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Aid for Trade and Export Performance of Recipient Countries: The Moderating Role of Institutions

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Abstract

Using dyadic trade data and bilateral aid for trade (AfT) figures from the OECD Creditor Reporting System (CRS) for a sample of 155 countries over the period 2002-2019, we implement a gravity analysis, to assess whether bilateral aggregate AfT and AfT for trade policy and regulation flows have managed to bolster exports of AfT-recipient countries to donors. We also examine if the institutional distance between recipients and donor countries affected the efficacy of AfT in promoting the former's bilateral exports. When accounting for the large heterogeneity amongst recipient countries, in terms of geographical location and income level, our investigation yields the following results: i) AfT flows tend to foster exports of recipients, both at the extensive margin (AfT augments the recipients' likelihood of exporting) and intensive margin (AfT stimulates the recipients' exports); ii) the trade-stimulating effect of AfT for trade policy and regulation is more pronounced than that of aggregate AfT flows; iii) institutional disparities between trading partners dampens the effectiveness of AfT in promoting exports at both margins of trade; and iv) the stimulating effect of AfT on trade in recipient countries varies with their geographical location and income level. Our findings suggest that i) allocating aid flows, notably the ones targeting trade policy reforms, are likely to speed-up the insertion of developing countries into world markets; and ii) strengthening governance in AfT-beneficiary countries and closing their institutional gap with donors would enhance the effect of AfT on their exports.

JEL Classification: F10, F14.

Keywords: Aid for trade, trade, institutions, governance, institutional distance, gravity model

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1 Introduction

Recognizing the central role of international trade in promoting economic growth and development, the World Trade Organisation (WTO) launched the “Aid for Trade Initiative” in 2005, with the objective of assisting developing countries in speeding up their integration into the world economy and to harness the benefits of international trade. Structural and capacity limitations in developing economies, particularly in Least Developed Countries (LDCs), impede the integration and competitiveness of these countries in global markets and undermine their liberalisation efforts, any potential benefits from trade policy reforms and increased market access.

The WTO defines the “Aid for Trade Initiative” as one that helps developing countries overcome these limitations and assists them to increase exports of goods and services, to integrate into the multilateral trading system, as well as to benefit from liberalised trade and increased market access.⁴

In response to the initiative, donor countries started devoting larger volumes of Official Development Assistance (ODA) to enhance the trade performance of recipient countries. Usually, ODA flows are considered part of the “Aid for Trade” (AfT), if they target projects or programmes identified by recipient countries’ national policies as trade-related development priorities.⁵

Accompanying the rise of AfT in the international aid agenda, a new stream of empirical research emerged, looking into the effectiveness of AfT flows. Two key findings stand out from the literature that explored the impact of AfT flows on recipient countries’ trade prospects. The first showcases the success of AfT flows in promoting trade relations of recipients (Vigil and Wagner, 2012; Hühne et al., 2014a; Ghimire et al., 2016; Ferro et al., 2017; Martinez-Zarzoso et al., 2017). The empirical analysis was usually couched in either one of two models: an export demand model (Hühne et al., 2014a; Hühne et al., 2014b; Ghimire et al., 2016; Ferro et al., 2017; Martinez-Zarzoso et al., 2017) and a gravity model (Helble et al., 2012; Ahn and Lee, 2016; Pettersson and Johansson, 2016). Mostly, there is evidence that AfT flows have significantly promoted recipients’ overall trade performance, as well as their trade with donor countries. The second reveals that this effect was not homogeneous amongst AfT-beneficiary countries. Indeed, several authors have disclosed disparities, in terms of the efficacy of AfT in impacting recipients’ trade, varying with their

⁴ OECD and WTO flyer on the “Aid for Trade Initiative”, available online at:

<https://www.oecd.org/dac/aft/45581702.pdf>

⁵ AfT flows are broadly classified under three main categories: (i) flows aiming at building trade policy and regulation capacity (AfT for trade policy and trade-related adjustment); (ii) flows targeting the development of productive capacity (AfT for building productive capacity); and (iii) flows with the objective of enhancing infrastructure (AfT for economic infrastructure). The first category of AfT includes all flows pertaining to trade policy administrative management, trade facilitation, enhancing regional trade agreements and multilateral negotiations, and trade-related adjustments. The second category regroups all flows related to economic sectors including agriculture, forestry, fishing, industry and mining. Finally, the third category covers all flows targeting infrastructure, like transport and storage, communications, energy, in addition to banking and financial services.

geographical location, development level, and openness (Brenton and von Uexkull, 2009; Ahn and Lee, 2016; Ferro et al., 2017).

In the light of the two major findings of the literature, our paper investigates whether the quality of institutions amongst recipient countries is one underpinning factor of the documented differences in the effectiveness of AfT in stimulating the latter countries' trade. Specifically, we explore the role of institutional differences between donor and recipient countries in moderating the effect of AfT on exports of recipient countries. We undertake this examination twice: once using aggregate AfT flows and once employing AfT flows aiming at building trade policy and regulation capacity (AfT for trade policy and trade-related adjustment - hereafter AfT for TP). Amongst the components of AfT, AfT for TP is particularly paramount for recipient countries' trade. Indeed, AfT for TP is designed to enhance the trade capacities of recipients, as it provides assistance to ministries and departments in charge of trade policy and planning, targets trade facilitation constituents and dispenses support in terms of multilateral trade negotiations as well as regional trade agreements.

Our investigation makes use of a sample of 155 AfT-beneficiary countries and 36 donor countries over the period 2002-2019 and uses data on i) AfT from the OECD Creditor Reporting System (CRS), ii) bilateral exports (from recipients to donors) from the BACI database of the "Centre d'Etudes Prospectives et d'Informations Internationales" (CEPII) and iii) the quality of institutions from the World Bank's Worldwide Governance Indicators (WGI) database. Our empirical strategy relies on a gravity-type equation (Mac Callum, 1995; Feenstra et al., 2001; Feenstra, 2002; Anderson and van Wincoop, 2003; Evenett and Keller, 2002; Santos Silva and Tenreyro, 2006). Given the likely endogeneity of AfT, we propose a two-stage approach where we first instrument AfT, then estimate its impact on bilateral exports. Moreover, since AfT flows would affect the fixed costs of exporting (i.e., costs of entering new markets), as well as the variable costs of exporting (i.e., costs of increasing exports volume), we look at the impact of AfT on both, the extensive and intensive margins of trade. When examining the latter impact, we opt for the Poisson Pseudo-Maximum Likelihood (PPML) estimator. As shown in Santos Silva and Tenreyro (2006), the PPML possesses numerous adequate properties, notably in the presence of zero-trade cases.

Our findings suggest that AfT flows (the aggregate flows, as well as AfT for TP) tend to foster exports of recipients, both at the extensive and intensive margin. Interestingly, the impact of AfT for TP flows is stronger than the one of aggregate AfT flows. We also find that institutional disparities between trading partners dampens the effectiveness of AfT in promoting exports at both margins of trade. Finally, the stimulating effect of AfT on trade in recipient countries varies with their geographical location and income level. In terms of policy recommendations, our findings suggest that i) strengthening governance in AfT-beneficiary countries and closing their institutional gap with donors would enhance the effect of AfT on their exports, and ii) increasing the amounts of AfT for TP disbursed by donor countries would be particularly effective in promoting recipients' exports.

Our paper contributes to the existing literature in multiple ways. First, our research creates a linkage between two active strands of the literature - the one that scrutinised the AfT/trade nexus and the one that looked into the institutions/trade connection - to examine whether the influence of bilateral AfT flows on bilateral exports is affected by the dissimilarity

in the quality of institutions between partner countries. Thus, we contribute to a relatively scant literature on the impact of institutions on the effectiveness of AfT flows in enhancing the exports performance of developing countries. Second, to the best of our knowledge, our study is the first to examine the possibility that the quality of institutions would modulate the effect of AfT flows on recipients' exports in a bilateral (i.e., gravity) setting. Third, compared to the general literature on AfT and trade, we use more recent data (2002-2019) and cover a larger set of countries. We also distinguish between total AfT and AfT for TP, in order to disentangle the impact of this specific type of aid on countries' export performance. Finally, our empirical strategy takes into account exports at both the extensive and intensive margins, whilst accounting for the endogeneity of the AfT flows and country heterogeneity, in terms of geographical location and income level.

The paper is organised as follows: Section 2 is an overview of the relevant literature on AfT, trade and institutions. Section 3 presents some stylised facts about the evolution of AfT flows between 2002 and 2019 and the distribution of these flows at the income and regional levels. Moreover, it explores the correlation between AfT, exports of recipient countries and institutional differences between donors and recipients. In Section 4, we lay out our estimation strategy and the data used. Section 5 presents and discusses the main findings. Finally, Section 6 concludes and highlights issues of policy relevance.

2 Literature Review

2.1 Aft and trade

A compelling majority of the surveyed empirical work on the relationship between AfT and trade performance has studied the impact of AfT flows on the trade relations of recipient countries (Helble et al., 2012; Vijil and Wagner, 2012; Ferro et al., 2014; Ghimire et al., 2016; Lemi, 2017; Martinez-Zarzoso et al., 2017). In this respect, the bulk of the research investigated the effect of AfT on the volumes of recipient countries' exports and imports, whilst some papers looked at the repercussions of AfT on the structure of exports and the quality of exports in recipient countries. Only a pinch of papers has considered the relationship between AfT flows and trade of donor countries (Pettersson and Johansson, 2013; Ahn and Lee, 2016). For the most part, the period covered by the previous research encompassed the early 2000s up to the latest year, where data was available; moreover, the selected sample was commonly composed of all AfT recipient countries and the OECD donor countries.⁶ From a methodological standpoint, the surveyed empirical works have been

⁶ As a measurement of AfT flows, researchers have typically opted for the sum of disbursed amounts in the three AfT-related areas: economic infrastructure, building productive capacity, and trade policy and regulations. In many cases, however, researchers have also investigated the effect of (at least) one of the three categories separately (Vijil and Wagner, 2012; Pettersson and Johansson, 2013; Ferro et al., 2014; Huhne et al., 2014a; Ghimire et al., 2016; Lemi, 2017; Martinez-Zarzoso et al., 2017; Wang and Hu, 2018), or some components of a particular category (Helble et al., 2012).

couched in one of two frameworks: an export demand model and a gravity model⁷. Moreover, except for Vijil and Wagner (2012), who used a cross-section approach, the reviewed papers implemented panel data techniques. By and large, results have showed that AfT flows have been successful in stimulating trade of recipient countries.

In what follows, we shed light on some of the previous papers that tackled the AfT/trade nexus, starting with the ones applying an export demand model, before exploring those that were cast in a gravity setting.

