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# Pakistan

## Economic Policy for Competitiveness

Import Duties and Performance – Some Stylized Facts for Pakistan

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MTI



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# Import Duties and Performance

Some Stylized Facts for Pakistan<sup>1</sup>

## Executive Summary

**This note discusses the role that import duties have in Pakistan’s economy, and their links with export competitiveness.** Import duties play two key roles. First, they are a source of tax revenues for governments. Second, when imposed on a product, they create a wedge between its world price, and the price paid domestically (as well as a wedge between its domestic price, and the price of its substitute in the domestic economy). These wedges affect the allocation of resources. They divert resources away from export markets – in which firms will only fetch world prices for the product – and into the domestic market, effectively creating an anti-export bias. Thus, an import duty is implicitly an export duty. When these duties are applied on inputs that different sectors use to produce, the duty induces firms to substitute away from that – now more expensive – input, and into other substitutes, thus affecting the otherwise optimal technological choice of firms, as well as increasing their production costs.

**This note is organized as follows.**

**The first section presents a snapshot of import duties in Pakistan.** It discusses the role that import duties have in Pakistan’s overall tax revenues and presents an overview of the type of duties importers pay, and how these duties fall disproportionately on final goods rather than on raw materials, intermediates and capital equipment – structure known as ‘cascading’, which aims at protecting domestic producers of final goods. Finally, it provides measures of effective protection by sector, revealing how tariff policy encourages or discourages resource allocation sectors through changes in relative prices.

**The second section empirically examines the ways import duties induce an allocation of resources that is different from the one that would be obtained without the duty distortion.** First, it quantifies the anti-export bias that these duties introduce through two channels: the input channel – by increasing production costs and therefore reducing competitiveness, and the output channel – by increasing profits of selling domestically rather than exporting. Second, it presents evidence of the way the FTA between China and Pakistan, that liberalized a substantial portion of trade through reductions in import duties, helped Pakistan’s export competitiveness through the input channel, while inducing some reallocation of resources in less competitive sectors. Third, and again focusing on the input channel, it examines the effects of import duty reductions on Pakistan’s firms’ productivity.

**The third section looks at the role of tariff policy in the context of the COVID-19 pandemic.** It provides a brief overview on how tariffs can play a role in the COVID-19 relief and recovery process in Pakistan, by affecting affordability of COVID-19 essentials and by determining the robustness of the domestic supply response for those products.

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**The fourth section briefly describes the recent changes in the tariff policy institutional arrangement.** It analyzes how the novel National Tariff Policy objectives interact with the challenges described in the previous sections.

**The fifth section concludes and provides policy recommendations moving forward.**

**Five main messages emerge from the analysis.**

- (1) *Import duties in Pakistan perform a dual role.* They contribute to a substantial portion of tax revenues – higher than expected given the country’s level of development. They also contribute to protect specific sectors from import competition. This is evidenced by the marked cascading observed in the import duty structure, and by measures of effective protection.
- (2) *Import duties in general – and in Pakistan in particular - act as an export tax.* They induce firms to sell in the domestic market, by making the domestic market more profitable than exporting.
- (3) *Import duties on intermediate inputs are particularly distortive.*
  - a. Evidence from the China-Pakistan FTA liberalization process shows that, after the agreement, export sectors in Pakistan that relied more intensively on inputs coming from China improved their export performance to the rest of the world.
  - b. Duties on intermediates hurt productivity, and particularly, that of small and domestic oriented firms. While some exporters may have access to import duty drawback mechanisms, for small exporters that only import indirectly, or for domestically oriented firms that are not eligible for duty drawbacks, duties on intermediates alter their technological choices, making them less productive.
  - c. They also affect entrepreneurial activity – as the COVID-19 emergency revealed.
- (4) *Import duties also played a role in the context of the COVID-19 pandemic.* They affect affordability of essential items and the capacity of the private sector to respond to increased demand at home and abroad (via increased production costs).
- (5) *Tariff policy has complex implications on competitiveness and resource allocation.* This implies that to design and evaluate interventions, policymakers need to have access to quality and up-to-date data and skilled human resources to process that data and create valuable information.

The recommendations that emerge from this analysis are as follow:

**First, introduce simplicity, transparency and predictability in tariff policy making.** Tariffs, and other import duties, play a key role in allocating resources. To avoid unintended consequences of ad-hoc changes in tariffs, regulatory duties, and additional customs duties, it is crucial for the National Tariff Board to commit to a simple and transparent tariff structure, with low average tariffs and minimum dispersion.

**Second, reduce import tariffs on inputs, but gradually reduce those on final goods too.** The analysis presented in this note shows the key role that import duties play on increasing costs and limiting access to foreign knowledge embedded in imported inputs. Yet, reducing input tariffs while keeping tariffs on

final goods high (cascading) introduces an anti-export bias that ultimately leads to lower productivity growth.

**Third, simplify the processes for accessing duty exemption schemes for exporting firms.** Private sector consultations reveal that having access to duty exemption schemes requires a complex and lengthy process. This tilts these schemes in favor of larger firms that can devote resources for these purposes. The analysis presented in this note tends to validate this anecdotal evidence. While import duties on inputs do not affect the productivity of larger firms (that can secure these imported inputs at world prices), they do affect smaller firms. Automation that reduces arbitrariness at any point in the process will help small firms have easier access to these schemes.

**Fourth, equip the National Tariff Board with the skills and data needed to make evidence-based policy decisions.** The recently approved National Tariff Policy, that brings trade policy setting under the National Tariff Board, is a great step towards considering tariffs as a tool to reduce trade costs, rather than one to increase revenues. Yet, as the analysis presented here reveals, because tariffs affect firms' cost structures along the entire value chain, tariff setting is a complex undertaking, requiring highly skilled personnel and quality data. It is crucial, then, that as a complement to the set-up of the National Tariff Board, the National Tariff Commission is equipped with the right skills and data to ensure evidence-based policy making.

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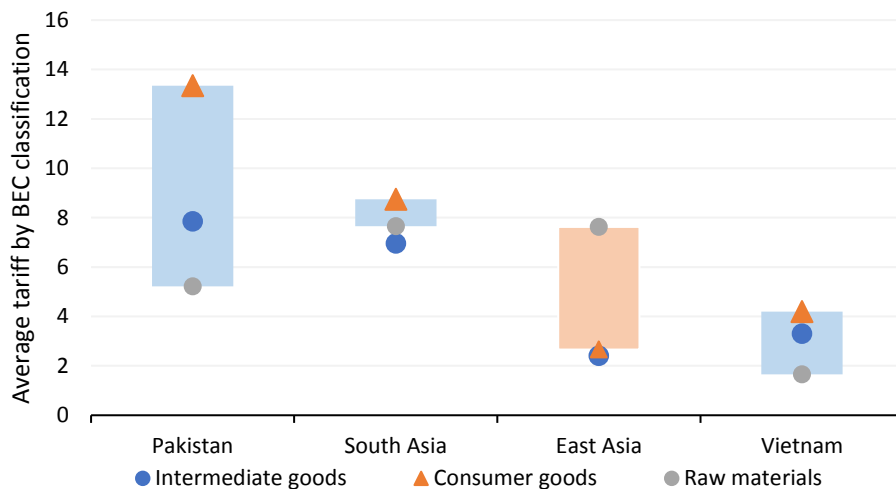
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allocation of resources and policy capture by dominant groups. In contrast, in EAP, one of the most outward oriented regions in the world, and an active participant in GVCs, the weighted average tariff rate differential was only 1 percentage point between consumer goods and raw materials in 2018.

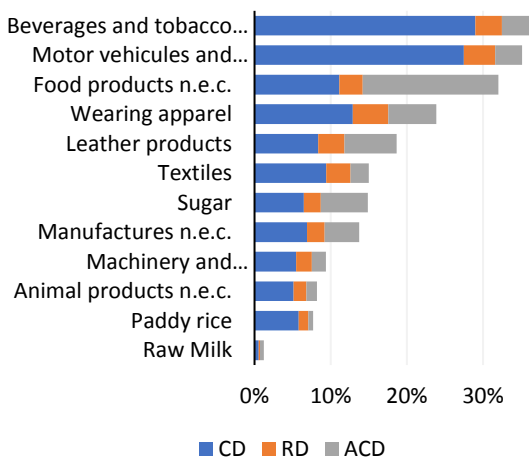
Figure 2: Tariff cascading by country/region, 2018 or last available year



Source: own elaboration using UN TRAINS data.<sup>6</sup>

**When coupled with the regulatory and additional customs duties, import duties constitute a big burden on firms' costs.** Despite cascading, which implies lower tariffs on inputs than on final goods, the sum of duties on imports adds substantial costs in the production process of many sectors in Pakistan. For example, in leather, upstream duties on imports account for more than 19 percent total cost, in wearing apparel, they account for 24 percent of costs, and for textiles 15 percent (Figure 3).

