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Trade to aid: EU's temporary tariff waivers for flood-hit Pakistan

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ABSTRACT

In this paper, we study the effectiveness of the first large-scale unilateral trade concessions as foreign aid for disaster relief, i.e., EU tariff waivers on goods heavily exported by Pakistan, which was severely hit by the 2010 floods. Using a triple-difference approach and a synthetic control approach, we find that the tariff waivers substantially increased Pakistan's exports to the EU. The export hike occurred within a few months after the waivers became effective, and did not significantly depress exports by competing countries. While the export boost brought greater employment opportunities in the tariff-waived industries, we find little evidence that the greater labor demands from trade were particularly beneficial to the areas most affected by the floods. Our findings suggest that trade policy may complement traditional means of foreign aid—but trade concessions alone may be inadequate, as the areas most affected by natural disasters may be poorly targeted.

1. Introduction

Does foreign aid promote the economic growth of recipients? This has been a central question in the literature of development and has been a subject of intense debate. Empirical findings are mixed, often clouded with concerns about sample selection, measurement errors and identification problems (see e.g. Roodman, 2007; Bazzi and Clemens, 2013; Qian, 2015).

While aid may foster growth by promoting investments in public infrastructure and human capital, critics are skeptical about the effectiveness of aid. They worry that with the weak political institutions typical of less developed countries, aid may not be effectively translated into public investment (see e.g. Easterly, 2003; Svensson, 2003). In particular, the literature on foreign aid that has focused on the Official Development Assistance (ODA), which mainly consists of cash and in-kind transfers, shows that the evidence as to the effectiveness of ODA is weak at best; or, it shows that ODA may even adversely affect growth. For instance, ODA has sometimes been used for unproductive public consumption (Boon, 1996; Alesina and Dollar, 2000); it has also sometimes been used by recipient governments with weak political accountability to buy political support (Deaton, 2013); and it increases the incidence and duration of civil conflicts in conflict-prone regions (Crost et al., 2014; Nunn and Qian, 2014).

In this paper, we investigate trade concessions as an alternative means of aid to ODA. This form of foreign aid, while it has its own limitations, arguably does not have the drawbacks of ODA discussed above. For example, trade concessions do not transfer appropriable resources to recipient governments. Previous studies explored the impacts of preferential market access granted by the US for Africa and Vietnam. Frazer and van Biesebroeck (2010) find that, under the African Growth and Opportunity Act, lower tariffs to African countries increase African exports to the US by 28%. McCaig (2011) also documented the positive trade creation effects of US tariff cuts in reducing poverty in Vietnam especially for workers with a low level of education. These results suggest that trade concessions have the potential to be an alternative means of aiding post-disaster economic growth.

In 2010, Pakistan was hit by the most severe floods in its modern history. To aid the post-disaster recovery, the EU offered tariff waivers to a list of goods exported by Pakistan. The trade concessions became effective in late 2012 and constituted the first large-scale aid program in the form of trade concessions following a natural disaster. This paper evaluates the effectiveness of trade concessions as a foreign aid tool using the EU's temporary removal of tariffs to Pakistan in three respects: (i) whether the tariff waivers lead to trade creation without diverting exports from other countries to the EU; (ii) how soon the effect of the trade concessions materializes; and (iii) whether export expansions improve labor market outcomes such as earnings and employment.

While the EU's trade concessions to Pakistan were proposed as

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disaster relief immediately after the natural disaster, the tariff waivers became effective only after a lengthy delay in obtaining WTO approval. The timing of tariff waivers on the 75 products provided a trade-cost shock arguably exogenous to the performance of Pakistan's export sector. A difference-in-differences approach, comparing waived products to non-waived products before and after the trade concessions, seems a natural approach. However, one might be concerned that the selection of waived products reflects a differential trend of competitiveness in the related industries.

To address such concerns, we adopt a triple-difference (DDD) approach in our main specification. We compare the difference between waived and non-waived products exported to EU countries to the same difference of exports to non-EU OECD countries. On top of the usual before-and-after differencing, such additional differencing effectively removes differential trends between tariff-waived and non-waived products. In the estimation, we follow Frazer and van Biesebroeck (2010) to include a full set of fixed effects, namely importer-year, importer-product, and product-year fixed effects, allowing for maximum flexibility in our specification.

We supplement our triple-difference analysis with a synthetic control analysis using monthly Pakistan-to-EU export data. In the synthetic control analysis, we create a synthetic control mimicking the time series variation of aggregate exports of the 75 products with tariff waivers before the waivers became effective. The synthetic control is constructed as a weighted sum of export volumes of EU-bound, no-waiver products in the 21 Harmonized System (HS) sections.