A number of papers have assessed the effect of AfT flows on recipient countries' exports. Ghimire et al. (2016) looked at the effectiveness of AfT in stimulating recipients' exports. They found that total AfT flows, as well as each of the three AfT categories, have exerted a positive and significant impact on recipient countries' exports. Martinez-Zarzoso et al. (2017) applied panel quantile regression to examine whether AfT flows have a differentiated repercussion across the distribution of recipient countries' total exports and their exports of goods and services. Regarding the exports of goods, their results showed that total AfT flows had a significant and positive effect across all quantiles, whereas their impact was statistically significant up to the median of the distribution of services exports. Moreover, their estimations revealed that AfT targeting trade policy and regulation has significantly affected total exports of recipients amongst all quantiles, whilst each of the other two AfT categories impacted total exports up to the median distribution of the latter. Gnangnon (2019b) turned the spotlight on the relationship between AfT flows and the exports structure of recipient countries. His findings showcased a significant and positive effect of AfT on two categories of recipients' exports: exports of goods that are not intensive in technology and exports of goods that are highly technology intensive.

In two papers published in 2014, Huhne and his co-authors explored whether AfT flows have contributed towards the strengthening of South-South trade (Huhne et al., 2014a) and trade between recipient and donor countries (Huhne et al., 2014b). The former paper shows evidence that total AfT flows, as well as AfT directed to infrastructure, have been influential in promoting South-South trade relations. Several findings stem from Huhne et al. (2014b). AfT flows, both in total and at a disaggregated level, have boosted exports/imports of AfT-recipient countries to/from donor countries. In addition, data suggests that the effect of AfT flows has been more significant in middle-income recipient countries and open economies, relatively to low-income and more closed recipient countries.⁸

⁷ The two frameworks are not the only settings that were used by researchers to look into the relation between AfT and trade. For instance, some researchers have assessed the effect of AfT on trade costs (Busse et al., 2012). However, export demand models and gravity ones have been the most widely used in the literature.

⁸ Two papers have investigated the possible relationship between a particular category of AfT flows and exports of recipient countries. Vijil and Wagner (2012) considered infrastructure-related AfT and its effect on recipient countries' exports, whilst implementing a two-step procedure. In a first step, the authors estimated an export model, where transport and communication infrastructure was shown to have a significant influence on AfT-recipients' exports. In a second phase, the authors assessed the main determinants of transport and communication infrastructure in AfT-recipient countries: AfT aimed at infrastructure was one of the significant

More recently, several authors have explored the implications of AfT on recipient countries' trade diversification. Gnanngnon and Roberts (2017) looked at the possible implications of AfT on recipients' exports diversification and quality. Their investigation reveals that AfT inflows contribute to the diversification of recipient countries' exports and tend to enhance their quality. Moreover, their results show that the effect of AfT on exports quality and diversification is larger in least developed countries (LDCs), compared to the rest of the recipients. In two papers, Gnanngnon (2019a) and Gnanngnon (2021), the author tackled the task of examining whether AfT inflows, as well as their cumulative amounts, promote the diversification of recipients' exports. In the first paper, the author found that yearly AfT inflows and their cumulative values help recipients in diversifying their exports. In the second study, findings suggested that AfT inflows, along with their cumulative levels, exert a positive impact on recipient countries services export diversification. In addition, Gnanngnon (2021) showed that the positive impact of AfT inflows on services export diversification is mostly the case in non-LDCs, with AfT inflows associated with an increase in the concentration of services export in LDCs. Using several measurements of import-commodity diversification and import-partner country diversification, Ly-My et al. (2021) considered the implications of overall AfT flows and each of their components on recipients' imports diversification. Their investigation revealed that all types of disbursed AfT flows are associated with a greater diversification of imports of recipient countries, regardless of how diversification is measured.

The effect of AfT on bilateral countries' trade has been the focus of a number of papers that have used a gravity empirical setting. Helble et al. (2012) considered four alternative measures of AfT, capturing a relatively narrow definition of AfT directed towards trade facilitation, examining their effect on recipients' exports and imports. Their findings suggest that the exports and, to a lesser extent, the imports of countries receiving trade facilitation-related AfT, have been impacted by AfT flows. In their 2013 paper, Pettersson and Johansson looked at the association between AfT flows and bilateral exports between donor and recipient countries. The authors distinguished between total AfT flows and each of the three AfT categories, whilst controlling for other types of official assistance. Their results reflect a positive and significant impact of AfT flows on donor countries and recipient countries' exports. Ahn and Lee (2016) shed light on the possibility that AfT flows would foster donor countries' exports to recipients. They examined this matter whilst differentiating between agricultural exports and non-agricultural ones. Their conclusions indicate that AfT outflows have succeeded in driving forward donors' exports to AfT-recipient countries, both in terms of agricultural and non-agricultural products. Lemi (2017) scrutinised the relation between AfT (as a whole and in each of its constituent categories) and African recipient countries' exports to and imports from donor countries. His study shows that AfT flows have bolstered African countries' trade with donors. Moreover, the positive and significant effect of AfT on

factors impacting infrastructure. Ferro et al. (2014) demonstrated that services-related AfT (intended for infrastructure and productive capacity building) has significantly contributed to the exports of manufactured products of recipient countries.

African countries trade holds across the four categories of traded goods that the author considered alternatively as the dependent variable of the model (consumer goods, capital goods, intermediate goods and raw material).

More recently, authors started examining the potential connection between AfT and export structure of recipients. Wang and Xu (2018) set out to study the relation between AfT and the quality of exports of recipient countries. To that end, they evaluated the effect of a number of determinants of the quality of AfT recipients' bilateral exports, amongst which AfT flows. Distinguishing between the three AfT categories, the authors found that AfT flows addressing trade policy and regulations, as well as economic infrastructure, have had the largest effect on the quality of exports of recipient countries. Wang and Hu (2018) also showed that the latter two AfT flows have helped recipient countries upgrade their positions worldwide over time with regard to the quality of their exports. Nathoo et al. (2021) assessed the effectiveness of AfT in supporting exports diversification, notably in sub-Saharan African countries. Their findings show that AfT flows have contributed to the diversification of exports of recipients, both at the intensive and extensive margins. Moreover, this result holds for most of the AfT sub-categories. The effect of AfT on vertical specialisation, measuring the bilateral backward participation of recipient countries with donors, was lately examined by Kim et al. (2022). They found that the effect of AfT on vertical specialisation hinges on the development level of recipients - specifically, AfT favours vertical specialisation in upper middle-income recipients.

2.2 Institutions, AfT and trade

Institutions are commonly designated as the set of formal means through which members of a society organise their interactions⁹ (Kostova et al., 2019). With the upsurge in works showing the relevance of good quality institutions on economic performance, trade specialists considered the implications of the quality of institutions on trade. From a conceptual standpoint, sound institutions are expected to foster trade opportunities by enhancing transparency and reducing uncertainties (de Groot et al., 2004; Martinez-Zarzoso and Marquez-Ramos, 2019), streamlining contract enforcement and alleviating frictions (Levchenko, 2007), and supporting an environment conducive to investment and productivity gains (Martinez-Zarzoso and Marquez-Ramos, 2019).

Moreover, a strand of the literature has highlighted the impeding effect of institutional dissimilarities on trade prospects amongst countries (Levchenko, 2007). Indeed, differences in the quality of the institutional infrastructure between countries are associated with higher costs and risks (Kostova et al., 2019). This reflects the fact that trading partners operating in countries with dissimilar governance environments are likely to face

⁹ This includes the set of rules, regulations and constitutions that prevail in a country. Additional informal channels can also impact the agents' behaviour and encompass conventions and behaviour norms. Those channels are often labeled informal institutions. In the present study, our primary focus is on formal institutions.

significant adjustment costs (de Groot et al., 2004). Ergo, trade flows are expected to be larger across countries with similar institutional quality.

Empirical analysis has led support to the hypothesised relation between institutions and trade, with, on one hand, strong evidence of a positive relationship between good governance and trade and, on the other hand, a confirmation of the trade-fostering effect of institutional similarities across partners. More often than not, authors have used the World Bank's Worldwide Governance Indicators as a measurement of formal institutions to assess the trade/institutions nexus. As was the case for the AfT/trade relationship, most of the studies were couched in a gravity model or an export demand setting. One of the early empirical investigations in this respect is that of de Groot et al. (2004), who assessed the impact of institutions and institutional distance on bilateral trade, using a gravity setting and a large sample of countries. Their results highlighted the importance of the quality of institution in boosting exports. The authors also found that institutional dissimilarities have a negative impact on exports¹⁰. Grouping sample countries into three categories, based on the quality of their institutions, Wu et al. (2012) examined whether differences in governance conditions affect international trade. Their key findings revealed that countries with the best institutions have the largest propensity to trade and tend to trade more with countries with analogous institutions. Turning the spotlight on New Zealand's bilateral exports to its Asian partners, Gani and Scrimgeour (2016) inspected whether the quality of institutions in the latter affects New Zealand's exports. Their investigation showed that weaker institutions in Asian partners are associated with fewer New Zealand exports. A recent inquiry undertaken by Martinez-Zarzoso and Marquez-Ramos (2019) made use of a large sample of countries and showcased the importance of sound institutions in partner countries to bilateral exports. Employing novel data on Colombian bilateral exports, Abreo et al. (2021) studied the repercussions of Colombian institutions on Colombian exports and whether institutional discrepancies between Colombia and its trading partners exert an influence on the former's exports to the latter. In most of the specifications of the estimated models, the authors found that institutions foster Colombian exports and that an increase in the institutional distance between partner countries and Colombia reduces Colombia's bilateral exports. Focusing on sub-Saharan countries, Bah et al. (2021) demonstrated the positive impact of the quality of institutions in sub-Saharan countries on their total exports. By and large, their key result remained valid when the authors looked into sub-Saharan disaggregated exports and, alternatively, considered services, merchandise and manufactured exports.

Building on the strand of the literature that sheds light on the significant impact of AfT on trade of recipient countries, as well as on the stream of research that has shown the importance of good governance in promoting trade, a number of authors have recently looked at the possible moderating effect of institutions on the effectiveness of AfT. The underlying logic is the as follows: good governance and sound institutions would minimise the risk of aid diversion and capture by elites. As a result, better institutions would enhance the efficacy of aid flows.