Figure 3: Upstream tariffs in Pakistan, selected sectors (Share of output value)



**Duties on imported inputs increase input prices at home regardless of whether these inputs are imported or not.** The import duties create incentives for producers of domestic varieties of inputs at home to increase prices, as the duties deter competition from abroad. Thus, import duties on a good tend to increase prices at home, regardless of whether the country imports that specific good or not.

Source: Authors' calculations based on UTAS, WB.<sup>7</sup>

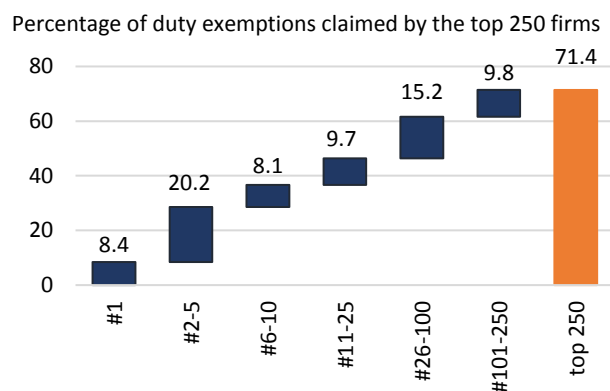
<sup>6</sup> Data for Vietnam corresponds to 2017.

<sup>7</sup> The data used to construct this graph and the data for the sectors not shown is included in a table in the Data Appendix.

**Fact 3: The import duty structure is complex and induces allocation of resources in favor of highly protected sectors.** The use of alternative and ad-hoc protection instruments, along with an increasing importance of duty exemptions, mark the complexity of the system. The use of customs duty exemptions became more prevalent between FY 2012/13 and FY 2016/17, and despite efforts to reduce them, these increased from covering 34 to 50% of import values.

**Not all exporting firms benefit from exemptions. Their impact is, in practice, skewed in favor larger firms.** Duty exemptions on inputs are available for exporting firms, and while these exemptions reduce the effective customs duty paid by exporters, they do not benefit all firms. The largest five exporting firms accounted for 28.6% of the total exempted duties (Figure 4). The complexity of the process, which is lengthy and cumbersome, and the fact that smaller firms usually do not import directly their inputs represent some of the reasons why beneficiaries of such exemptions are concentrated among big firms.

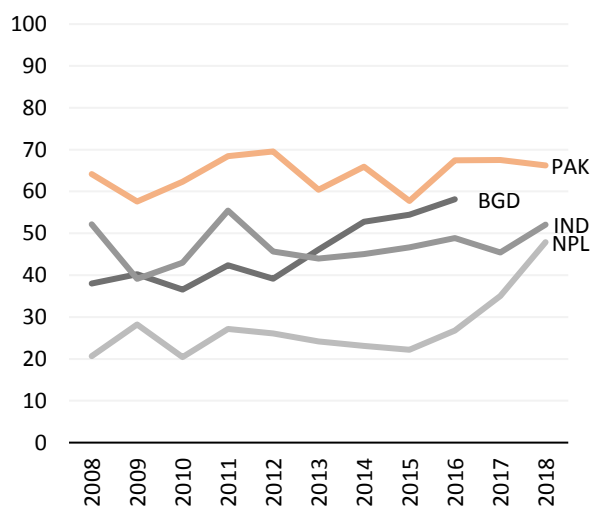
Figure 4: The largest exporting firms in Pakistan account for the bulk of duty exemptions



Source: World Bank staff calculations based on customs data from Federal Board of Revenue.

**Pakistan has a more complex tariff structure than other South Asia countries such as India, Nepal and Bangladesh** (Figure 5Error! Reference source not found.). Another way of assessing the complexity of a tariff structure is by measuring how much dispersion there is within broad tariff chapters. For example, a country may choose to protect the IT products sector and not the leather sector. But within IT products, it may choose to levy high tariffs to 4G phones, and low tariffs for 2G phones, or have a flat tariff within the IT product chapter. Having variation within broad chapters adds complexity, uncertainty, alters technological choices of firms (which will substitute away the better technology (4G) due to the tariff), and creates incentives to mis declare imports at customs. To track that type of complexity, we measure the tariff dispersion at the highly disaggregated product level (6-digit HS) that is not explained by tariff dispersion at a broader level of disaggregation (4-digits HS). The more complex the tariff code, the more variation we would expect within 4-digit product groups,

Figure 5: Tariff complexity indicator. Within 4-digit variation of 6-digit tariffs, normalized ranking. 100 indicates the country with most complex tariff schedule, 1 indicates the simplest one.

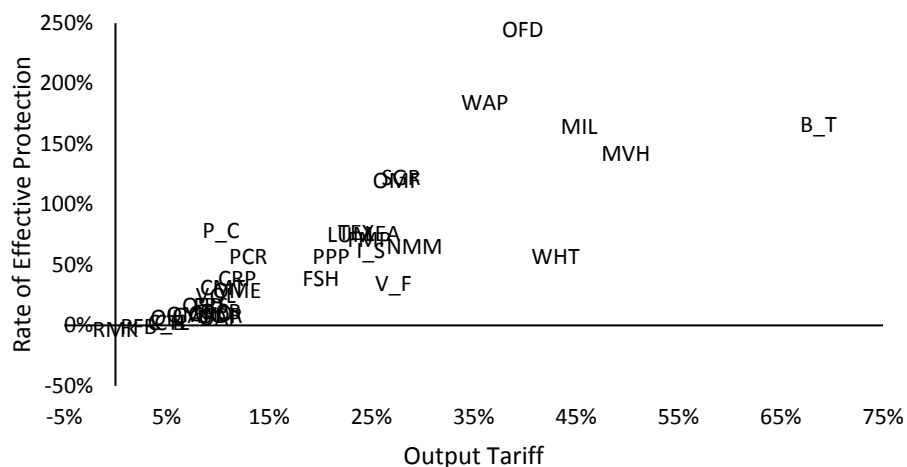


Source: own elaboration using UN TRAINS data.

relative to the variation between the 4-digit product groups.

**Fact 4: Marked cascading leads to high effective rates of protection in some sectors.** Cascading, combined with substantial variation in import duties within and between sectors, have often unintended consequences on allocation of resources by granting high rates of effective protection to some sectors, and low – and often negative protection, to others.

Figure 6: Output tariff and Effective Rates of Protection in Pakistan



import duties on inputs needed to produce those goods and (3) the amount of value added created in the sector per unit of output.<sup>10</sup>

**There is a positive correlation between the simple average output tariff of a goods producing sector and its effective rate of protection (Figure 6).** This is in part a consequence of many sectors using, as production inputs, products that are produced within the same sector. In Pakistan, effective rates of protection are high (and positive) for sectors such as industrial food products, motor vehicles, wearing apparel, textiles and low (and even negative) for primary sectors such as cattle, other animal products, raw milk, and paddy rice (Figure 7). Regulatory Duties (RD) and Additional Customs Duties (ACD) tend to exacerbate the patterns already observed in custom duty schedules (yellow bars are higher than grey bars for most sectors).

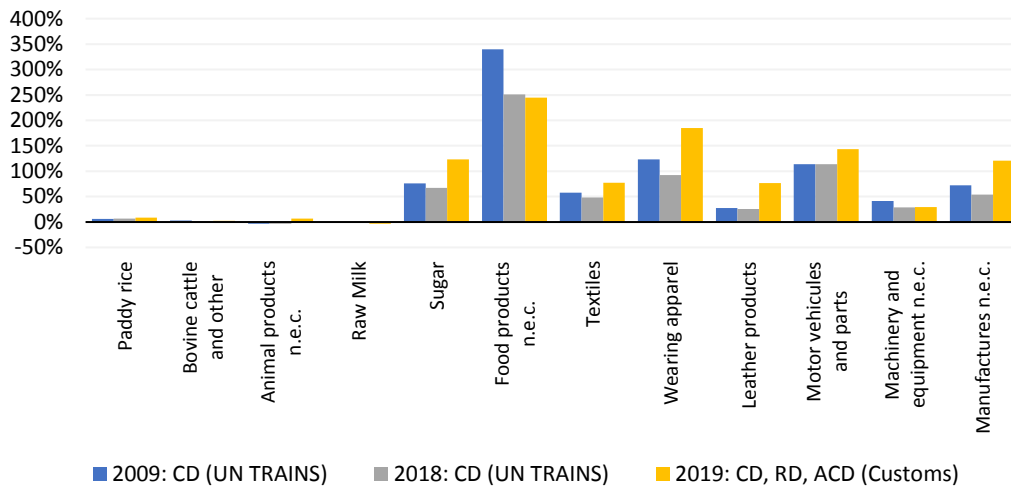
**Empirical evidence shows higher effective protection in Pakistan is detrimental to economic performance.** Empirical studies conducted for Pakistan have looked at the negative correlation between the effective rate of protection and industrial characteristics (labor intensity, export orientation, and revealed comparative advantage), and the impact changes in the effective protection has on industrial productivity. The high effective protection enjoyed by manufacturing sectors, and low – and often negative - displayed by many agricultural sectors, has been long standing (see Haque *et al.*, 2007).<sup>11</sup> More recently, Ahmed *et al.* (2017) show, for the period 1981-2006, the large and negative effect that effective protection has on manufacturing productivity.

