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**Working Paper**

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FERDI Working Paper, No. P153

**Provided in Cooperation with:**

Fondation pour les études et recherches sur le développement international (FERDI),  
Clermont-Ferrand

*Suggested Citation:* de Melo, Jaime; Wagner, Laurent (2016) : Aid for Trade and the Trade Facilitation Agreement: What they can do for LDCs, FERDI Working Paper, No. P153, Fondation pour les études et recherches sur le développement international (FERDI), Clermont-Ferrand

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# Aid for Trade and the Trade Facilitation Agreement: What they can do for LDCs\*

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## Abstract

The Aid for Trade (AFT) initiative, launched in 2005 to help developing and especially the Least Developed (LDCs) countries integrate the rules of the World Trade System adopted in the Uruguay Round turned out to be more about mobilizing support for the stalled Doha Round negotiations. A decade later, a broadened AFT agenda has eluded effective evaluation. The recently concluded Trade Facilitation Agreement (TFA) provides an ideal opportunity to narrow the scope of AFT activities to heed the call for “managing for Development results” (MfDR). The paper reviews the evidence on trade costs distinguishing between Least Developed Countries (LDCs) and Landlocked LDCS (LLDCs). The paper also includes new estimates of time in transit for international parcel data that is measured relatively accurately.

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\* This paper benefited from the financial support of the FERDI (Fondation pour les Etudes et Recherches sur le Développement International) and of the program “Investissement d’Avenir” (reference ANR-10-LABX-14-01) of the French government. We thank Mauro Boffa, Matthieu Boussichas, Olivier Cadot, Franz Lammersen, Patrick Guillamont, Petros Mavroidis, Evdokia Moïsé, Richard Newfarmer, Marcelo Olarreaga, Silvia Sorescu and Mariana Vijil for comments on an earlier draft.



.../. New estimates provide support for allocating a greater share of AFT funds towards LDCs and particularly towards LLDCs, both groups showing higher trade costs than comparators and less progress in reducing trade costs since 1995. On average, time in customs for imports and exports are also significantly higher for both groups than for their respective comparators. LDCs and LLDCs have systematically lower scores for the components in the new OECD Trade Facilitation Indicator (TFI). These new estimates suggest that a successful implementation of the TFA, defined as moving halfway towards the frontier value of the TFI for the respective country grouping could reduce trade costs for imports of LDCs by 2.5% and by 4.5% for LLDCs. Even though there is more to trade costs than customs management, monitoring implementation of the TFA would be part of the IPoA and a stepping stone towards the concrete trade performance targets that have lacked in AFT activities so far.

## **1. Aid-for-Trade: Where do we stand?**

The role of foreign aid in developing countries' strategies has gone through stages. In the early days of independence in the 1960s, when enthusiasm about the liberation from the colonial powers was strong, much hope was placed on foreign aid which would provide the necessary ingredient to reach Rostovian 'take-off' growth. As countries were then following a state-led industrialization strategy behind high trade barriers, this period could be described as one of 'aid but not trade' as pessimism about the prospects of developing countries' exports was great. As evidence of resource misallocation and corruption appeared, deception set in, and the pendulum shifted towards what one could describe as 'trade but not aid' as it was becoming increasingly evident that, apart from East Asia, the disappointing industrialization performance was largely due to countries' own trade policies rather barriers to access in export markets that were falling. Once trade barriers—especially tariffs—were slashed across developing, aid entered a third phase as, once more, performance was not improving as much as expected—especially among the Least Developed Countries (LDCs), ushering in the current phase of 'Aid For Trade' (AFT).

The AFT initiative launched in 2005 was part of the MDGs (goal 8 'developing a global partnership for development') with as objectives, a rules-based, open, multilateral trading system, improved market-access including duty-free, quota-free (DFQF) market access for LDCs, and above all to reduce poverty by half in 2015 relative to 1990 level, a target that has been reached in most countries. Now that the Sustainable Development Goals (SDGs) have been adopted by the UN General Assembly in September 2015, the main trade performance objective is a doubling of the global share of LDC exports by 2020 (already part of the Istanbul Program of Action (IPoA)). Now that WTO members have endorsed the TFA agreement signed in Bali in 2013, what is the role of AFT? In Melo and Wagner (2015), we focused on the trade-enhancing and poverty-reducing effects of AFT that were an objective of the MDGs. Here we focus on the benefits from a successful application of the TFA: a move towards results-based AFT and an evaluation of the benefits from reduced trade costs with a focus on LDCs and Land-locked Least Developed Countries (LLDCs).

At around \$40 billion disbursed a year, AFT is about 30% of Official Development Assistance (ODA) financial flows to developing countries (remittance flows are more than the combined ODA and FDI flows) and what is entered as Trade Facilitation in the OECD's Credit Reporting System (CRS) only accounts for about one percent of AFT disbursements.<sup>1</sup>

In the haste to garner support for the stalling negotiations at the Doha round, the objective to raise funds rapidly took precedence over the more fundamental objectives of providing assistance, financial and technical, to help developing countries, particularly LDCs, to build the needed supply-side capacity to 'implement and benefit from WTO agreements' they had signed up to in the Marrakech agreement under the 'Single Undertaking'. In the end, beyond winning the argument on mainstreaming trade in national development strategies, the biennial OECD-WTO AFT reviews turned out more about expanding the agenda than about conducting an evaluation of the effectiveness of AFT.<sup>2</sup> This led to the criticism that to facilitate evaluation, the scope of AFT activities should be considerably reduced (Hallaert (2013)).