Our synthetic control analysis provides a transparent way of visualizing how large the waivers' impact on the aggregate export volume of all waived products was, and how fast such impacts showed up in the data. The synthetic control analysis could also mitigate a concern that exports of waived products may not follow a common time trend as do the non-waived products to EU and to non-EU countries. This was especially important because the set of waived products was unlikely to have been selected randomly from among all Pakistan's exports.

We find that tariff waivers increased Pakistan's exports of tariff-waived goods to the EU by about 45% and the probability of entering a new destination by 5%. The export expansion appeared within two months after the tariff concessions became effective. Furthermore, we find no significant evidence that exports to the EU are diverted away from major textile and clothing exporting countries during the concession period. Our results indicate that the trade concessions had strong trade creation effects for Pakistan, without causing substantial trade diversion effects to individual competing countries.

We do not find evidence that the waivers also increased waiver goods' exports to non-EU destinations or that exports of non-waiver goods were affected. The tariff waivers increased Pakistan's export to EU amounts to about 0.3% of Pakistan's GDP in 2012. In the absence of a strong multiplying effect, the aggregate impacts seem modest. However, a segment of population may still benefit from the increase in exports of the waiver goods. To identify this effect, we further examine the labor market outcomes of households affected by the 2010 floods and households in areas with a share of employment in the textile, garment and leather industries, whose products account for most of the goods with tariff waived.

Using household survey data, we find that households in areas most severely affected by the floods experienced slower growth in earnings. On the other hand, household earnings in areas with high textile employment had greater earnings in 2013 than in 2012. The increase in earnings was highest for households with low education attainment, which is consistent with the fact that the textile industries on average employ more workers with low education than other sectors.

The household earnings increased mainly because of the greater employment opportunities, particularly for women, rather than because of higher wages. However, since textile industries tend not to concentrate in areas most severely affected by floods, the expansion in textile employment may not have been of particular benefit to households who lost most during the floods.

We investigate two related channels through which these flood-affected households may still be able to benefit from the rise in textile employment even if they do not live in areas with textile industries. One is internal migration. Changes in households' age dependency ratios, which are the ratio of non-working age members to working age members, may indicate temporary migration as a means of responding to labor market opportunities. A decrease in the household age dependent ratio in an area may suggest inflows of working-age population. While we find that the household age dependency ratio dropped in 2013 in areas with large textile employment, we do not find that the age dependency ratio has increased in flood-affected areas since 2010.

Flood-affected households may still benefit from remittance sent by families in the textile industries. However, while we observed greater remittance received by households in flood areas in 2010 and 2011, we do not find that these households received more remittance in 2013. Neither do we find households in textile-concentrated areas were sent out more remittance in 2013.

In sum, tariff waivers were effective in boosting Pakistan's exports, which created labor market opportunities for women and people with low education attainment. But no evidence suggests that the export performance of textile industries was particularly beneficial to people living in areas most affected by the 2010 floods.

The rest of this paper is organized as following. Section 2 describes the 2010 floods and the EU's responses. Section 3 analyzes the impacts of the EU tariff waivers on the exports from Pakistan as well as on those from competing countries. Section 4 carries out a synthetic control analysis on the monthly Pakistan-to-EU export data. Section 5 examines the labor market impacts of the tariff waivers. Section 6 concludes.

2. Background

In late July 2010, unusually heavy rainfalls were recorded across all provinces of Pakistan. The rainfalls resulted in severe flooding in the Indus River basin. The floods, which were by far the worst in Pakistan's modern history, submerged vast land areas, destroyed crops, and extensively damaged highways, railways, schools and other public infrastructure. Using data from the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), we map the extent of the floods in Fig. 1. The floods brought about 2000 deaths, affected 20 million people, and caused damage estimated at $9.5 billion (Guha-Sapir et al., 2016).

In September 2010, European leaders reached an agreement to assist Pakistan's recovery by temporarily waiving tariffs on 75 products. These products mainly included textile, clothing and leather products, which were heavily exported by Pakistan to the European Union (EU). The initial package that the EU submitted to the World Trade Organization (WTO) went through a series of changes in response to opposition from other competing countries.[1] A revised waiver request was finally approved in February 2012 and was effectively implemented from November 15, 2012 to December 31, 2013.[2] The value of tariff-waived products amounted to a quarter of Pakistan's total annual exports to the EU, which is Pakistan's largest export market. The normal *ad valorem* tariff rates for waived products ranged from 4% to 12.8%, averaging around 9.5% as weighted by the trade volume in 2012.

3. Tariff waivers and Pakistan's exports

We use Pakistan's annual HS 6-digit product-level export data to

[1] Due to the most favored nation (MFN) clause in the GATT, the EU cannot grant preferential treatment to Pakistan without WTO approval.

[2] See Khorana and Yeung (2012) for details.