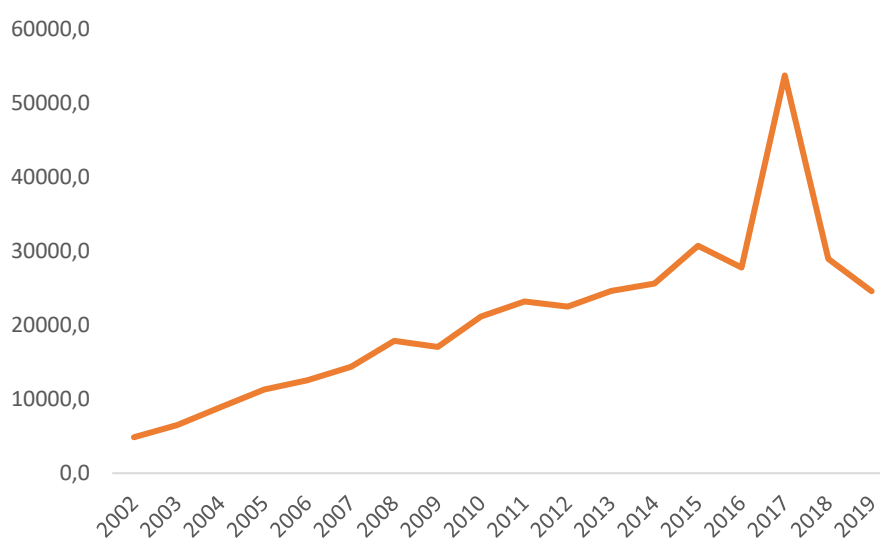
¹⁰ When the dissimilarities are significant enough.

To the best of our knowledge, Massa (2013) was the first to explore this avenue. Focusing on low and lower-middle income countries, Massa considered whether the efficacy of AfT for trade facilitation in boosting recipients' total exports is affected by their quality of institutions. Her analysis shows that the impact of AfT for trade facilitation on exports is significantly larger in recipients with better institutions. Tadesse et al. (2019) delved into the possibility that the dampening effect of AfT on bilateral trade costs facing recipient countries would be larger in countries with superior institutions. Using data on aggregate, manufactured and agricultural trade for more than 100 developing countries, the authors found that total AfT inflows help in reducing trade costs facing recipient countries (across the three trade categories) and that this effect is enhanced in countries with good institutions. In a recent paper, Gnangnon (2019c) examined whether the impact of AfT for trade policy and regulations on the volatility of tariffs in recipient countries hinges on the quality of institutions in the latter. His investigation revealed two key findings: AfT for trade policy and regulations is associated with lower tariff volatility in recipients with better institutions, and the moderating effect of institutions is larger in more developed countries.

3 Stylised Facts

Figure 1 depicts the evolution of total AfT flows between 2002 and 2019. Before the launch of the “Aid for Trade Initiative” in 2005, flows targeting trade-related matters had already been part of ODA but were not listed explicitly as AfT. In the year of launch of the initiative, the total value of AfT was USD 11.3 billion. AfT increased steadily to reach USD 30.71 billion in 2015, before slightly dropping to USD 27.74 billion in 2016. In 2018, the value of aggregate AfT reached a peak of USD 53.7 billion, before dropping to USD 24.6 billion in 2019.

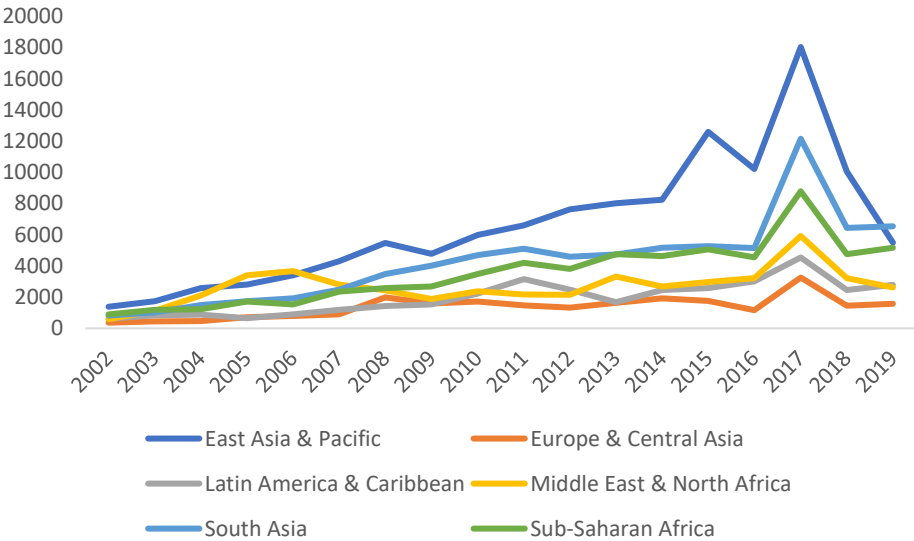
Figure 1: Evolution of aid for trade (in USD millions)



Source: Authors' own elaboration using the OECD dataset.

Figure 2 depicts the evolution of total AfT by the regional grouping of recipient countries. Aid flows allocated to East Asia and the Pacific are the highest across all regions. After a steady increase, these flows experienced a slight drop from USD 5.5 billion to USD 4 billion between 2008 and 2009. This could be the result of the financial crisis and the global recession that followed this crisis. AfT flows continued to increase steadily and reached USD 8.2 billion in 2014. Unlike the rest of the regions, East Asia and the Pacific benefitted from two peaks. The first was in 2015, where AfT flows reached an unprecedented USD 12.6 billion and the second was in 2017, where total AfT allocated to this region was as high as USD 18 billion. In the case of the MENA region, AfT was highest in 2006 (USD 3.7 billion). During this period, several MENA countries were carrying out reforms opting for a more open market with less restrictions on trade and investment (in line with their WTO commitments, as well as their Association Agreements with the EU). Hence, AfT flows could have been disbursed to support these trade and investment reforms. After 2006, AfT flows allocated to the MENA region decreased and remained amongst the lowest at the regional level. Finally, in 2017, the value of AfT witnessed a peak of USD 2.14 billion. AfT targeting South Asia and Sub-Saharan Africa was characterised by a steady increase between 2005 and 2016, before peaking in 2017. Finally, flows allocated to Latin America and the Caribbean and Europe and Central Asia are amongst the lowest throughout the studied period, with relatively modest increases in 2017 (USD 4.5 billion and USD 3.3 billion in 2017, respectively).

Figure 2: Evolution of aid for trade by region (in USD millions)

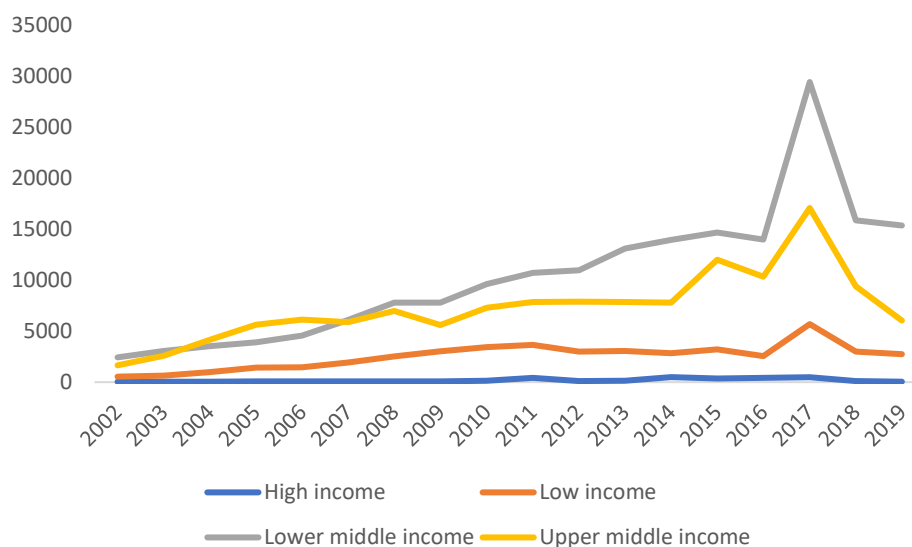


Source: Authors’ own elaboration using the OECD dataset.

In Figure 3, the evolution of AfT is illustrated by the income level of recipients. After the launch of the AfT initiative in 2005, funds allocated to lower middle-income countries began to pick up and remained the largest at the regional level, reaching as high as USD 29.4 billion in 2017. These are followed by funds directed to upper middle-income countries (USD 17 billion in 2017). At the same time, AfT targeting low-income countries is still low. Between 2005 and 2016, the value of these AfT flows did not exceed USD 3.7 billion, before increasing

to USD 5.7 billion in 2017 and then dropping again to the pre-2017 level in 2018 and 2019. Finally, funds targeting high income countries are negligible.

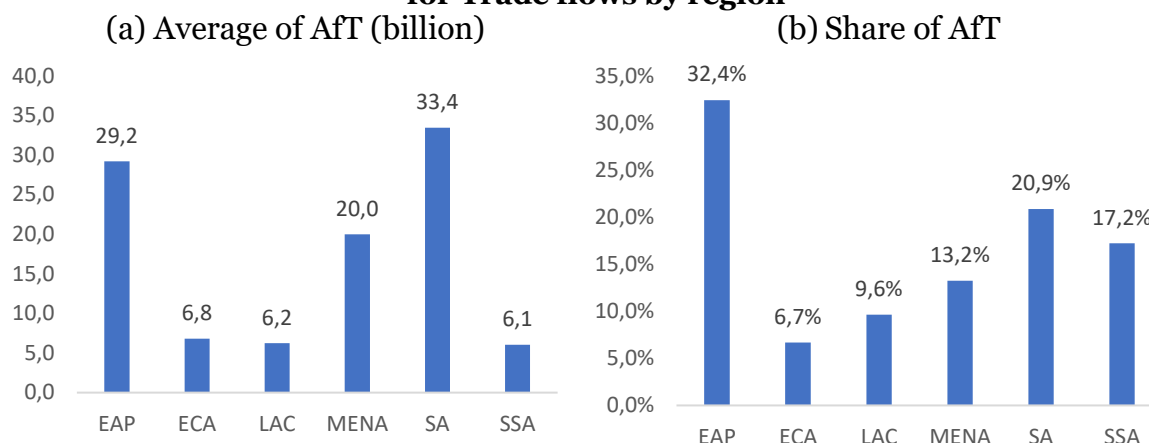
Figure 3: Evolution of aid for trade by income level (in USD millions)



Source: Authors' own elaboration using the OECD dataset.

In Figure 4, the average AfT value received over the 2002-2019 period is depicted by region and contrasted to the average share of each region in total AfT throughout the same period. On average, South Asia has received USD 33.4 billion, followed by East Asia and the Pacific (USD 29.2 billion) and the MENA region (USD 20 billion). However, the highest share of total AfT throughout the period studied is that of East Asia and the Pacific (32.4%), followed by South Asia (20.9%) and Sub-Saharan Africa (17.2%). Whilst Sub-Saharan Africa has - on average - received the lowest value of AfT, a recent surge in aid allocated to the region puts it into the third place in terms of share in total AfT. The surge of AfT directed towards the region since 2018 is remarkable. Most recent data suggests that Africa received over USD 3 billion in 2019. The value of AfT flows directed towards Africa and the MENA region increased with the launch of the AfT initiative in 2005, particularly to accompany serious trade policy reforms and related market adjustments pursued by many Arab and African countries during this period (for example, Association Agreements with the EU). However, this trend was followed by a plunge in MENA-directed flows between 2009 and 2010 and further drops in the years following the political turmoil in the region since 2011, whilst AfT flows remained generally higher and increased drastically for Africa, to accompany the eventual creation of the African Continental Free Trade Area (AfCFTA).