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<sup>10</sup> The effective rate of protection is defined as the protection provided to an industry or sector by trade restrictions. In the Technical Appendix there is a brief explanation of the methodology of calculation. To illustrate the intuition behind the concept, consider a simple case: shoes are sold in Pakistan and abroad. Assume shoes are made of leather that is also sold in Pakistan and abroad. Suppose that, in absence of tariffs, shoes require \$100 of leather to be made, and are sold for \$150 in world markets. That is, shoemakers add \$50 in value to the total output value of the shoes. Now, say Pakistan imposes a 20% tariff on shoes, but no tariff on leather. Shoes would now sell for \$180 in Pakistan ( $\$180 = \$150 + \$30$ , where \$30 is the 20% tariff on \$150 of shoes). The value added by the Pakistani shoemaker has increased by \$30 and is now \$80 (the original \$50 plus the additional \$30). The tariff schedule provides the domestic shoemaker a 60% effective rate of protection per dollar of value added ( $60\% = \$30/\$50$ ).

<sup>11</sup> In that study, and as a pro-poor policy, the authors state the need for a tariff structure reform that reduces the increased burden on agricultural sectors which mainly employ unskilled labor.

Figure 7: Effective rate of protection in Pakistan, selected sectors



Source: Own elaboration using Pakistan's tariff schedule, 2013/14 IFPRI Input-Output tables and UTAS.<sup>12</sup>

## The costs of import duties on exports

*This section presents evidence on the impact of import duties on export performance. It argues that (i) high import duties, on either inputs or final products, have a detrimental effect on export competitiveness: the former through the channel of restricted access to knowledge embedded in foreign inputs and the increase in exporters' production costs; the latter through the increase in profitability of supplying the domestic market (via larger effective protection) while making the export market relatively less profitable; (ii) there is a concrete case of reductions in duties that affected allocation of resources, and in some cases it has proven effective to increase export competitiveness: the free-trade agreement between Pakistan and China helped Pakistani exporters increase competitiveness through access to more and cheaper inputs; and (iii) import duties, particularly those on inputs, reduce the productivity of firms in Pakistan.*

### Import duties and the anti-export bias: import taxes as implicit export taxes

**Firms' export decisions depend crucially on their ability to compete with firms in other countries.** This implies that high taxes and regulatory costs, which increase production costs, place a burden on the ability of firms to export. Similarly, when input costs are high, firms either resort to lower quality inputs or are forced to increase their output prices, which penalizes them on world markets. So how would we expect firms' exports to be affected when the government keeps higher import tariffs on intermediate inputs in relation to other countries? Input tariffs raise the price domestic producers pay for their inputs and act as an export tax on products sold abroad, as firms are generally not able to pass-on the higher input costs to international consumers. The higher the input tariffs, the less competitive domestic firms are in the international market (where domestic firms compete with foreign firms that are less exposed to these

<sup>12</sup> The data used to construct this graph and the data for the sectors not shown is included in a table in the Technical Appendix. The concordance between IFPRI Input-Output tables and the GTAP Input-Output tables used by UTAS was done by the authors.

tariff costs), the less profitable it is for domestic firms to export and therefore the lower the aggregated exports of the country.

**A growing body of empirical evidence suggests that lower tariffs on imported inputs will have positive effects on the country's exports.** Two channels have received attention. First, it has been shown that firms benefit from productivity gains when tariffs on intermediate inputs are lowered, as this increases firms' accessibility to better quality inputs. With lower tariffs on machinery firms may, for instance, be able to afford more reliable capital equipment, allowing them to move up the technology efficiency frontier. Moreover, better inputs may also increase the overall quality of firms' products, allowing them to expand to more lucrative markets with more stringent quality requirements. Second, a reduction in input tariffs increases the firms' ability to play a greater role in global value chains. The growing importance of global manufacturing networks along global value chains implies that even low tariffs can have large effects, as parts and components comprising a product are produced in multiple locations crossing borders various times before they are assembled into the final product. The combined effects of these channels thus suggest a detrimental impact of input tariffs on aggregated exports.

**To shed further light on the impact of input tariffs on exports across countries, we analyzed a database covering 115 countries between 1995 and 2018 using a regression framework.** Combining detailed country-specific information on tariffs, exports, and information on production structures from input-output tables, we constructed an aggregate measure of how input tariffs weigh in each country's production processes (see Technical Appendix 0). As shown in **Error! Reference source not found.** Figure 8 and Figure 9, countries' yearly exports are strongly and negatively correlated with input tariffs. The same holds for Pakistan. Years in which our measure of input-tariff was above average, coincided with years in which Pakistan's export performance was lower than usual. This correlation may not imply a causal link from input tariffs to exports, since other factors might be playing a role. Global downturns resulting in a decline of worldwide exports may for instance induce governments to adopt more protective trade policies. If this were true, the impact of input-tariffs would be much smaller than suggested by the simple cross-country correlation **Error! Reference source not found.** Hence we compare the evolution of this economy-wide input tariff measure in each country with the evolution of a exports using a more robust regression framework (see Technical Appendix 0 for a description of the methodology).

Figure 8: Exports and input tariffs

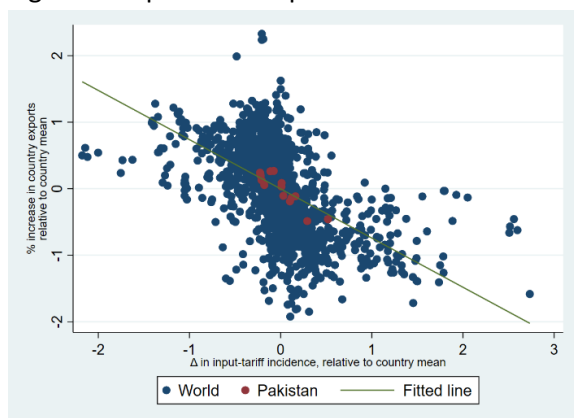
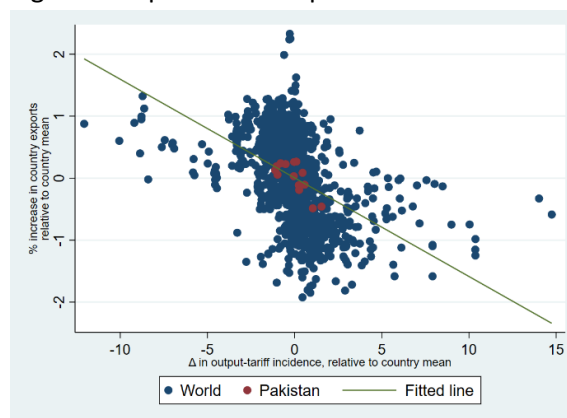


Figure 9: Exports and output tariffs



Source: Authors' calculation using UTAS

**Input tariffs have a larger effect on country exports than output tariffs.** Our results -further explained in Section 0 of the Technical Appendix **Error! Reference source not found.**- show that if a country experienced a 1 percentage point increase in our economy-wide input tariff measure, it would be expected to exhibit a 6% decline in exports in the year of the tariff hike and a 7% decline in the year after (see column 1 of the Table in Technical Appendix 0). Given that output tariffs are often posited as channels to achieve higher levels of aggregate productivity and greater export-orientation, how does this result on input tariffs compare with the impact of a reduction in output tariffs? Our regression results suggest that a 1 percent increase in a country's weighted output tariff would only lead to a 1% reduction in exports (see column 3 of the Table in Technical Appendix 0). Not only is this effect much smaller than the input tariff effect, but also statistically insignificant. Reductions in input tariffs are thus a key channel through which exports benefit from trade liberalization efforts.

