C.2.2 DRC/ERP Calculations

The interpretation of DRC and ERP in each case are:

#### Estimates for Pakistan

##### 1. Consumer Goods:

- **DRC:** This implies that the total cost incurred

by the country in terms of domestic resources to produce one unit of Consumer Goods is 6.00 units of resources. Moderate DRC suggests a relatively higher overall cost of production in terms of domestic resources.

- **ERP:** The ERP is 60 percent, suggesting that trade policies, such as tariffs or other measures, contribute to a 60 percent increase in the value added in the production process of Consumer Goods. The moderate ERP indicates a substantial impact of trade policies, contributing to increased value added.

##### 2. Intermediate Goods:

- **DRC:** The domestic resource cost for intermediate goods is relatively low, indicating that the total cost of domestic resources for producing one unit is 0.22 units. Low DRC suggests a more efficient utilization of domestic

DRC/ERP Estimates for Pakistan: Size of Industry		
Industry	DRC	ERP
Small	0.57	69
Medium	0.77	136
Large	1.49	75
Total	1.44	77

**Explanation:** The DRC/ERP estimates for small, medium, and large industries in Pakistan indicate diverse patterns of import dependence and domestic value addition, highlighting the importance of tailored policies for each sector's resilience and local value chains.

resources in production.

- **ERP:** The high ERP of 108 percent suggests that trade policies significantly impact the value added in the production process of Intermediate Goods, contributing to a substantial increase. The high ERP suggests that trade policies have a significant impact on the value added to the production process.

### 3. Capital Goods:

- **DRC:** The domestic resource cost for capital goods is moderate, signifying that the total cost of domestic resources for producing one unit is 0.82 units. Moderate DRC implies a moderate cost of production in terms of domestic resources.
- **ERP:** The ERP of 102 percent indicates a significant impact of trade policies on the value added in the production process of capital goods, contributing to a considerable increase. The high ERP indicates a substantial impact of trade policies on the value added in the production of Capital Goods.

### 4. Total:

- **DRC:** The total Domestic Resource Cost is the sum of the individual DRC values for each industry, resulting in 1.44 units. The total DRC represents the aggregated domestic resource costs for all industries.
- **ERP:** The total Effective Rate of Protection is

the aggregated ERP values for each industry, resulting in 77 percent. This reflects the overall impact of trade policies on the value added across all industries. The total ERP reflects the overall impact of trade policies on the value added across all industries.

## Estimates for Pakistan: Size of Industry

The interpretation of DRC and ERP, in case of the size of industry, are:

### 1. Small Industry:

- **DRC:** The domestic resource cost for small industries is 0.57, indicating the total cost incurred by the country in terms of domestic resources to produce one unit in small-sized industries.
- **ERP:** The ERP for Small Industries is 69 percent, suggesting that trade policies contribute to a 69 percent increase in the value added in the production process of small-sized industries.

### 2. Medium Industry:

- **DRC:** The domestic resource cost for medium Industries is 0.77, signifying the total cost of domestic resources required to produce one unit in medium-sized industries.
- **ERP:** The ERP for Medium Industries is 136 percent, indicating a significant impact of trade policies on the value added in the production process of medium-sized industries,

### DRC/ERP Estimates for Pakistan: Market Orientation of Industry

Market Orientation of Industry	DRC	ERP
Export-oriented	0.54	62
Import-competing	2.15	231
Total	1.44	77

**Explanation:** Export-oriented industries in Pakistan display a favorable balance between import dependence and domestic value addition, with a low DRC of 0.54 and a significant ERP of 62, while import-competing industries, despite a high DRC of 2.15, contribute substantially to domestic value addition with a remarkably higher ERP of 231, emphasizing the need for nuanced policies to support each market orientation's unique dynamics.

resulting in a substantial increase.

### 3. Large Industry:

- **DRC:** The domestic resource cost for large industries is 1.49, implying a relatively higher overall cost of production in terms of domestic resources for large-sized industries.
- **ERP:** The ERP for Large Industries is 75 percent, suggesting that trade policies contribute to a 75% increase in the value added in the production process of large-sized industries.

### 4. Total:

- **DRC:** The total domestic resource cost is the sum of the individual DRC values for each industry size, resulting in 1.44 units.
- **ERP:** The total effective rate of protection is the aggregated ERP values for each industry size, resulting in 77 percent. This reflects the overall impact of trade policies on the value added across all industry sizes

## Estimates for Pakistan: Market Orientation of Industry

The interpretation of DRC and ERP, in case of market orientation of industry, are:

### 1. Export-oriented Industry:

- **DRC:** The domestic resource cost for Export-oriented Industries is 0.54, indicating the total cost incurred by the country in terms

of domestic resources to produce one unit in industries oriented towards export.