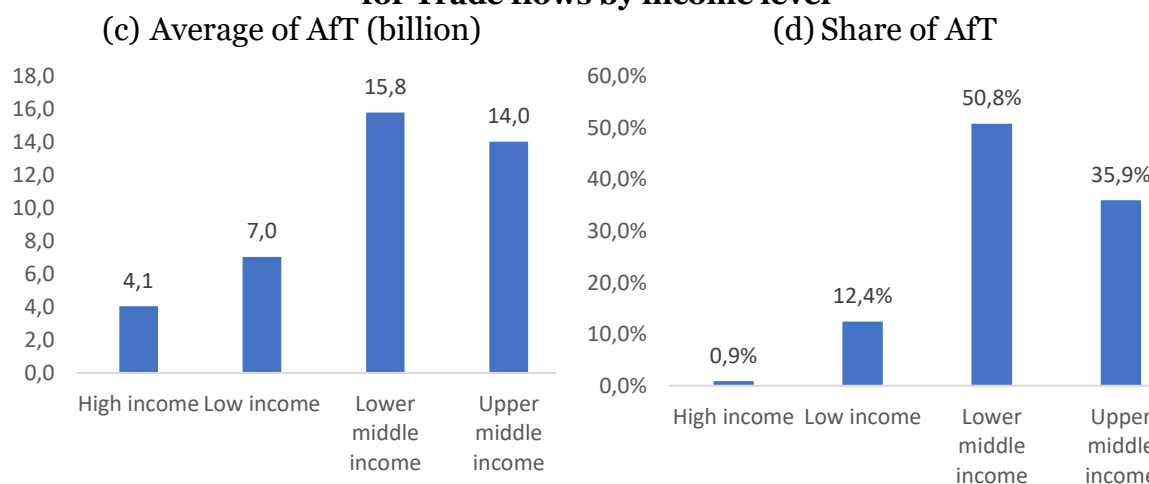
Figure 4: Average aid for trade and share in total Aid for Trade flows by region



Source : Authors' own elaboration using the OECD dataset.

Figure 5 illustrates the average AfT flows received by income group over the period 2002-2019, as well as the average share of each income group in total AfT throughout the same period. On average, upper and lower middle-income countries benefitted from the largest share of AfT. Lower middle-income countries received 50.8% of total AfT (on average USD 15.8 billion), followed by high upper middle-income countries (USD 14 billion, equivalent to 35.9%). Low-income countries only received 12.4% of total AfT flows, equivalent to USD 7 billion on average. Finally, high-income countries received a minor share of 0.9% of total AfT flows (equivalent to an average of USD 4.1 billion) over the period 2002-2019.

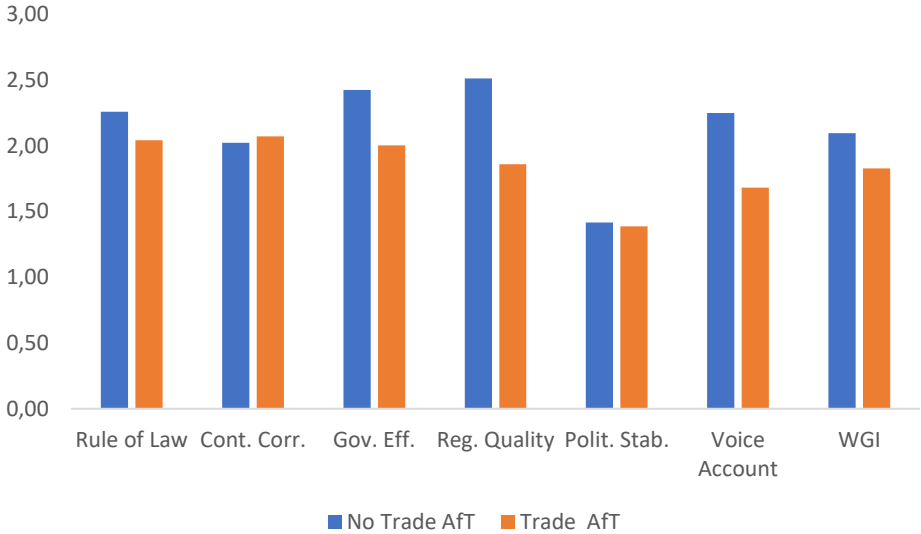
Figure 5: Average aid for trade and share in total Aid for Trade flows by income level



Source: Authors' own elaboration using the OECD dataset.

Figure 6 depicts the absolute difference in the quality of institutions between AfT-recipient countries and donor countries, and distinguishes between recipients that export to donor countries and those that do not. The “institutional gap” is measured using each of the six Worldwide Governance Indicators, as well as the aggregate indicator (WGI). Except for the control of corruption indicator, the bilateral institutional gap is wider for recipient countries that do not export to AfT donors. This observation could indicate a possible correlation between the quality of institutions and the role of AfT in fostering exports by aid-recipient countries.

Figure 6: Absolute difference in the quality of institutions, trade and AfT



Source: Authors’ own elaboration using WGI and Aid for Trade data.

Note: The blue bars represent countries that do not trade and received AfT. Orange bars represent countries that trade and that received AfT.

4 Methodology and Data

In order to examine the effect of AfT on the export performance of recipient countries, we adopt a gravity-type equation. Our first basic econometric specification examines the effect of AfT on the extensive margin of trade of recipient countries and has the following expression:

$$pr(X_{ijt}) = \exp(\beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 Aid_{ijt} + \beta_4 Inst_{ijt} + \beta_5 Inst * Aid_{ijt} + \gamma_{ij} + \epsilon_{ijt}) \quad (1)$$

where, for year t , $pr(X_{ijt})$ represents the likelihood that recipient country i exports to donor country j ; $\ln GDP_{it}$ and $\ln GDP_{jt}$ are country i and j 's real gross domestic product (in log); γ_{ij} are bilateral fixed effects that control for all time invariant dyadic variables; Aid_{ijt} represents the value of AfT from country j to country i ; $Inst_{ijt}$ is the absolute difference between institutions in countries i and j (the larger the value of $Inst_{ijt}$, the greater the difference between the quality of institutions across trading partners); $Inst * Aid_{ijt}$ is an interaction term that we introduce to examine the role of the difference in institutional quality between aid-donor and aid-recipient countries in moderating the effectiveness of AfT on recipient countries' export performance; and ϵ_{ijt} is the discrepancy term. We estimate equation (1) using the Ordinary Least Squares (OLS) estimator.

Our second canonical model investigates the effect of AfT on the recipient's intensive margin of trade and has the following configuration:

$$X_{ijt} = \exp(\beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 Aid_{ijt} + \beta_4 Inst_{ijt} + \beta_5 Inst * Aid_{ijt} + \gamma_{ij} + \epsilon_{ijt}) \quad (2)$$

Where the dependent variable represents exports of recipient country i to donor country j at year t ; the rest of the variables are the same as specified in equation (1). Since our database includes a significant share of zero trade flows, we estimate equation (2) using the PPML estimator, as suggested by Santos Silva and Tenreyro (2006). The PPML estimator is a non-linear estimator, used to deal with the zero trade observations and to provide unbiased and consistent estimates that are robust to the presence of heteroskedasticity.

AfT might be endogenous since some donors might provide significant aid flows to key trade partners. Researchers that have used a gravity framework have used lagged values of AfT flows (Helble et al., 2012; Ahn and Lee, 2017; Nathoo et al., 2021; Kim et al., 2022), whilst others have applied an instrumentation strategy (Pettersson and Johansson, 2013); and others the estimation of a system of structural equations (Lemi, 2017).¹¹ In this work,

¹¹ Researchers that have employed an export demand framework have tackled endogeneity by using lagged values of the endogenous variable(s) (Huhne et al., 2014b; Martinez-Zarzoso et al., 2017), and/or reverting to estimation procedures, such as generalised method of moments (Huhne et al., 2014b; Ngnangnon and Roberts,

we adopt a two-stage approach where we first instrument AfT, then estimate the impact of the latter on the dependent variable. To instrument AfT, we use the “political distance” between donor countries and recipients, measured by the number of votes similar to that of the members of the United Nations (UN) Security Council. Our choice of this instrument is motivated by the fact that, many times, loans from international financial institutions/countries are, to some extent, politically motivated (Easterly, 2006).

We extend our analysis in two ways. First, given the large disparities amongst AfT-beneficiary countries, in terms of their geographical location and income level that might shape the relationship between AfT and recipients' trade, we account for this heterogeneity by adding to each of the two equations, respectively, regional and income groupings. Specifically, in one specification we group recipient countries into six geographical blocs: East Asia and Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA), and Sub-Saharan Africa (SSA). Furthermore, in another configuration, recipient countries are assembled across four income categories: high-income (HI), low-income (LI), lower-middle-income (LMI), and upper-middle-income (UMI) countries. Controlling for regional and/or income differences amongst AfT-recipient countries has been a widely used practice when examining the repercussions of AfT on recipients' trade (Huhne et al., 2014b; Gnanon and Roberts, 2017; Gnanon, 2021; Kim et al., 2022).

Second, we scrutinise the effect of one particular AfT component on recipient's exports: aid flows targeting trade policy and regulations (AfT for TP) by repeating the empirical exercise for this category of AfT. AfT for TP aims at enhancing recipient countries' trade capacities, by strengthening their institutional framework responsible for trade policy, planning and negotiations, and building up their trade facilitation components. Indeed, a number of authors have pinpointed the effectiveness of AfT for TP in stimulating recipients' exports (Helble et al., 2012; Wang and Wu, 2018).

Our data comes from different sources. Data on bilateral exports is retrieved from the CEPII's BACI database. GDP variables come from the World Bank's World Development Indicators database. Data on the quality of institutions is extracted from the World Bank's Worldwide Governance Indicators dataset, where we take into account different sub-indices, as well as the aggregate governance indicator. The UN vote proximity has been retrieved from the UN votes database. Finally, data on AfT is extracted from the CRS developed by the OECD.

2017; Gnanon, 2019a; Gnanon 2019b; Gnanon 2021; Ly-My et al., 2021); dynamic ordinary least squares (Martinez-Zarzoso et al., 2017), and two-stage least squares (Vijil and Wagner, 2012).