**Not all sectors are equally affected by input tariffs: manufacturing sectors, which tend to rely more heavily on inputs and are typically more integrated in global value chains, are more affected than other sectors.** It is expected that input tariffs have a heterogeneous impact across sectors. Products that are part of global value chains are more exposed to changes in input tariffs because they cross borders multiple times before being assembled into a final product. By contrast, export products that are less integrated into global value chains may be less exposed to changing tariffs. To test this, we compared countries' export performances at the sector level with sector specific measures of input-tariff incidence (see Technical Appendix 0). Changes in input tariffs are more robustly associated with changes in export performance for manufacturing sectors.

**These results are aligned with international evidence on the importance of low import tariffs on inputs for achieving a successful GVC integration.** Indeed, a key channel underlying the results presented above is likely related to increased participation in regional and global value chains.<sup>13</sup>

### Tariff reductions and export performance: The China-Pakistan FTA

**The China-Pakistan Free Trade Agreement (CPFTA) provides an example to test if reducing import duties contributes to changes in export performance.** The CPFTA enacted in 2007 reduced Pakistan's import duties levied on imports from China.<sup>14</sup> Increased regional integration resulting from lower import duties with China can affect competitiveness through three channels. First, integration increases competition at home, which induces firms to increase efficiency and induces a better allocation of resources: sectors that cannot match the efficiency of the competitor sectors for inputs shrink, releasing resources (labor and capital) to other sectors that can successfully compete. Second, integration may boost Pakistan's export competitiveness with the world if firms use Chinese markets as a platform for learning, and that learning allows easier access to other markets. Third, it may increase the available variety of inputs, reduce their cost, or improve their quality, enhancing the competitiveness of Pakistani firms that use those inputs. We examined these three channels in turn.

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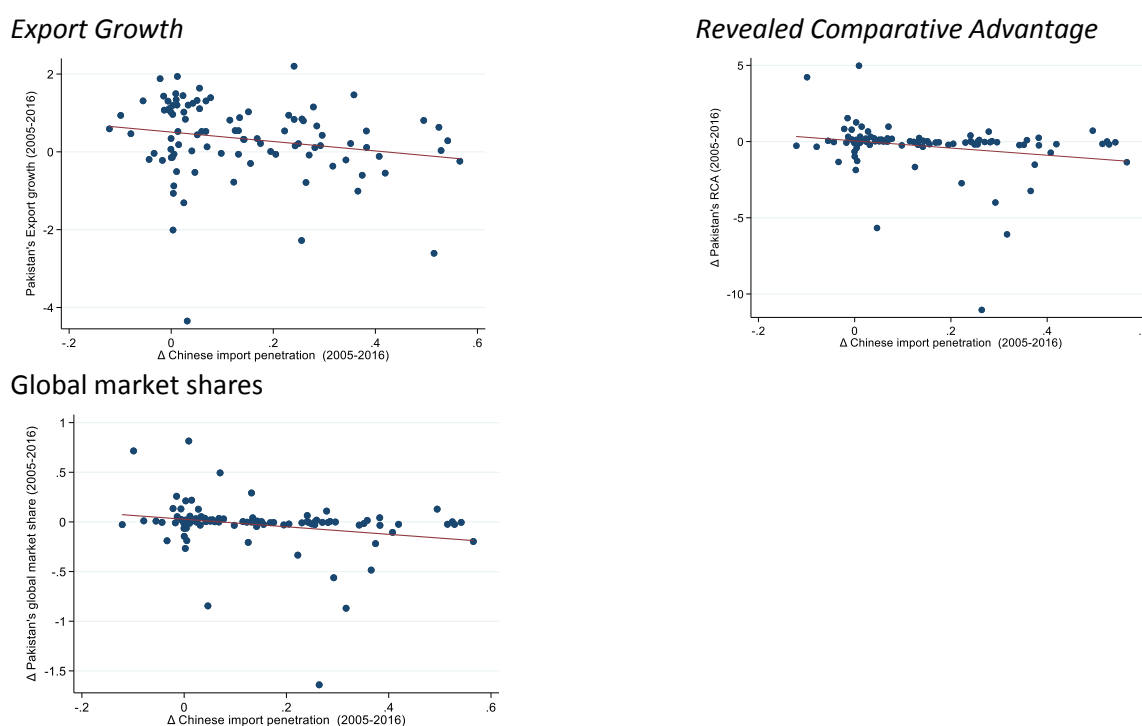
<sup>13</sup> For a detailed discussion on the role of import tariffs and GVC integration, see World Bank 2019 "Trading for Development: World Development Report."

<sup>14</sup> A second phase of the CPFTA was negotiated in 2019, with increased preferences provided to Pakistan's products, in many cases to match the preferences China gives to ASEAN countries.



**Channel 1: Increased competition.** Some Pakistani sectors that faced strong import competition from China decreased their export competitiveness. The export growth, global market share, and RCA of Pakistani sectors that faced increased import competition from China tended to decline from 2005 to 2016 (see Figure 10). Regression analysis confirms that increased import penetration from China in a Pakistani sector over 2005-16 is significantly associated with reductions in that sector’s export growth, RCA, and growth of market shares in global markets. While this may seem to be bad news for the shrinking sector, it is evidence of a Darwinian process at work, that contributes to reallocate resources – labor and capital, into more productive uses (other sectors).

Figure 10: Impact on Pakistani sectors of increased Chinese import penetration



Source: Authors’ elaboration based on BACI from CEPII.  
 Note: each dot corresponds to an export sector in Pakistan, at 2-digits of disaggregation in the HS classification

**Channel 2: China as a learning platform for exporters.** There is little evidence to suggest that exporting to China helped Pakistan increase exports to other markets. In principle, selling to one export market can help firms learn how to meet standards for quality, consistency, and timeliness that may be higher in foreign than in domestic markets. Thus, learning during the process of exporting can help firms improve their competitiveness.<sup>15</sup>

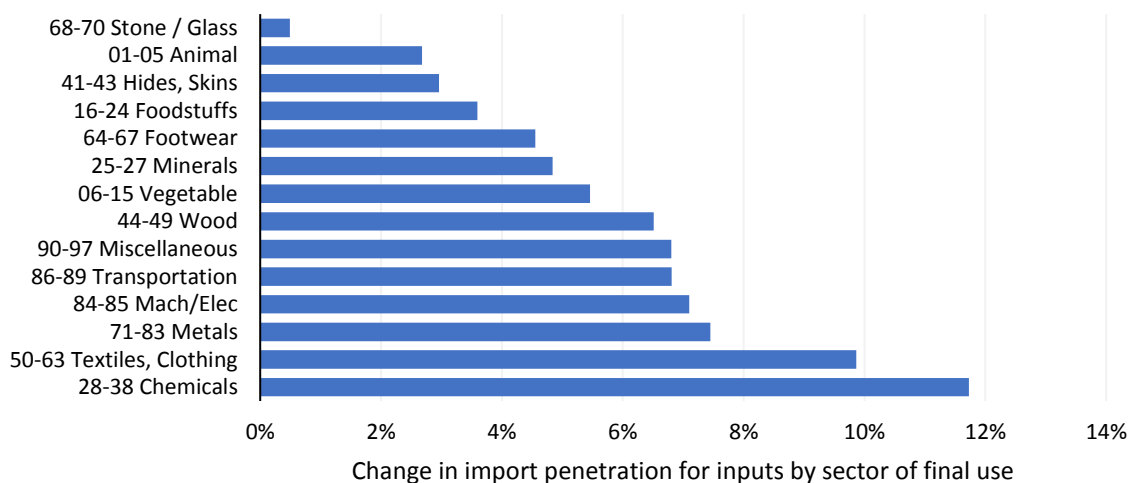
**Moreover, exposure to foreign buyers can help firms gain contacts that are useful in other markets.** However, the evidence on this is mixed. For example, membership in regional trading blocs often does

<sup>15</sup> This, for example, has been reported for Bangladesh. After acceding to the Everything but Arms scheme of the EU, Bangladeshi exporters found it easier to export not only to the EU but also to third markets, since they had already paid the fixed costs of exporting, and the jump to securing additional partners was easier to make.

not lead to increases in exports to the global market. It is possible that Pakistan’s exports to China did not lead to export success elsewhere because the types of products Pakistan exports to China are those in which Pakistan already has an established comparative advantage (more than half are textiles and clothing).

