

「The Effectiveness of Aid for Trade: What Can We Learn from Empirical Evidence?」

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Aid for Trade (AfT) Initiative was launched at the Ministerial Conference of the World Trade Organization (WTO) in Hong Kong in 2005. The main objective of the AfT is to help low-income countries well benefit from trade liberalization by mitigating supply-side and trade-related infrastructure constraints. The AfT consists of three categories: (i) economic infrastructure, (ii) building productive capacity, and (iii) trade policy and adjustment. The annual inflows of the AfT into recipient countries are growing over time, amounting to US\$40 billion in 2018, which is about 3 times as large as the early 2000s. Despite the enormous financial efforts, little has been known about how much or even whether the AfT really contributes to increasing recipient export performance. In this review I summarize the literature empirically examining the effectiveness of the AfT, and present important areas to be explored by future research.

Cali and Velde (2011) examined what types of the AfT promote recipient exports. They estimated the fixed effects model with a panel data for 2002-2007 covering 99 developing countries. The results suggest that overall, an elasticity of exports with respect to AfT is 0.03, mainly driven by economic infrastructure. The estimates suggest that a US\$86 million increase in AfT for economic infrastructure is associated with a US\$650 million increase in recipient exports after 1 year. Vijil and Wagner (2012) also found the significance of economic infrastructure as a key channel of aid-trade nexus.

Martinez-Zarzoso et al. (2017) investigated the heterogeneous trade-creating effects of the AfT among recipient countries. Their method involves estimating a quantile regression model with a panel data for 2000-2011 covering 124 developing countries. They found that the AfT promoted the recipient exports mainly for the lower quantile of the conditional distribution of exports, suggesting that countries that export less in volume benefit most from the AfT. While aid to improve trade policy and regulation is associated with higher exports for all quantiles, aid used to build infrastructure and

productive capacity are effective for lower quantiles only.

Helble et al (2012) explored whether the AfT promote imports to recipient countries (i.e., exports of donor countries), analyzing bilateral trade data covering 167 importers and 172 exporters for 1990-2005. They estimated an augmented version of gravity model using a fixed effects estimator. The results show that the AfT is more strongly associated with recipient exports than imports, suggesting that a 1% increase in AfT (of about US\$ 220 million in 2008) could lead to about US\$ 290 million of additional exports from recipient countries. Analyzing a year-recipient panel data for 1990-2010, Huhne et al. (2014) examined the effects of the AfT on recipient exports and imports, separately. The results show that the trade-creating effects of the AfT are statistically significant for both exports and imports, but the effects are larger for recipient exports. Estimating a gravity model with bilateral trade data for 2002-2010, Hoekman et al (2020) also found that the AfT promoted recipient exports, but not imports from donor countries. On the other hand, Nowak-Lehmann et al (2013) found evidence that the bilateral AfT increased donor exports to recipient countries but not vice versa.

One important avenue for future research is to analyze *what types of exports the AfT can promote*. More specifically, is the AfT effective in increasing the exports of manufacture goods, or agriculture products? This question really matters, because an industrialization is closely linked to economic developments. Despite its significance in examining the effectiveness of the AfT, prior research has not fully explored this issue.

The other important area in the literature is an identification strategy to estimate the causal effects of the AfT on recipient exports. The key empirical challenge is to disentangle the trade-creating effects of the AfT from unobserved factors. Most of existing studies have employed a fixed effects model that controls for time-invariant factors, such as colonial ties between donor and recipient countries. However, this approach cannot rule out the possibility that the estimated effects of the AfT would be biased by unobserved time-variant factors such as changes in aid policies in donor countries. To address this issue, an instrumental variable approach appears to be effective. Here, I propose to use the Bartik instrument that exploits inner sectoral structure of the AfT, applying Goldsmith-Pinkham et al (2020) to the aid-trade literature. The Bartik instrument is constructed by sum of AfT sectors of all recipient countries weighted by country-sector-period specific shares. Given that the Bartik instrument is relatively easy to construct and check the validity for exclusion

restrictions, the causal effects of the AfT could be estimated in more transparent manner.

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