5 Empirical Results

5.1 Impact of aggregate AfT on extensive and intensive trade margins

The results from the first step, where we instrument the AfT variable, are depicted in Table 1. The GDP regressors have the expected signs and are strongly significant. Higher GDP of the donor country is associated with larger volumes of outward AfT, whilst higher GDP of the recipient country is associated with less inward AfT. The coefficient of the instrumental variable (proximity of UN voting) is positive and significant. This means that the closer the votes of donor and recipient country pairs in the UN council, the larger the AfT flows from a donor to a recipient country.

Table 1: First step – AfT determinants

	Aid
Proxim. Vote	16.85*** (4.841)
GDP/cap. (org.)	1.715*** (0.499)
GDP/cap. (dest.)	-0.325** (0.144)
Constant	-12.39*** (3.803)
Bilateral FE	YES
Observations	464,014
R-squared	0.570

Notes: (1) Errors are clustered by recipient and donor pairs.
(2) Robust standard errors in parentheses.
(3) *** p<0.01, ** p<0.05, * p<0.1

In the second stage, we estimate the impact of AfT on recipient countries' exports to donor countries. Exports are measured, respectively, at the extensive and intensive margin.

Table 2 depicts the results of estimating equation (1). Both coefficients of the donor and recipient countries' GDP are positive and significant, indicating that increases in GDP of partners are associated with a higher probability that the recipient country exports to the donor. The coefficient of the AfT variable is found insignificant for all definitions of institutional distance, including differences in the aggregate governance indicator (WGI). As for the institutional distance variable, its impact is mostly insignificant. Only differences between AfT donors and recipients in the rule of law have a negative sign, whilst being significant. This means that the wider the gap between donor and recipient countries in the rule of law, the less likely it is for a recipient country to export to a donor country. When looking at the interaction term between AfT and the institutional distance, we mostly find that the coefficients are negative and strongly significant, suggesting that differences in the

quality of institutions play a moderating role in the effectiveness of AfT on exports. Larger differences in the quality of institutions are associated with a less effective role of AfT on the likelihood that exports take place from aid-recipient to aid-donor countries.

Table 2: Second step – Impact of aggregate AfT on the extensive margin of trade

	Rule of Law	Cont. Corruption	Gov. Effic.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.0821*** (0.00922)	0.0771*** (0.00942)	0.0746*** (0.00943)	0.0763*** (0.00943)	0.0775*** (0.00926)	0.0824*** (0.00922)	0.0745*** (0.00940)
Ln(GDP) dest.	0.0997*** (0.00457)	0.0983*** (0.00468)	0.0981*** (0.00475)	0.0969*** (0.00472)	0.101*** (0.00460)	0.101*** (0.00457)	0.0987*** (0.00474)
Aid	-0.00476 (0.00616)	0.00111 (0.00619)	0.00147 (0.00619)	0.00213 (0.00620)	-0.00318 (0.00609)	-0.00334 (0.00610)	0.00223 (0.00627)
Institution	-0.00524** (0.00264)	0.00459* (0.00242)	0.0141*** (0.00251)	0.00162 (0.00253)	-0.000893 (0.00154)	-0.00347 (0.00267)	0.00296 (0.00358)
Institution*Aid	-0.000647 (0.000933)	-0.00329*** (0.000831)	-0.00224*** (0.000858)	0.00308*** (0.000888)	-0.000262 (0.000553)	-0.00243*** (0.000917)	-0.00353*** (0.00120)
Constant	-3.660*** (0.184)	-3.516*** (0.187)	-3.462*** (0.187)	-3.460*** (0.187)	-3.592*** (0.185)	-3.692*** (0.183)	-3.460*** (0.187)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	453,877	440,033	438,649	438,649	451,374	453,877	438,274
R-squared	0.704	0.701	0.700	0.700	0.704	0.705	0.701

Notes: (1) Regressions are run using linear probability estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the probability of trading.

Table 3 depicts the results of equation (1) with the extension accounting for regional heterogeneity of AfT-recipient countries. The GDP of donor countries is positive but insignificant across all indicators of governance, whilst that of the recipient country is always positive and significant. As for the AfT variable (relative to the reference - EAP - group), the coefficient is positive and significant for the overall governance indicator and 4 out of the 6 sub-indicators. Looking at the institutional difference measurements, only differences in the rule of law and in voice and accountability between aid donor and recipient are found to be associated with a lower probability of exporting. The interaction terms between the AfT and the institutional difference measurements reveal that, for all cases (except for political stability), the wider the institutional gap, the weaker the effect of AfT on exports at the extensive margin.

The interaction terms accounting for regional heterogeneity yield positive, but not always significant, coefficients. This means that the impact of AfT on the likelihood of

exporting is overall positive for all regions but matters more for ECA, MENA and SSA, as compared to the reference group.

Table 3: Second step – Impact of aggregate AfT on the extensive margin of trade by region

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.0202 (0.0128)	0.00794 (0.0130)	0.00549 (0.0131)	0.00609 (0.0131)	0.0113 (0.0129)	0.0189 (0.0127)	0.00354 (0.0131)
Ln(GDP) dest.	0.125*** (0.00601)	0.130*** (0.00612)	0.128*** (0.00619)	0.129*** (0.00623)	0.128*** (0.00600)	0.126*** (0.00597)	0.131*** (0.00621)
Aid	0.0121 (0.00925)	0.0206** (0.00953)	0.0200** (0.00956)	0.0192** (0.00956)	0.0156* (0.00933)	0.0152 (0.00932)	0.0206** (0.00962)
Institution	-0.00693** (0.00307)	0.00241 (0.00286)	0.0121*** (0.00298)	0.00222 (0.00293)	-0.000228 (0.00180)	-0.00653** (0.00318)	0.00505 (0.00418)
Institution*Aid	-0.00246* (0.00135)	-0.00410*** (0.00124)	-0.00353*** (0.00128)	0.00248* (0.00132)	-0.000309 (0.000830)	0.00368*** (0.00135)	-0.00343** (0.00169)
ECA*Aid	0.0339*** (0.00787)	0.0289*** (0.00803)	0.0313*** (0.00806)	0.0295*** (0.00806)	0.0319*** (0.00793)	0.0336*** (0.00786)	0.0295*** (0.00804)
LAC*Aid	0.0163* (0.00935)	0.00834 (0.00947)	0.00933 (0.00948)	0.00834 (0.00949)	0.0139 (0.00936)	0.0145 (0.00935)	0.00763 (0.00947)
MENA*Aid	0.0255** (0.0118)	0.0281** (0.0119)	0.0340*** (0.0120)	0.0296** (0.0119)	0.0251** (0.0118)	0.0270** (0.0117)	0.0318*** (0.0119)
SA*Aid	0.0115 (0.0109)	0.0115 (0.0110)	0.0114 (0.0111)	0.0118 (0.0111)	0.00999 (0.0109)	0.0101 (0.0109)	0.0119 (0.0110)
SSA*Aid	0.0514*** (0.00831)	0.0527*** (0.00846)	0.0561*** (0.00851)	0.0546*** (0.00851)	0.0506*** (0.00836)	0.0500*** (0.00828)	0.0549*** (0.00850)
Constant	-2.761*** (0.247)	-2.594*** (0.253)	-2.509*** (0.255)	-2.538*** (0.255)	-2.643*** (0.250)	-2.767*** (0.246)	-2.532*** (0.254)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	347,537	339,137	337,909	337,909	345,481	347,537	337,765
R-squared	0.685	0.682	0.681	0.681	0.684	0.685	0.682

Notes: (1) Regressions are run using linear probability estimation method. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1 (5) The dependent variable is the probability of trading. (6) The reference category is East Asia and Pacific. ECA stands for Europe and Central Asia, LCA for Latin America and Caribbean, MENA for Middle East and North Africa, SA for South Asia and SSA for Sub-Saharan Africa.

The results of the extension of equation (1), accounting for income heterogeneity across recipient countries, are depicted in Table 4. As in the previous extension, the coefficient of the donor country's GDP is positive but insignificant, whilst that of the recipient countries is always positive and significant. The AfT variable is found to have a positive and strongly significant effect on the probability of exports from an aid-recipient country in the reference group (HI countries) to an aid-donor country. The absolute difference in the quality of institutions between donor and recipient countries negatively and significantly impacts

the probability of exporting in the case of the rule of law. Except for bilateral differences in political stability, the interaction of AfT and differences in institutions is always negative and significant: that is, the institutional gap between trading partners dampens the efficacy of AfT in stimulating exports of AfT-beneficiary countries at the extensive margin.

When introducing the interaction between AfT and different recipient country income levels, aid appears to matter more for LI countries, compared to the reference group. The coefficient of the interaction term is positive and significant in the specification, including the overall governance indicator, corruption, government effectiveness and regulatory quality. Meanwhile, the results for UMI countries are not found to be significantly different from the reference group. Finally, the interaction term has a negative and significant effect for UMI countries. This means that being an UMI country receiving AfT has less pronounced effects on the probability of exporting to donor countries, as compared to the reference group.

Table 4: Second step – Impact of aggregate AfT on the extensive margin of trade by income level

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.0193 (0.0128)	0.00576 (0.0131)	0.00375 (0.0131)	0.00464 (0.0132)	0.00934 (0.0129)	0.0172 (0.0127)	0.00179 (0.0131)
Ln(GDP) dest.	0.125*** (0.00601)	0.130*** (0.00613)	0.129*** (0.00619)	0.129*** (0.00622)	0.129*** (0.00600)	0.127*** (0.00597)	0.132*** (0.00621)
Aid	0.0585*** (0.0103)	0.0550*** (0.0102)	0.0542*** (0.0101)	0.0542*** (0.0102)	0.0547*** (0.0102)	0.0574*** (0.0102)	0.0552*** (0.0103)
Institution	-0.00798*** (0.00308)	0.00238 (0.00286)	0.0109*** (0.00298)	0.00224 (0.00294)	-0.000450 (0.00180)	-0.00504 (0.00317)	0.00434 (0.00421)
Institution*Aid	-0.00336** (0.00136)	-0.00451*** (0.00124)	-0.00357*** (0.00128)	0.00322** (0.00132)	-0.000637 (0.000832)	-0.00383*** (0.00134)	-0.00447*** (0.00170)
LI*Aid	0.00591 (0.0113)	0.0201* (0.0112)	0.0232** (0.0112)	0.0226** (0.0112)	0.0125 (0.0112)	0.00789 (0.0112)	0.0242** (0.0112)
LMI*Aid	-0.00741 (0.00940)	0.00353 (0.00931)	0.00413 (0.00923)	0.00366 (0.00928)	-0.00170 (0.00935)	-0.00451 (0.00938)	0.00463 (0.00927)
UMI*Aid	-0.0397*** (0.00899)	-0.0291*** (0.00888)	-0.0275*** (0.00880)	0.0291*** (0.00884)	-0.0323*** (0.00893)	-0.0355*** (0.00895)	-0.0284*** (0.00884)
Constant	-2.737*** (0.247)	-2.548*** (0.253)	-2.477*** (0.255)	-2.499*** (0.255)	-2.605*** (0.251)	-2.736*** (0.247)	-2.485*** (0.255)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	347,537	339,137	337,909	337,909	345,481	347,537	337,765
R-squared	0.685	0.682	0.681	0.681	0.684	0.685	0.682

Notes: (1) Regressions are run using linear probability estimation method. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1 (5) The dependent variable is the probability of trading. (6) LI stands for Low Income countries,

LMI for Lower Middle-Income countries, and UMI for Upper Middle-Income countries. The reference category is High Income countries.