**Channel 3: Cheaper, more varied, and better intermediates from China.** Pakistani firms that had access to more inputs from China to produce their exports gained competitiveness with the rest of the world. Anecdotal evidence points to links between integration and competitiveness. For example, by increasing imports of polyether from China, Pakistani exporters of electric accumulators (batteries) improved their position to export to Afghanistan. This finding is in line with the evidence from other countries that trade can improve firm performance through access to a wider variety of intermediates at better prices, or of better quality. But how generalized were these gains? Regression analysis shows that sectors that experienced an increase in the availability of inputs from China between 2005 to 2016 enjoyed increases in RCA, export growth, and global market share. A 1 percentage point increase in the share of inputs from China in total purchases of inputs from 2005 to 2016 boosted export growth in that sector by 4.7 percent and the global market share by 1 percentage point (see regression results in Technical Appendix 7.4). As shown in Figure 11, the sectors that experienced the largest increase in inputs imported from China included plastic and rubber, chemicals, textiles and clothing. This channel is particularly important given the composition of Pakistan’s imports from China: since 85 percent of imports corresponded to industrial supplies and machinery, the CPFTA should have helped domestic firms reduce production costs. Additionally, Pakistan’s agriculture sector has benefited from increased imports of nitrogen, phosphorus, and potassium fertilizers from China.

Figure 11: Change in Chinese import penetration for inputs by sector.  
Several Pakistani sectors benefited from increased inputs from China



Source: Authors’ calculations based on UN Comtrade and UTAS

**The trade preferences bilaterally granted between China and Pakistan have been catalytic in facilitating integration of Pakistani firms into regional and global value chains through cheaper available inputs for Pakistani exporters to third countries.** The results presented above show how the CPFTA created trade

with other partners, as firms faced lower costs of production (due to cheaper inputs from China), allowing penetration to other markets.<sup>16</sup>

## Tariffs on inputs and productivity

**Tariffs on intermediate inputs are particularly detrimental of firms' efficiency.** Tariffs create a wedge between the world price of a product and its domestic price. By increasing the price of the imported input relative to domestic inputs, an input tariff artificially alters firms' technology choices, affecting their input mix and production efficiency. For example, high tariffs on synthetic fibers prevent Pakistani apparel producers from competitively producing certain sportswear in high demand or force them to find an alternative input that is domestically available. The importance of this channel, that links tariffs with efficiency, has been identified in several studies across the world. Results for Indonesia, China and India, for example, have found that input tariff reductions have positively affected the efficiency of firms using these inputs in downstream sectors.<sup>17</sup>

**In Pakistan, tariffs on inputs have been increasing, reducing firms' efficiency - particularly that of locally owned firms.** When we examined productivity patterns of publicly listed firms in Pakistan for the period 2012-2017, we found a significant negative overall effect of input tariffs on firm total factor productivity. Our estimates indicate that a one-standard deviation increase in input tariffs (0.18 percentage points in our sample) induces a decrease in productivity of 0.9%. Most sectors experienced an average increase in upstream tariffs. Back of the envelope calculations suggest that the largest positive effects were experienced by the chemical sector, where the average decrease in tariff over the period is associated with a 0.2% increase in productivity. On the other hand, the highest average increase in tariffs was experienced by the metal sector and is associated to a -0.7% decrease in productivity (see Technical Appendix for a description of the methodology).

**The negative effects of tariffs on inputs on firm's productivity are larger for domestic-oriented, and smaller firms.** When we consider the effect of upstream trade costs separately for domestic and foreign firms, we see that the correlation for the full sample is driven by domestically owned firms. We also find a significant negative effect for non-exporting firms and for relatively smaller firms (those that display sales below the median, within the group of listed firms). Both results are related to the fact that an increase of tariffs upstream can act as a constraint on smaller firms, reducing their productivity. Large exporters, instead, are likely to be more able to benefit from duty-free access to imported inputs.

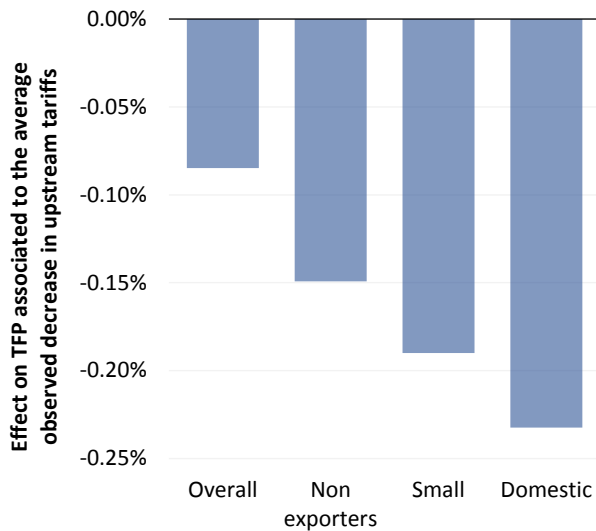
Figure 12: Higher upstream tariffs are associated with a decrease in TFP in downstream sectors

**In principle, duty-exemptions or duty refunds are available for exporters of any size.** In

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<sup>16</sup> A somewhat similar pattern was unveiled for Bangladesh when the EU granted duty free and quota free access under the Everything but Arms (EBA) initiative in 2001. While Bangladeshi exports to the EU increased substantially, so did export to other destinations: as firms overcame the fixed cost of producing and exporting, they started producing for other markets. See World Bank (2019) "Trading for Development: World Development Report".

<sup>17</sup> See Amiti and Konings (2007) for Indonesia, Yu (2014) for China, or Khandelwal and Topalova (2011) for India.



Source: Lovo and Varela (2020)

practice, securing them is costly for firms due to administrative burdens, or delays – which add to their financial costs.<sup>18</sup> In addition, to benefit from a customs duty exemption, a firm needs to import its inputs directly, which is more likely for large exporters. Therefore, it is likely that small firms may opt out of using the exemption mechanism. Indeed, almost 75 percent of all customs duty exemptions are claimed by the largest 100 exporters in Pakistan (World Bank, 2016).

## Tariffs and COVID-19

*This section presents a snapshot on the role that import duties have in facilitating access to COVID-19 essentials, both by reducing the prices of these goods and by encouraging a domestic supply response. It argues that (i) the initial response of the Government of Pakistan in terms of eliminating import duties for 61 COVID-19 essentials was crucial in a first stage, and (ii) that to encourage domestic production, an assessment of tariff changes along the whole value chain -particularly for PPE, where Pakistan has a comparative advantage- is needed.*

### **The COVID-19 pandemic has changed the cost structure of many industries – among many other things.**

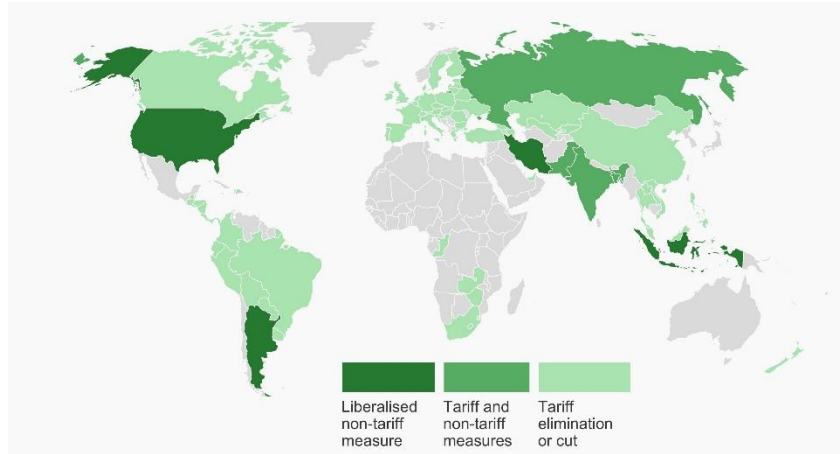
Before COVID-19, health protective equipment such as masks, gloves and suits were considered final products consumed mainly by health personnel and a few other industries. This changed with the outbreak of the pandemic. Most companies are now being encouraged or even mandated to provide sanitary protective equipment for their workers, changing the necessary inputs for producing goods or providing services. Moreover, the sudden and large increase in demand for personal protection products, coupled with a slow supply response, has resulted in price surges, making it even more burdensome for companies and hospitals to equip their workers. Import duties on these items contributed to further increase costs.

**The Government of Pakistan has taken an important step the right direction by joining other 76 countries in temporarily suspending all tariffs on COVID-19 essentials.** The temporary suspension introduced on March 20<sup>th</sup> through SRO 235(I) 2020 applied to 61 final goods and will be in place for a period of three months with the possibility of an extension if indicated by the Ministry of National Health,

<sup>18</sup> In principle, Pakistani exporters have access to duty suspension schemes for their imported intermediates, such as the Duty and Tax Remission on Exports (DTRE). In practice, approvals for remission can take up to 60 days, twice the time specified in the regulations. For that reason, only a small portion of textile and apparel exporters use that scheme. Other countries have introduced more efficient duty suspension schemes for imported inputs used for exporting. In Bangladesh, for example, obtaining approval for duty suspension on intermediates takes an average of 24 hours, and about 90 percent of textiles and apparel firms use the scheme. See World Bank (2019) “Trading for Development: World Development Report”, and McKenna, Rocha and Varela (2020).