- **ERP:** The ERP for Export-oriented Industries is 62 percent, suggesting that trade policies contribute to a 62 percent increase in the value added in the production process of industries oriented towards export.

### 2. Import-competing Industry:

- **DRC:** The domestic resource cost for Import-competing Industries is 2.15, implying a relatively higher overall cost of production in terms of domestic resources for industries competing with imports.
- **ERP:** The ERP for Import-competing Industries is 231 percent, indicating a substantial impact of trade policies on the value added in the production process of industries competing with imports, resulting in a significant increase.

### 3. Total:

- **DRC:** The total domestic resource cost is the sum of the individual DRC values for each market orientation, resulting in 1.44 units.
- **ERP:** The total Effective Rate of Protection is the aggregated ERP values for each market orientation, resulting in 77 percent. This reflects the overall impact of trade policies on the value added across all market orientations.

## Part D: Conclusion and Policy Recommendations

### D.1 Conclusion

The report provides a thorough examination of challenges faced in safeguarding industries in Pakistan, specifically highlighting associated costs and proposing strategies for sustainable growth within the global trade context. It underscores the imperative for balanced and forward-looking policies, emphasizing the analysis of DRC/ERP estimates for var-

ious sectors in Pakistan. The insights derived from this analysis are deemed crucial for informing and shaping the country's economic policies within the overarching framework of free trade.

The findings highlight the significance of tailored strategies that consider the unique characteristics of each industry and market orientation. While export-oriented industries benefit from maintaining

a low DRC for enhanced global competitiveness, import-competing sectors contribute significantly to domestic value addition despite higher import dependence. This highlights the necessity of nuanced policies fostering sustained growth in both sectors.

Moreover, the report's exploration of historical context and objectives underscores the need for a balanced approach to protectionism in the current era of liberalized trade, providing valuable lessons to inform a forward-looking policy framework aligned with the evolving dynamics of global trade. In evaluating protective measures, the report considers the nominal implicit tariff on final goods as a reliable indicator, navigating the complexities arising from practical scenarios involving the integration of domestic factors with traded intermediate goods. The effective rate of protection is emphasized as a vital concept, facilitating nuanced understanding and assessment of resource-allocation implications, particularly in cases of extreme protection, thereby guiding informed decisions in the realm of trade and industry.

## **D.2 Policy Recommendations**

### **D.2.1 Protection for Industrial Development**

Recognizing the pivotal role of protection in industrial development is crucial, particularly in safeguarding minor industries. Implementing safeguard measures through effective trade remedy laws becomes imperative to address distortions, ensuring a level playing field for industries of all sizes. These measures aim to create an environment where industries, especially smaller ones, can thrive and contribute significantly to overall economic development.

### **D.2.2 Trade Revenue Generation**

To foster a level playing field and enable trade revenue generation, the government should take decisive actions to minimize trade distortions through robust trade remedy laws. Aligning the national trade policy's objectives with the promotion of trade becomes paramount. Emphasis should be placed on fulfilling revenue requirements to support sustainable economic growth. This approach ensures that trade policies not only facilitate fair competition but also contribute positively to the overall economic health of the nation. Although, the tariff policy aims at promoting exports, its visible effect is not realized on account of its use as tool to revenue generation. Achieving objectives of the tariff policy would require balanced approach and must serve to facilitate local industry by minimizing front load in terms of imposition of tariff.

### **D.2.3 Long-term Objectives for Revenue Generation**

Recognizing the potential drawbacks of short-term revenue objectives dominating the trade policy is essential. There is a need to reevaluate the national trade policy, giving due consideration to mid-term and long-term objectives. This strategic shift aims to promote sensible revenue generation that aligns with the sustainable growth of the economy. Facilitating export growth becomes a key focus, ensuring that the trade policy catalyses long-term economic prosperity rather than solely focusing on immediate financial gains. In this context, it is advisable if the regulatory regime is discouraged and focus should be imparted on provision of trade remedies to safeguard the interest of the local industry.

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## **NATIONAL TARIFF COMMISSION**

*The National Tariff Commission NTC is the primary government agency mandated to develop, formulate, and recommend tariff policies and programs consistent with national economic objectives. It provides level playing field to local industry through the provision of trade remedy like Anti-dumping, Safeguard Measures, Countervailing Measures and Tariff Protection.*



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