To summarise, the previous results suggest that institutions matter for the effectiveness of AfT on exports at the extensive margin. When accounting for income heterogeneity across recipients, the impact of AfT is more pronounced for LI countries. At the regional level, AfT matters more for the ECA, MENA and SSA regions. These findings highlight the role of AfT targeting the latter countries, in mitigating the initial presence of relatively high structural constraints limiting their capacity to export.

Next, we examine the AfT-institutions-exports of recipients' nexus at the intensive margin.

Table 5 depicts the results of the baseline regression at the intensive trade margin (equation (2)). Donor and recipient country GDP regressors are positive and significant across all indicators of institutional differences. Surprisingly, the effect of AfT is negative and significant. Moreover, some indicators of institutional differences have positive and significant coefficients. These counterintuitive findings could reflect the fact that this specification fails to capture the heterogeneity of recipient countries. When the aid and institutional gap variables are interacted, the coefficients are mostly negative and significant. Thus, the institutional gap between trading partners seems to play a moderating role in the effectiveness of AfT: the wider the institutional gap between donors and recipients, the less effective AfT is in increasing bilateral exports from AfT recipient to AfT donor countries.

Table 5: Second step – Impact of aggregate AfT on the intensive margin of trade

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	1.502*** (0.0998)	1.498*** (0.0983)	1.479*** (0.0981)	1.494*** (0.0982)	1.467*** (0.0943)	1.509*** (0.0967)	1.501*** (0.0992)
Ln(GDP) dest.	1.367*** (0.0760)	1.365*** (0.0787)	1.375*** (0.0786)	1.369*** (0.0769)	1.386*** (0.0768)	1.353*** (0.0757)	1.362*** (0.0775)
Aid	-0.161*** (0.0550)	-0.162*** (0.0547)	-0.201*** (0.0561)	-0.169*** (0.0577)	-0.209*** (0.0586)	-0.139** (0.0592)	-0.162*** (0.0538)
Institution	0.0555 (0.0410)	0.127*** (0.0343)	-1.15e-05 (0.0313)	0.00830 (0.0373)	0.0121 (0.0201)	0.135*** (0.0363)	0.0813* (0.0453)
Institution*Aid	-0.0421** (0.0165)	-0.0303** (0.0118)	-0.00993 (0.0128)	-0.0347*** (0.0131)	0.00147 (0.00729)	-0.0454*** (0.0126)	-0.0416** (0.0185)
Constant	-63.01*** (2.152)	-62.96*** (2.104)	-62.52*** (2.102)	-62.81*** (2.110)	-62.50*** (2.081)	-62.95*** (2.093)	-62.88*** (2.118)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	401,578	392,172	391,108	391,108	399,689	401,465	390,699

Notes: (1) Regressions are run using Poisson Pseudo-Maximum Likelihood estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the value of exports from country i to country j.

When accounting for regional heterogeneity (Table 6), AfT is mostly found to significantly and positively affect exports from recipients of the reference group (EAP) to donor countries. Differences in institutions are largely insignificant. The interaction terms reveal that institutional differences reduce the effectiveness of AfT in increasing exports across most of the specifications, with the exception of specifications with government effectiveness and political stability as measurements of the institutional gap.

At the regional level, all regions are associated with positive and strongly significant coefficients, suggesting that AfT matters more for the exports of these regions, in comparison to the reference group. The coefficients are higher for MENA countries, followed by ECA countries and SSA countries.

Table 6: Second step – Impact of aggregate AfT on the intensive margin of trade by region

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.796*** (0.172)	0.749*** (0.171)	0.717*** (0.172)	0.742*** (0.168)	0.704*** (0.167)	0.740*** (0.170)	0.781*** (0.176)
Ln(GDP) dest.	1.405*** (0.0839)	1.441*** (0.0855)	1.457*** (0.0836)	1.444*** (0.0827)	1.477*** (0.0807)	1.438*** (0.0803)	1.409*** (0.0862)
Aid	0.215** (0.0960)	0.179* (0.0971)	0.172* (0.0989)	0.206** (0.0931)	0.148 (0.102)	0.193* (0.107)	0.206** (0.0971)
Institution	0.0100 (0.0373)	0.0799*** (0.0274)	-0.0172 (0.0261)	-0.0540* (0.0320)	0.00985 (0.0203)	0.0359 (0.0324)	-5.77e-05 (0.0408)
Institution*Aid	0.0729*** (0.0214)	-0.0305* (0.0178)	-0.0298 (0.0213)	0.0567*** (0.0217)	-0.0101 (0.0116)	-0.0308* (0.0161)	0.0662*** (0.0243)
ECA*Aid	0.575*** (0.0745)	0.583*** (0.0730)	0.585*** (0.0746)	0.573*** (0.0742)	0.595*** (0.0743)	0.567*** (0.0792)	0.575*** (0.0747)
LAC*Aid	0.375*** (0.0947)	0.367*** (0.0921)	0.378*** (0.0915)	0.356*** (0.0879)	0.384*** (0.0928)	0.353*** (0.0985)	0.364*** (0.0945)
MENA*Aid	0.640*** (0.110)	0.645*** (0.113)	0.657*** (0.114)	0.654*** (0.112)	0.648*** (0.116)	0.646*** (0.114)	0.653*** (0.110)
SA*Aid	0.288*** (0.0578)	0.355*** (0.0576)	0.352*** (0.0576)	0.347*** (0.0575)	0.360*** (0.0622)	0.323*** (0.0658)	0.333*** (0.0559)
SSA*Aid	0.509*** (0.180)	0.490*** (0.179)	0.499*** (0.185)	0.507*** (0.177)	0.480** (0.190)	0.472** (0.186)	0.497*** (0.183)
Constant	-45.04*** (3.709)	-44.86*** (3.692)	-44.27*** (3.729)	-44.55*** (3.634)	-44.52*** (3.761)	-44.45*** (3.725)	-44.73*** (3.770)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	305,824	300,212	299,306	299,306	304,281	305,690	299,086

Notes: (1) Regressions are run using Poisson Pseudo-Maximum Likelihood estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the value of exports from country i to country j. (6) The reference category is East Asia and Pacific. ECA stands for

Europe and Central Asia, LCA for Latin America and Caribbean, MENA for Middle East and North Africa, SA for South Asia and SSA for Sub-Saharan Africa.

Table 7 depicts the extended analysis featuring heterogeneity at the income level. Again, the controls have the expected sign and are significant. AfT is found to positively affect exports of the reference group (HI countries) and the coefficient is significant across all institutional specifications. The effect of differences in the quality of institutions between donors and recipients varies according to the measurement used. As in the previous extension, the interaction term between AfT and institutions chiefly yields a negative and significant coefficient, implying that the institutional gap reduces the efficacy of AfT in increasing exports of recipient countries. At the income level, the effect of AfT on exports of LI countries is not significantly different from the reference group. However, AfT appears to be less effective in increasing exports of LMI and UMI countries.

Table 7: Second step – Impact of aggregate AfT on the intensive margin of trade by income level

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.856*** (0.202)	0.800*** (0.198)	0.753*** (0.197)	0.781*** (0.187)	0.752*** (0.193)	0.805*** (0.191)	0.826*** (0.204)
Ln(GDP) dest.	1.450*** (0.0902)	1.479*** (0.0931)	1.510*** (0.0896)	1.488*** (0.0878)	1.524*** (0.0858)	1.452*** (0.0838)	1.452*** (0.0934)
Aid	0.728*** (0.108)	0.743*** (0.106)	0.721*** (0.109)	0.744*** (0.103)	0.719*** (0.109)	0.733*** (0.107)	0.732*** (0.109)
Institution	-0.0299 (0.0409)	0.107*** (0.0326)	-0.0538* (0.0299)	-0.0724** (0.0359)	0.000423 (0.0248)	0.0728* (0.0397)	-0.0208 (0.0453)
Institution*Aid	- (0.0248)	-0.0328 (0.0200)	-0.0247 (0.0235)	-0.0606** (0.0250)	-0.00456 (0.0135)	0.0514*** (0.0148)	-0.0694** (0.0278)
Low Inc.*Aid	0.108 (0.149)	0.0821 (0.148)	0.0953 (0.152)	0.144 (0.153)	0.0618 (0.151)	0.100 (0.150)	0.133 (0.149)
LMI*Aid	-0.207*** (0.0775)	-0.205** (0.0808)	-0.207*** (0.0781)	-0.181** (0.0774)	-0.238*** (0.0813)	-0.178** (0.0781)	-0.182** (0.0784)
UMI*Aid	-0.508*** (0.0565)	-0.542*** (0.0602)	-0.536*** (0.0617)	-0.511*** (0.0591)	-0.557*** (0.0634)	-0.484*** (0.0676)	-0.502*** (0.0572)
Constant	-47.77*** (4.499)	-47.24*** (4.394)	-46.57*** (4.417)	-46.73*** (4.194)	-46.99*** (4.513)	-46.56*** (4.314)	-46.99*** (4.521)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	305,824	300,212	299,306	299,306	304,281	305,690	299,086

Notes: (1) Regressions are run using Poisson Pseudo-Maximum Likelihood estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the value of exports from country i to country j. (6) LI stands for Low Income countries, LMI for Lower Middle-Income countries and UMI for Upper Middle-Income countries. The reference category is High Income countries.

To conclude, our findings suggest that institutions are an important determinant of the effectiveness of AfT in increasing exports of aid-recipient countries. At the regional level, the effect of AfT is more pronounced for ECA, MENA and SSA countries. At the income level, AfT is found to be relatively less effective in increasing exports of middle-income countries.

5.2 Impact of Aid for Trade Policy on extensive and intensive trade margins

In this section, we focus on aid targeting trade policy and regulations (AFT for TP) and assess its impact on extensive and intensive exports margins of aid recipient countries.