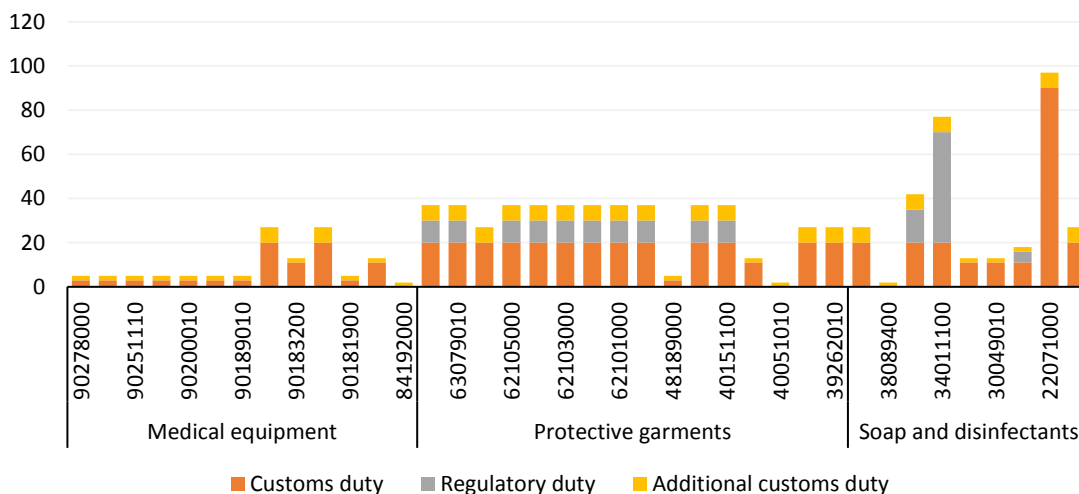
Services, Regulation and Coordination. These import duty eliminations helped increase affordability of what is necessary to deal with the pandemic. This measure is in line with what 76 other countries all over the world have done (Figure 13).<sup>19</sup> Figure 14 shows the pre-pandemic tariffs on a group of products that have become essential since the outburst of the pandemic – some of which are included among the 61 items mentioned above.

Figure 13: Countries that lifted import barriers for COVID-19 essentials (as of April 12<sup>th</sup>, 2020)



Source: Media reports, assembled by the Global Trade Alert team, University of St. Gallen, Switzerland. 12<sup>th</sup> April 2020.

Figure 14: Tariffs on final products needed for the COVID-19 pandemic



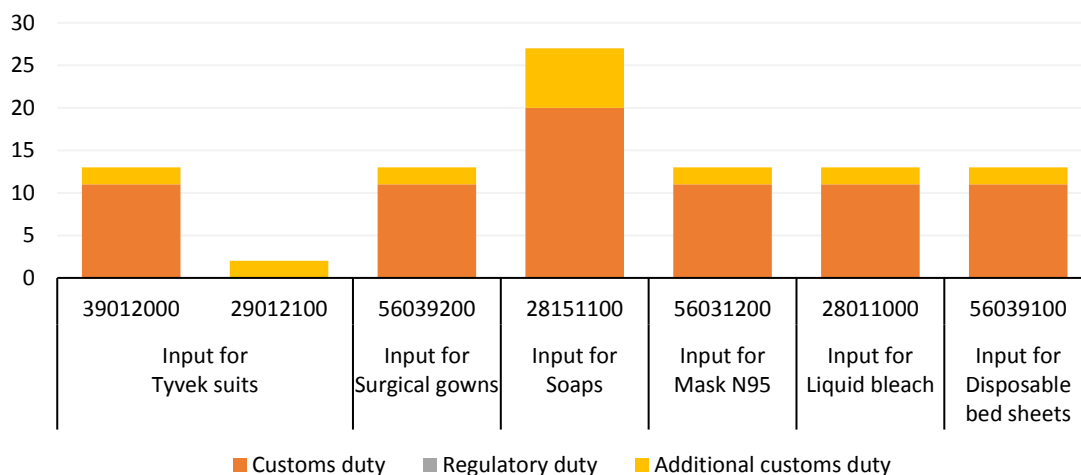
Source: own elaboration based on Pakistan's tariff schedule.

**Encouraging domestic production of COVID-19 essentials to take advantage of soaring demand – both at home and abroad, requires examining the import duty structure along the whole value chain.** If a domestic industry of protective equipment is to prosper, import duties on inputs need to be reduced. As

<sup>19</sup> Resolution S.R.O235(I)/2020 - Exemption of Customs duty, Regulatory duty and additional Customs duty on medical and testing equipment regarding outbreak of COVID-19. Available at: <https://fbr.gov.pk/covid-19/152294>.

a response to the COVID-19 pandemic, many governments have restricted their exports of medical equipment. The most common measure has been to restrict exports of protective garments, mainly masks and respirators, by imposing export bans.<sup>20</sup> Given that the main exporting countries of these products have imposed non-tariff restrictions, lowering tariffs on the final products will not be enough to help Pakistani firms and consumers get the necessary goods at a low price.

Figure 15: Tariffs on intermediates needed to produce protective equipment and disinfectants



Source: own elaboration based on Pakistan’s tariff schedule.<sup>21</sup>

**As a response to the international scarcity of these products, many domestic firms re-purposed production into these scarce products or close substitutes.** Examples of these initiatives include the production of Tyvek suits, surgical gowns, bed sheets, soap, and bleach. Figure 15 shows, through a few examples, that there is still room for cutting on the costs of vital inputs by reducing tariffs. Lowering tariffs on these essential inputs would help the domestic firms pick up production, both speeding recovery of economic activity and reducing the input costs for the rest of the industries. In addition, it is necessary to support firms through the provision of information on compliance with national and international standards required for these items to be successfully commercialized.

## Tariff policy and institutional design

**The recently approved National Tariff Policy, that brings trade policy setting under the National Tariff Board, explicitly recognizes the impact of tariffs on export performance and is a step towards considering tariffs as a tool to reduce trade costs.** On 19th November 2019, the Federal Cabinet approved the first-ever National Tariff Policy (NTP) with the objective of “employing import tariffs for industrial development and export growth”. Under this new institutional arrangement, tariffs are viewed as an “instrument of trade policy rather than revenue generation”, an important step forwards in aligning tariff policy and export promotion. The explicit stated objectives of reducing anomalies in the tariff structure and of making the tariff structure predictable are all steps in the right direction.

<sup>20</sup> Pakistan has also introduced export bans, currently applying to the exports of N95 masks.

<sup>21</sup> The data used to construct this graph included in a table in the Data Appendix.

**While the novel tariff policy addresses the input channel of the ‘import tariff - export performance’ link, it is crucial that it is gradually followed by a reduction on final goods.** As discussed in previous sections, cutting on raw materials and intermediates is beneficial for productivity and export competitiveness via reduced upstream tariffs, a fact correctly interpreted by the NTP guidelines. However, it is also important that these reductions on upstream tariffs are gradually coupled with reduced tariffs on final products to avoid the negative impacts of increased effective protection on export performance.

**Designing effective tariff policy that fosters development will require a skilled team and quality data.**

The National Tariff Policy has set important and highly demanding objectives among its foundation principles. The National Tariff Policy will be setting the rules aiming to achieve “time-bound ‘strategic protection’ to the domestic industry during the infancy phase” and to promote “competitive import substitution through time-bound protection”. The effectiveness of these kind of policies is highly contingent on the details of the design. Endowing the National Tariff Policy with the necessary human resources and the infrastructure for data collection and processing is a necessary condition to design quality interventions and correctly evaluate them.

## Conclusions and recommendations

**This note looked at the role that import duties play in Pakistan, with a focus on their impact on export performance and productivity.**

**Five main messages emerged from the analysis.**

**First, import duties in Pakistan perform a dual role.** They contribute to a substantial portion of tax revenues – higher than expected given the country’s level of development. They also contribute to protect specific sectors from import competition. This is evidenced by the marked cascading observed in the import duty structure – substantially more marked than observed in peer countries. It is also observed by measures of effective protection.

**Second, import duties are an export tax.** They induce firms to sell in the domestic market, by making the domestic market more profitable than export markets. At the same time, when they are applied on inputs necessary to produce other goods, they increase production costs, and restrict technological choices of firms.