Table 8 summarises the results of the baseline regression at the extensive exports margin. The coefficients of the GDPs of AfT-donor and recipient countries have the expected signs and are significant. The AfT variable is positive and highly significant across all definitions of institutions. Overall, the estimated impact of AfT for TP is larger than that of aggregate AfT. The impact of the difference in institutions is mostly insignificant and varies with the indicator employed. Finally, the interaction term involving aid and institutional difference shows that, globally, wider institutional gaps reduce the effectiveness of AfT for TP in affecting exports of recipients at the extensive margin.

Table 8: Second step – Impact of AfT for trade policy on trade – extensive margin of trade

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.0610*** (0.00775)	0.0571*** (0.00797)	0.0558*** (0.00801)	0.0565*** (0.00801)	0.0560*** (0.00781)	0.0616*** (0.00776)	0.0557*** (0.00799)
Ln(GDP) dest.	0.107*** (0.00517)	0.107*** (0.00530)	0.107*** (0.00536)	0.106*** (0.00535)	0.109*** (0.00519)	0.108*** (0.00517)	0.107*** (0.00535)
Aid	1.550** (0.731)	2.176*** (0.740)	2.047*** (0.737)	2.195*** (0.739)	1.985*** (0.721)	1.844** (0.724)	2.251*** (0.752)
Institution	-0.00496* (0.00282)	0.00571** (0.00255)	0.0145*** (0.00266)	0.00229 (0.00269)	-0.000351 (0.00166)	-0.00121 (0.00281)	0.00509 (0.00380)
Institution*Aid	-0.0443 (0.131)	-0.337*** (0.118)	-0.166 (0.120)	-0.271** (0.126)	-0.0924 (0.0759)	-0.376*** (0.128)	-0.398** (0.167)
Constant	-3.348*** (0.124)	-3.251*** (0.127)	-3.232*** (0.128)	-3.209*** (0.128)	-3.287*** (0.126)	-3.375*** (0.124)	-3.217*** (0.128)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	453,877	440,033	438,649	438,649	451,374	453,877	438,274
R-squared	0.704	0.701	0.700	0.700	0.704	0.705	0.701

Notes: (1) Regressions are run using linear probability estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the probability of trading.

When regional heterogeneity of aid-recipient countries is accounted for (Table 9), the results are slightly different. The GDP controls have the expected signs but are not always

significant (in the case of the GDP of the donor country). The effect of AfT for TP is positive and significant across all specifications, except for the rule of law. As in the previous estimations, the sign and magnitude of the impact of institutional distance on the likelihood of exporting varies with the specifications. The interaction term between AfT for TP and institutions reveals, for the most part, the dampening effect of the institutional difference on the effectiveness of AfT for TP in affecting the dependent variable.

As for the interaction terms including AfT and the different regions, AfT for TP is found to matter more for ECA, MENA and SSA, relatively to the reference group. These findings suggest that recipient countries in these regions were able to benefit from AfT flows to overcome barriers to trade related to restrictive trade policies and related regulations, in order to begin exporting to donor countries.

**Table 9: Second step – Impact of AfT for trade policy
on trade – extensive margin of trade by region**

	Rule of Law	Cont. Corruption	Gov. Effic.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.0224** (0.00965)	0.0133 (0.00992)	0.0135 (0.00999)	0.0117 (0.0100)	0.0155 (0.00975)	0.0231** (0.00965)	0.0115 (0.0100)
Ln(GDP) dest.	0.136*** (0.00666)	0.142*** (0.00678)	0.141*** (0.00685)	0.142*** (0.00691)	0.141*** (0.00666)	0.137*** (0.00662)	0.143*** (0.00688)
Aid	1.676 (1.121)	2.784** (1.181)	2.393** (1.182)	2.376** (1.180)	2.335** (1.140)	2.187* (1.130)	2.642** (1.189)
Institution	-0.00506* (0.00304)	0.00517* (0.00280)	0.0142*** (0.00293)	0.00353 (0.00290)	-0.000139 (0.00177)	-0.00381 (0.00306)	0.00777* (0.00411)
Institution*Aid	-0.267 (0.181)	-0.458*** (0.168)	-0.305* (0.171)	-0.124 (0.178)	-0.115 (0.108)	-0.619*** (0.181)	-0.419* (0.227)
ECA*Aid	6.461*** (1.237)	5.497*** (1.267)	5.805*** (1.271)	5.544*** (1.271)	6.086*** (1.250)	6.465*** (1.233)	5.609*** (1.268)
LAC*Aid	1.559 (1.410)	0.0453 (1.441)	0.140 (1.441)	0.0949 (1.442)	0.985 (1.417)	1.246 (1.407)	-0.0188 (1.435)
MENA*Aid	5.030*** (1.781)	5.209*** (1.819)	5.993*** (1.826)	5.490*** (1.822)	4.847*** (1.794)	5.198*** (1.779)	5.742*** (1.821)
SA*Aid	1.679 (1.740)	1.440 (1.768)	1.361 (1.774)	1.484 (1.776)	1.353 (1.750)	1.531 (1.734)	1.468 (1.766)
SSA*Aid	5.583*** (1.207)	5.424*** (1.244)	5.764*** (1.249)	5.606*** (1.250)	5.241*** (1.221)	5.361*** (1.202)	5.605*** (1.246)
Constant	-3.135*** (0.148)	-3.062*** (0.151)	-3.040*** (0.153)	-3.027*** (0.153)	-3.074*** (0.150)	-3.163*** (0.148)	-3.045*** (0.153)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	347,537	339,137	337,909	337,909	345,481	347,537	337,765
R-squared	0.685	0.682	0.681	0.681	0.684	0.685	0.682

Notes: (1) Regressions are run using linear probability estimation method. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1 (5) The dependent variable is the probability of trading. (6) The reference category is East Asia

and Pacific. ECA stands for Europe and Central Asia, LCA for Latin America and Caribbean, MENA for Middle East and North Africa, SA for South Asia and SSA for Sub-Saharan Africa.

Table 10 depicts the results of the extension accounting for income heterogeneity across recipient countries. The impact of AfT for TP on the extensive margin of exports of the reference group is highly significant and positive. Whilst the differences in institutions do not always matter for trade, they appear to play a moderating role on the effectiveness of AfT for TP in promoting exports at the extensive margin, across most of the specifications.

At the income level, AfT for TP does not seem to matter more for geographical regions, in comparison to the reference group. However, being an UMI country appears to reduce the impact of AfT on exports.

Table 10: Second step – Impact of AfT for trade policy on trade – extensive margin of trade by income level

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	0.0241** (0.00968)	0.0133 (0.00996)	0.0132 (0.0100)	0.0119 (0.0101)	0.0162* (0.00978)	0.0245** (0.00967)	0.0117 (0.0100)
Ln(GDP) dest.	0.136*** (0.00666)	0.142*** (0.00679)	0.141*** (0.00685)	0.142*** (0.00691)	0.141*** (0.00667)	0.137*** (0.00663)	0.143*** (0.00688)
Aid	8.792*** (1.334)	8.050*** (1.321)	7.604*** (1.306)	7.645*** (1.317)	8.428*** (1.322)	8.850*** (1.325)	7.958*** (1.323)
Institution	-0.00574* (0.00305)	0.00517* (0.00281)	0.0128*** (0.00293)	0.00374 (0.00292)	-0.000311 (0.00177)	-0.00232 (0.00306)	0.00717* (0.00415)
Institution*Aid	-0.322* (0.181)	-0.489*** (0.168)	-0.291* (0.171)	-0.165 (0.178)	-0.135 (0.108)	-0.617*** (0.180)	-0.486** (0.228)
Low Inc.*Aid	-1.176 (1.631)	0.848 (1.619)	1.234 (1.613)	1.060 (1.622)	-0.339 (1.619)	-0.983 (1.614)	1.162 (1.621)
LMI*Aid	-2.235 (1.396)	-0.629 (1.385)	-0.472 (1.374)	-0.560 (1.383)	-1.525 (1.390)	-1.905 (1.393)	-0.587 (1.381)
UMI*Aid	-6.182*** (1.353)	-4.605*** (1.338)	-4.295*** (1.328)	-4.507*** (1.337)	-5.167*** (1.347)	-5.755*** (1.345)	-4.544*** (1.335)
Constant	-3.158*** (0.149)	-3.060*** (0.153)	-3.034*** (0.154)	-3.025*** (0.154)	-3.083*** (0.151)	-3.188*** (0.149)	-3.040*** (0.154)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	347,537	339,137	337,909	337,909	345,481	347,537	337,765
R-squared	0.685	0.682	0.681	0.681	0.684	0.685	0.682

Notes: (1) Regressions are run using linear probability estimation method. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1 (5) The dependent variable is the probability of trading. (6) LI stands for Low Income countries, LMI for Lower Middle-Income countries, and UMI for Upper Middle-Income countries. The reference category is High Income countries.

To summarise, our baseline model results show that AfT for TP increases the likelihood of exporting in recipient countries. When taking into consideration the regional groupings, aid targeting trade policy and regulation seems to have positively impacted the

extensive margin of exports across the regions, notably so in ECA, MENA and SSA. The picture remains the same as regards the effect of AfT for TP when accounting for income groups. There is evidence that UMI countries have not benefitted from aid flows as much as the rest of the income groups. Finally, across the baseline and the extended models, there is strong evidence pointing at the moderating effect of the institutional gap on the efficacy of AfT for TP.

Last, we investigate the AfT for TP-institutions-exports nexus at the intensive margin. In the baseline regression (Table 11), the coefficients of the GDP have the expected signs and are significant. The AfT for TP does not have the expected sign. Moreover, the coefficients of the institutions are mostly insignificant. However, the institutional gap/aid interaction term shows that the institutional difference between donors and recipients matters for the effectiveness of AfT on exports at the intensive margin.

Table 11: Second step – Impact of AfT for trade policy on trade – intensive margin of trade

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	1.374*** (0.0807)	1.381*** (0.0819)	1.353*** (0.0818)	1.368*** (0.0821)	1.339*** (0.0804)	1.389*** (0.0808)	1.381*** (0.0808)
Ln(GDP) dest.	1.341*** (0.0784)	1.338*** (0.0805)	1.350*** (0.0807)	1.343*** (0.0792)	1.364*** (0.0781)	1.326*** (0.0778)	1.332*** (0.0797)
Aid	-12.74* (6.574)	-12.10* (6.522)	-17.54*** (6.538)	-12.98* (6.731)	-18.67*** (6.697)	-10.55 (6.955)	-11.93* (6.542)
Institution	0.0465 (0.0396)	0.123*** (0.0340)	1.38e-05 (0.0290)	-0.00163 (0.0368)	0.0153 (0.0206)	0.127*** (0.0382)	0.0868* (0.0447)
Institution*Aid	-5.545** (2.304)	-4.717*** (1.701)	-1.581 (1.785)	-5.042*** (1.873)	0.0895 (1.038)	-6.095*** (1.819)	-6.412** (2.536)
Constant	-58.94*** (1.831)	-59.15*** (1.830)	-58.54*** (1.844)	-58.78*** (1.819)	-58.56*** (1.872)	-59.04*** (1.869)	-58.93*** (1.822)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	401,578	392,172	391,108	391,108	399,689	401,465	390,699

Notes: (1) Regressions are run using Poisson Pseudo-Maximum Likelihood estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the value of exports from country i to country j.