**Third, evidence for Pakistan shows that import duties, particularly on intermediates and raw materials, have negatively affected economic performance.** Two pieces of evidence are presented. First, a close examination of the evidence from the China-Pakistan FTA liberalization process shows that export sectors in Pakistan that relied more intensively on inputs that increasingly came from China at lower prices (due to the tariff reductions), performed better at exporting to third countries. In a way, the China-Pakistan FTA facilitated integration of Pakistani firms into regional and global value chains. Second, we looked at the link between import duties on inputs and firms’ productivity. Results show that import duties hurt firms’ productivity, especially of small and domestic oriented firms. While large firms benefit from duty exemption schemes available for exporters, smaller firms can rarely make use of these instruments given the complexity of the application processes.

**Fourth, tariff policy also plays a role in the context of the COVID-19 pandemic.** They affect affordability of essential items and the capacity of the private sector to respond to increased demand at home and abroad (via increased production costs).

**Fifth, the new tariff policy institutional arrangement is an important step forward.** The creation of the National Tariff Policy and the recognition of the role of tariffs on production costs are important achievements in terms of improving the institutions that govern trade policy.

Four recommendations emerge from this analysis.

**First, introduce simplicity, transparency and predictability in tariff policy making.** Tariffs, and other import duties, play a key role in allocating resources. To avoid unintended consequences of ad-hoc changes in tariffs, regulatory duties, and additional customs duties, it is crucial for the National Tariff Board to commit to a simple and transparent tariff structure, with low average tariffs and minimum dispersion.

**Second, reduce import tariffs on inputs, but gradually reduce those on final goods too.** The analysis presented in this note show the key role that import duties play on increasing costs and limiting access to



foreign knowledge embedded in imported inputs. Yet, reducing input tariffs while keeping tariffs on final goods high (cascading) introduces an anti-export bias that ultimately leads to lower productivity growth.

**Third, simplify processes for accessing duty exemption schemes for exporting firms.** Private sector consultations reveal that having access to duty exemption schemes requires a complex and lengthy process. This tilts these schemes in favor of larger firms that have the capacity to devote resources for these purposes. The analysis presented in this note tends to validate this anecdotal evidence. While import duties on inputs do not affect the productivity of larger firms (that can secure these imported inputs at world prices), they do affect that of smaller firms. Automation to reduce arbitrariness at any point in the process will help small firms have better access to these schemes.

**Fourth, equip the National Tariff Board with the skills and data needed to make evidence-based policy decisions.** The recently approved National Tariff Policy, that brings trade policy setting under the National Tariff Board, is a great step towards considering tariffs as a tool to reduce trade costs, rather than one to increase revenues. Yet, as the analysis presented here reveals, because tariffs affect firms' cost structures along their whole value chain, tariff setting is a complex undertaking, requiring highly skilled personnel with access to quality data. Therefore, it is crucial that, as a complement to the set-up of the National Tariff Board, the National Tariff Commission is equipped with the right skills and data to ensure evidence-based policy making.

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## Technical Appendix

### Calculating upstream (input) tariffs using UTAS

UTAS is a World Bank tool that allows policy makers to simulate the impact of tariffs on production costs across sectors in an economy and perform comparative static analysis for different tariff structures based on a simple partial equilibrium framework (Eberhard-Ruiz et al. 2020). It combines I/O data with detailed product level tariff data to establish average output tariff rates for each sector specified in the I/O table. To do this, UTAS draws on a series of pre-set concordances tables that establish how product level tariff schedules match with more aggregate sector level data of I/O tables. For each I/O sector, the tool then calculates an input tariff ( $it_i$ ) reflecting the total incidence of all intermediate input tariffs on sector  $i$ 's production costs as follows:

$$it_i = \sum_{j=1}^J w_{ij} t_j \quad (1)$$

where the variable  $w_{ij}$  stands for the weight of upstream sector  $j$  in sector  $i$ 's total production and  $t_j$  stands for the simple average of all ad-valorem tariffs on products that belong to input sector  $j$ .

Relying on country-specific input-output tables from the Global Trade Analysis Project (GTAP) and UN TRAINS data for tariff schedules, we used UTAS to build an unbalanced panel capturing the incidence of tariffs in 115 countries from 1995 to 2018. Specifically, we used the data generated in UTAS to calculate country-wide input and output tariff incidence measures as follows:

$$IT_{ct} = \sum_{i=1}^I \alpha_{ci} it_{cit} \quad (2)$$

$$OT_{ct} = \sum_{i=1}^I \alpha_{ci} t_{cit} \quad (3)$$

Where  $\alpha_{ci}$  denotes sector  $i$ 's respective share in total value-added of country  $c$ , and  $it_{cit}$  and  $t_{cit}$  defined analogously to equation (1) above.  $IT_{ct}$  and  $OT_{ct}$  therefore capture the average incidence of tariffs in an economy via the input and the output channel respectively. The final step in building our database involved combining these measures with countries' export data which we retrieved from UN Comtrade. Summary statistics are presented for different periods in the table below.

Summary statistics					
	No. of countries	Mean	SD	Min	Max
Exports 1995-2006	114	16.0	2.1	11.0	20.3
Exports 2007-2018	114	17.0	2.0	12.8	21.3
Input-tariff 1995-2006	114	1.0	1.0	0.0	4.6
Input-tariff 2007-2018	114	0.6	0.6	0.0	3.9
Output-tariff 1995-2006	114	3.9	5.0	0.0	40.2
Output -tariff 2007-2018	114	2.7	4.1	0.0	38.3

Data sources: UN COMTRADE database (<https://comtrade.un.org/>), Global Trade Analysis Project (<https://www.gtap.agecon.purdue.edu/>), UN TRAINS database (<https://trains.unctad.org/>).

## Calculating effective rates of protection using UTAS

The effective rate of protection of sector  $i$  is calculated as follows:

$$ERP_i = \frac{ot_i - it_i}{va_i}$$

Where  $ot_i$  is sector  $i$ 's simple average tariff,  $it_i$  is sectors  $i$ 's input tariff (calculated as indicated in section 0) and  $va_i$  is the share of value added in sectors  $i$ 's total output.

## Assessing the cross-country impact of tariffs on export performance via input and output channels

To estimate the impact of tariffs on countries' export performance via input and output channels we estimated the following regression models:

$$\text{LogExports}_{ct} = \beta_1 IT_{ct} + \beta_2 IT_{ct-1} + \mu_c + \delta_t + u_{ct} \quad (4)$$

$$\text{LogExports}_{ct} = \gamma_1 OT_{ct} + \gamma_2 OT_{ct-1} + \mu_c + \delta_t + u_{ct} \quad (5)$$

The coefficients  $\beta_1$  and  $\beta_2$  are estimates for the combined impact of input tariffs on a country's export performance in year  $t$  and  $t - 1$  respectively. Analogously,  $\gamma_1$  and  $\gamma_2$  are estimates for the combined effect of output tariffs on a country's export performance in year  $t$  and  $t - 1$ . To account for time-invariant differences in export performance across countries and for changes in economic conditions affecting exports of all countries equally we control for country fixed effects  $\mu_c$  and for time-fixed effects  $\delta_t$ . Results are reported in the table below.

Regression results for economy-wide effects				
	(1)	(2)	(3)	(4)
Input Tariff t	-0.0613 (0.0342)*	-0.0995 (0.0573)*		
Input Tariff t-1	-0.0703 (0.0352)**			
Output Tariff t			-0.0102 (0.0077)	-0.0140 (0.0109)
Output Tariff t-1			-0.0100 (0.0075)	
Country-FE	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes
Observations	2,014	2,130	2,014	2,130

## Comparing the impact of input tariffs on exports across sectors

To test for possible differences in the impact of input tariffs on exports across sectors, we examined export performances at the sector level within countries based on the following regression model:

$$\text{LogExports}_{cst} = \beta_1 it_{cst} + \beta_2 it_{cst-1} + \mu_{cs} + \delta_{ts} + u_{ct} \quad (6)$$

Equation (6) uses the sector specific input-tariffs  $it_{cst}$  that we obtained from UTAS (see equation (1) of **Error! Reference source not found.**) for each GTAP sector. Therefore, rather than establishing the impact of input tariffs at the country level, as we did in equation (4) of **Error! Reference source not found.**, here examine how sectors' export performance varies within countries in response to changes in the incidence of input tariffs at the sector level.