Results of the extension accounting for regional heterogeneity (Table 12) suggest that institutions matter for the effectiveness of AfT targeting trade policy in increasing bilateral exports from recipient to donor countries. The coefficients of the interaction term, across most of the specifications, have the expected sign and are mostly significant. Aid does not seem to affect exports of the reference group of countries (EAP). Furthermore, as was the case in most of the previous findings, the coefficient of the institutional gap remains essentially insignificant across the specifications.

As for the interaction terms, including aid and different regions, the coefficients are all positive and significant, suggesting that all regions benefited from AfT flows more than the reference group.

**Table 12: Second step – Impact of AfT for trade policy
on trade – intensive margin of trade by region**

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	1.168*** (0.106)	1.137*** (0.109)	1.108*** (0.108)	1.147*** (0.106)	1.099*** (0.109)	1.130*** (0.107)	1.173*** (0.108)
Ln(GDP) dest.	1.420*** (0.0890)	1.454*** (0.0887)	1.471*** (0.0876)	1.445*** (0.0872)	1.479*** (0.0860)	1.451*** (0.0847)	1.413*** (0.0902)
Aid	-4.219 (9.510)	-7.711 (9.367)	-11.50 (9.969)	-6.376 (9.719)	-13.34 (10.18)	-8.987 (11.28)	-4.244 (9.618)
Institution	-0.00294 (0.0362)	0.0808*** (0.0281)	-0.0257 (0.0259)	-0.0606* (0.0330)	0.00295 (0.0186)	0.0445 (0.0334)	-0.00337 (0.0403)
Institution*Aid	-10.05*** (2.904)	-5.215** (2.373)	-3.743 (2.718)	-8.670*** (2.893)	-2.551* (1.378)	-3.979* (2.245)	-10.70*** (3.262)
ECA*Aid	86.65*** (11.78)	87.29*** (11.52)	87.85*** (11.75)	86.17*** (11.70)	89.38*** (11.72)	85.07*** (12.33)	86.26*** (11.82)
LAC*Aid	46.13*** (14.64)	43.17*** (14.27)	45.93*** (14.20)	43.01*** (13.57)	46.98*** (14.28)	42.90*** (15.01)	43.96*** (14.51)
MENA*Aid	77.09*** (14.44)	78.34*** (14.79)	79.44*** (15.10)	79.92*** (14.63)	79.39*** (15.48)	78.88*** (15.09)	79.46*** (14.39)
SA*Aid	44.95*** (7.697)	55.58*** (7.255)	55.69*** (7.664)	55.37*** (7.379)	57.84*** (8.592)	52.03*** (9.024)	51.98*** (7.113)
SSA*Aid	64.32** (26.72)	61.72** (26.55)	62.44** (27.63)	64.94** (25.94)	60.69** (28.45)	59.67** (27.74)	62.96** (27.02)
Constant	-55.54*** (2.074)	-55.75*** (2.092)	-55.25*** (2.134)	-55.61*** (2.059)	-55.27*** (2.194)	-55.42*** (2.138)	-55.48*** (2.099)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	305,824	300,212	299,306	299,306	304,281	305,690	299,086

Notes: (1) Regressions are run using Poisson Pseudo-Maximum Likelihood estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the value of exports from country i to country j. (6) The reference category is East Asia and Pacific. ECA stands for Europe and Central Asia, LCA for Latin America and Caribbean, MENA Middle East and North Africa, SA South Asia, SSA Sub-Saharan Africa.

Finally, Table 13 summarises the findings from the extension accounting for income heterogeneity. The GDP of donor and recipient countries and the AfT for TP variables have the expected signs and are significant. As was found previously, the institutional difference between donor and recipient countries has a varying effect on the dependent variable, whilst not always significant. As in the previous extensions, the interaction involving aid and institutions is mostly significant and has the expected sign, suggesting that differences in institutions reduce the impact of AfT on exports.

At the income level, we find almost no significant differences compared to the reference group, except for UMI countries, where the impact of AfT for TP on the intensive margin of exports is found to be weaker than the reference group.

Table 13: Second step – Impact of AfT for trade policy on trade – intensive margin of trade by income level

	Rule of Law	Cont. Corruption	Gov. Effec.	Reg. Quality	Pol. Stab.	Voice Account.	WGI
Ln(GDP) origin	1.020*** (0.107)	1.000*** (0.111)	0.953*** (0.109)	1.000*** (0.105)	0.945*** (0.109)	1.017*** (0.109)	1.024*** (0.110)
Ln(GDP) dest.	1.487*** (0.0908)	1.512*** (0.0924)	1.540*** (0.0896)	1.510*** (0.0882)	1.551*** (0.0880)	1.483*** (0.0849)	1.476*** (0.0926)
Aid	83.05*** (9.696)	84.68*** (9.819)	80.15*** (9.827)	82.27*** (9.497)	80.79*** (9.881)	80.05*** (9.742)	82.92*** (9.593)
Institution	-0.0431 (0.0401)	0.0995*** (0.0326)	-0.0578** (0.0291)	-0.0763** (0.0375)	-0.00359 (0.0232)	0.0801* (0.0409)	-0.0226 (0.0442)
Institution*Aid	-9.721*** (3.297)	-6.130** (2.523)	-3.675 (2.877)	-9.312*** (3.148)	-1.645 (1.571)	-7.229*** (2.129)	-11.39*** (3.607)
Low Inc.*Aid	40.91 (27.97)	38.51 (28.69)	38.38 (28.69)	45.22 (28.32)	35.67 (28.93)	38.33 (27.98)	43.86 (27.69)
LMI*Aid	-20.15* (12.00)	-17.86 (12.80)	-19.82 (12.18)	-15.19 (11.76)	-23.46* (12.59)	-15.11 (12.30)	-15.13 (12.13)
UMI*Aid	-67.24*** (8.921)	-70.75*** (9.588)	-71.09*** (9.667)	-67.25*** (9.260)	-73.67*** (9.932)	-63.92*** (10.57)	-65.34*** (9.018)
Constant	-53.21*** (2.151)	-53.53*** (2.140)	-52.82*** (2.201)	-53.27*** (2.096)	-52.96*** (2.282)	-53.17*** (2.204)	-53.04*** (2.161)
Bilateral FE	YES	YES	YES	YES	YES	YES	YES
Observations	305,824	300,212	299,306	299,306	304,281	305,690	299,086

Notes: (1) Regressions are run using Poisson Pseudo-Maximum Likelihood estimation method with high dimension fixed effects. (2) Errors are clustered by recipient and donor pairs. (3) Robust standard errors in parentheses. (4) *** p<0.01, ** p<0.05, * p<0.1. (5) The dependent variable is the value of exports from country i to country j. (6) LI stands for Low Income countries, LMI for Lower Middle-Income countries, and UMI for Upper Middle-Income countries. The reference category is High Income countries.

Synthesising, aid targeting trade policy and regulation only seems to affect the intensive margin of trade positively when regional and income heterogeneity is accounted for. As was the case when exploring the extensive margin of trade, our results hint at a moderating effect of the difference in the quality of institutions between trading partners as to the magnitude of the impact of AfT on the dependent variable. Also, AfT for TP seem to be particularly important for recipients in ECA, MENA and SSA. Finally, it seems that UMI countries did not succeed as much as the rest of the AfT-beneficiary countries in harnessing aid flows.

6 Conclusion and policy recommendations

The recent literature that investigated the impact of AfT on recipient countries' trade performance has shown that the efficacy with which AfT flows affect beneficiary countries' trade varies, reflecting a host of underpinning factors. Our paper looks at whether the difference in institutional quality between donor and recipient countries is a factor influencing the degree with which AfT impacts the exports of the latter countries to the former ones. Doing so, we bridge two literatures: the one on AfT and exports, and the other on trade and institutions. To the best of our knowledge, this is the first paper that sheds light on the possible moderating role played by the institutional gap in the AfT/exports nexus.

To implement our analysis, we adopt a gravity-type equation and combine recent data on AfT flows, institutional quality and bilateral exports for 36 donor countries and 155 recipient countries over the period 2002-2019. We use our empirical setting to examine the impact of AfT on the extensive and intensive margin of exports of recipient countries to donors, whilst allowing for the institutional gap between donors and recipients, to moderate the trade-effect of AfT flows. We acknowledge the likely endogeneity of AfT by applying a valid instrumentation procedure that controls for the political distance between donor and recipient countries. Moreover, we account for regional and income heterogeneity across AfT recipient countries. Finally, in addition to aggregate AfT flows, we focus on the impact of one of the AfT components: aid for trade for trade policy and regulation. Funds allocated under this channel are designed to assist developing countries in liberalising their trade policies, carrying out trade facilitation and fostering regional integration.

Our empirical investigation conveys the following findings. First, the institutional gap between AfT donor and recipient countries (at both extensive and intensive margins) plays a moderating role in the outcome of AfT: the wider the institutional gap, the weaker the impact of AfT flows on exports of aid-recipient countries. Second, the results of our baseline models reveal that AfT for trade policy and regulation is effective in reducing the fixed costs of exporting, by enabling recipient countries to enter the exports markets, but it is not efficient in reducing the variable costs of exporting and increasing these countries' volume of exports to aid-donor countries. Third, when each of the regional and income disparities amongst recipient countries is accounted for, results show that aggregate AfT flows, as well as AfT targeting trade policy and regulation, have a positive and significant effect on recipients' trade at both margins. By and large, the trade-effect of AfT for trade policy and regulation flows is more pronounced than that of aggregate AfT flows. Fourth, when we estimate the impact of AfT across different regions of recipient countries, we find that countries in ECA, MENA and SSA are amongst the main winners. Finally, when we control for the different income level of AfT-beneficiaries, we find evidence that AfT flows have not benefitted middle-income countries as much as they did for the rest of the income groups.

A number of policy implications stem from our key findings. First, reforms aiming at strengthening the quality of institutions in recipient countries and reducing the institutional gap vis-à-vis donors, are necessary to harness the impact of AfT on their export performance. Second, in view of the considerable impact of AfT for trade policy on recipients' trade, notably in ECA, MENA and SSA, increasing the amounts disbursed of the latter flows would help those countries overcome structural constraints and speed up their insertion into world

markets. Given the incessant need of these countries to diversify their exports and create employment opportunities, obtaining more AfT flows is likely to be highly beneficial, with sizeable repercussions on their economies.

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