We implemented the regression in equation (6) by first pooling all sectors together, and then comparing the following four groups of GTAP sectors separately: agricultural products (GTAP sectors 1-14), processed foodstuff (GTAP sectors 19-26), light manufacturing (GTAP sectors 27-39), heavy manufacturing (GTAP sectors 40 to 45). Results are presented in the table below.

Export performance across sectors					
	(1)	(2)	(3)	(4)	
	All	Agriculture	Foodstuff	Light manufact.	Heavy manufact.
Input Tariff t	-0.0014 (0.0008)	-0.0059 (0.0125)	0.0010 (0.0011)	-0.0399 (0.0082)***	-0.0327 (0.0228)
Input Tariff t-1	-0.0010 (0.0007)	-0.0101 (0.0064)	0.0007 (0.0009)	-0.0251 (0.0060)***	-0.0544 (0.0241)**
Sector-year FE	YES	YES	YES	YES	YES
Country-sector FE	YES	YES	YES	YES	YES
Observations	68,581	21,776	15,070	25,271	7,445

## Estimating competitiveness effects of the China-Pakistan FTA

The underlying regressions for the scatters described in section 2.2 are below:

	RoW (1)	RoW (2)	RoW (3)
	$\Delta$ RCA	$\Delta$ log exports	$\Delta$ market share
$\Delta$ Import penetration CHN	-2.33** (1.15)	-1.10* (0.60)	-0.37** (0.17)
Constant	-0.03 (0.25)	0.49*** (0.13)	0.01 (0.04)
N	96	96	96
R-sq	0.042	0.034	0.048

Standard errors in parentheses. \* p<.1, \*\* p<.05, \*\*\* p<.01

The results described under ‘channel 3 – imported intermediates and export competitiveness’ emerge from these regressions:

	(1)	(2)	(3)
	$\Delta$ RCA	$\Delta$ log exports	$\Delta$ global market share
Availability of Chinese Inputs (Upstream)	6.82**	4.67**	0.99**
	(3.38)	(2.12)	(0.47)
Constant	-0.82***	-0.25	-0.1**
	(0.30)	(0.19)	(0.04)
N	96	96	96
R-sq	0.042	0.049	0.046

Standard errors in parentheses. \*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

### Estimating the relationship between trade costs in upstream sectors and firm productivity

We used data on public firms from the Financial Statements Analysis of Companies (Non-Financial) Listed at Pakistan Stock Exchange. The dataset contains balance sheet, income statement, and export flow data for 410 public in Pakistan over the period 2012-2017. We exclude from the analysis a total of 18 companies, which are either in the coke and petroleum or are state-owned companies. We match these data with the Orbis dataset from Bureau Van Dijk (BvD) to obtain information on foreign ownership defined by the presence of at least one direct foreign shareholder.

We estimate total factor productivity (TFPR) using the Akerberg, Caves and Frazer (ACF) (2015) methodology, which is based on a two-step estimation procedure that helps overcome the issue of functional dependence when the elasticity of labor is estimated in the first stage as done in Olley and Pakes (1996), and Levinsohn and Petrin (2003).<sup>22</sup> The choice of variables used to estimate productivity is constrained by the available data. Hence, we use total wages instead of the number of employees, which is usually used in productivity estimates. The lack of firm-level prices and employment prevent us from estimating a quantity-based productivity (TFPQ)<sup>23</sup>.

To establish whether there exists a causal relationship between firm productivity and trade costs in upstream sectors, we exploit the specific timing and the differential degree of tariff changes across

<sup>22</sup> Due to missing values, we were able to compute productivity for 352 firms.

<sup>23</sup> Foster et al. (2008) indicate that when using sector-level deflators, differences in plant-specific prices show up in TFP measures. In particular they distinguish between physical productivity (TFPQ) and revenue productivity (TFPR). TFPR tend to overestimate the productivity of firms producing higher price products while underestimating that of firms producing lower price (quality) product since real sales are obtained by using the same deflator at sector level. The authors, however, also show that traditional measures of TFPR and TFPQ are highly correlated.

upstream industries. We begin by constructing measures of forward linkages by computing weighted averages of conditions in all upstream sectors:

$$T_{st}^{UP} = \sum_s w_{sj} T_{jt} \quad (1)$$

Where,  $T$  are output tariffs in upstream sector  $j$ , obtained from the UN TRAINS database, and corresponding weights,  $w$ , are obtained from the GTAP input-output table and are given by the inverse Leontief coefficients (measuring direct and indirect requirements) a given manufacturing sector 's' accounted for the upstream sector 'j'. This allows us to get a sense of the importance that each upstream sector has in terms of input costs.

We then follow Amiti and Konings (2007) and regress total factor productivity of listed firms on our constructed measure of upstream tariffs. We estimate the following equation:

$$TFPR_{ist} = \beta T_{st}^{UP} + \gamma X_{it} + v_t + u_i + \varepsilon_{ist} \quad (2)$$

All our specifications include firm and time fixed effects and sector time trends. We also control for output tariffs in the downstream sector and for the share of exports at firm level. The model is estimated as a standard linear fixed effects estimator where standard errors are clustered at sector level.



## Data Appendix

Table 1. Upstream tariffs and effective rate of protection by sector

	Data used in Figure 3 Upstream tariffs (% of output value)			Data used in Figure 7 Effective rate of protection		
	CD	RD	ACD	2009: CD (UN TRAINS)	2018: CD (UN TRAINS)	2019: CD, RD, ACD (Customs)
Paddy rice	6%	1%	1%	6%	7%	8%
Wheat	7%	1%	15%	-5%	-4%	57%
Cereal grains n.e.c.	2%	1%	2%	3%	4%	10%
Vegetables, fruit, nuts	6%	2%	6%	21%	9%	35%
Oil seeds	2%	1%	1%	0%	6%	17%
Sugar cane, sugar beet	2%	1%	0%	1%	2%	3%
Plant-based fibers	1%	1%	0%	-3%	2%	-1%
Crops n.e.c.	3%	1%	1%	7%	7%	12%
Bovine cattle, sheep and goats, horses	2%	1%	1%	3%	2%	3%
Animal products n.e.c.	5%	2%	1%	-3%	-3%	7%
Raw Milk	1%	0%	0%	-2%	-1%	-3%
Forestry	2%	1%	0%	9%	10%	17%
Fishing	5%	1%	4%	18%	2%	39%
Oil	1%	1%	0%	-1%	4%	8%
Gas	3%	1%	0%	1%	3%	9%
Minerals n.e.c.	3%	1%	0%	10%	5%	10%
Bovine meat prods	5%	2%	0%	1%	8%	32%
Vegetable oils and fats	3%	3%	1%	11%	6%	25%
Dairy products	10%	4%	10%	99%	64%	165%
Processed rice	8%	1%	0%	41%	47%	58%
Sugar	6%	2%	6%	76%	67%	123%
Food products n.e.c.	11%	3%	18%	340%	251%	245%
Beverages and tobacco products	29%	3%	4%	160%	145%	167%
Textiles	9%	3%	2%	58%	48%	77%
Wearing apparel	13%	5%	6%	123%	92%	185%
Leather products	8%	3%	7%	27%	26%	77%
Wood products	10%	3%	3%	60%	48%	76%
Paper products, publishing	8%	3%	1%	45%	41%	58%
Petroleum, coal products	4%	2%	0%	41%	36%	79%
Chemical, rubber, plastic products	5%	2%	1%	35%	28%	40%
Mineral products n.e.c.	9%	3%	3%	47%	36%	66%
Ferrous metals	8%	2%	7%	26%	26%	62%
Metal products	11%	3%	3%	54%	48%	72%
Motor vehicules and parts	27%	4%	4%	114%	114%	143%
Machinery and equipment n.e.c.	5%	2%	2%	41%	29%	30%
Manufactures n.e.c.	7%	2%	5%	72%	54%	121%
Electricity	4%	2%	0%	-10%	-12%	-8%

Note. CD: Customs duty; RD: Regulatory duty; ACD: Additional customs duty.

Table 2: Tariffs on inputs to produce some Covid essentials

HS8	Description	Input for	CD	RD	ACD	TOTAL
39012000	Polyethylene having a specific gravity of 0.94 or more	Tyvek suits	11	0	2	13
29012100	Ethylene	Tyvek suits	0	0	2	2
56039200	Nonwovens nes weighing 25-70g/m2	Surgical gowns	11	0	2	13
28151100	Sodium hydroxide (caustic soda) solid	Soaps	20	0	7	27
56031200	Nonwovens, man-made filaments weighing 25-70g/m2	Mask N95	11	0	2	13
28011000	Chlorine	Liquid bleach	11	0	2	13
56039100	Nonwovens nes weighing <25g/m2	Disposable bed sheets	11	0	2	13