The many evaluations of the AFT initiative have reached the conclusion that the objective of arresting the decline in the share of AFT in ODA disbursements has been met and that trade has been mainstreamed in national development strategies. However, trying to isolate the effects of AFT from other financial flows is like looking for a needle in a haystack.<sup>3</sup> This is why the attempts at detecting the effects of AFT, especially when it comes to aggregate outcomes like export growth and GDP growth have encountered attribution difficulties so that biennial OECD-WTO evaluations have focused on the rationale for AFT.<sup>4</sup>

The scope of the reviews evolved with two 'landmarks': the adoption of a 'results chain' approach (i.e. a shift towards management based disbursement of ODA along the lines suggested by the Development Assistance Committee at the OECD) at the third biennial review in 2011 (WTO 2011) and the fifth biennial review of June 2015 on "Reducing Trade Costs for inclusive Sustainable Growth" (WTO 2015) in the wake of the TFA. Now, the TFA presents the opportunity for AFT to

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<sup>1</sup> By the time the decisions about the reporting of AFT flows in the OECD's Creditor Reporting System (CRS) were finalized, 30% of all sector-allocable official development assistance was potentially attributable to aid for trade. Measurement issues plague the CRS making it difficult to know what really qualifies as AFT. For example, the CRS does not provide information about trade-related technical assistance and trade development which was previously collected under the joint OECD-WTO Trade Capacity Building Database. Disbursements for multilaterals are also tracked poorly. The annex in Cadot and Melo (2014b) discusses these shortcomings.

<sup>2</sup> For example, the WTO AFT workprogram for 2012-13 covered new issues ("gender empowerment", "green growth", "climate change", "global value chains" ) to keep up the momentum on mobilizing funds and it would maintain the interest of donors and development agencies in the Doha negotiations.

<sup>3</sup> After reviewing 106 studies, Doucouliagos and Paldam (2011) conclude that no causal relationship has been established. Purging for reverse causality (high-growth countries receive less aid subsequently—a 1% percent increase in growth reduces aid by 4%), over a sample covering 1960-2010, Bruckner (2013) finds that a 1% increase in aid increases growth by about 0.1 percentage points. Exploiting the rule that since 1987 the eligibility for IDA is determined by a per-capita income threshold, focusing on the 35 countries that have passed the threshold between 1987 and 2010, Galiani et al. (2014) estimate that a one percentage point increase in the aid to GNI ratio from the sample mean raises real per capita growth in GDP by approximately 0.35 percentage points.

<sup>4</sup> Cadot et al. (2014) review the studies attempting to disentangle the effects of AFT. Broader evaluations are found in Cadot and Melo (2014a) and Lammersen (2015).

move beyond the narrow focus on accountability (was the road built?) towards a management framework that can track better the results of AFT interventions. Equally important, the TFA provides the focal point needed for narrowing the scope of AFT. Implementing the TFA commitments should therefore be targeted towards countries with the highest trade cost that would benefit the most. The evidence discussed here suggests that a shift in trade facilitation disbursements towards LDCs and LL-LDC would provide the highest returns for AFT funds.

Successful implementation of the TFA would reduce uncertainty related to trade, streamline market access procedures and would provide greater transparency at customs, all factors leading to lower transaction costs. Higher trade volumes would then be an engine of growth and poverty reduction.

Starting from this background, Section 2 summarizes evidence on the importance of trade costs highlighting their importance for LDCs and LLDCs. The objectives and the rationale for the TFA are presented in section 3. Section 4 reviews the evidence on the effects of trade facilitation on trade costs and gives new estimates for country groups, focusing on LDCs and LLDCs. Section 5 reveals a lack of correlation between recent AFT disbursements categorized as Trade facilitation in the CRS and indicators of customs performance. Section 6 concludes.

## **2. Reducing trade costs should be the key objective for AFT**

Outcome indicators in Table 1 during the early AFT period show large differences in average values between landlocked LDCs [LLDCs] and non-landlocked LDCs [non-LLDCs] and also across the other two groups. Over the period, average per capita income of LLDCs is half that of non-LLDCs, itself half that of LL non-LDCs, itself half that of other developing countries (col. 1). LLDCs and non-LLDCs had respectable growth rates (col.2), the highest poverty rates (col. 3) and, on average high AFT disbursements (cols. 4 and 5). Governance indicators are lowest for both LDCs groups (col.6). Finally, average trade costs calibrated from gravity model estimates are highest in absolute terms for landlocked countries in their respective groups (col. 7) and the decline in average trade costs appear to be less for landlocked countries (they even increase for the LL- non-LDC group (col. 8). Figure 1 shows no indication of catching up for any country grouping up towards the average trade costs of the 10 lowest-cost countries in the sample during the AFT-initiative period<sup>5</sup>

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<sup>5</sup> In a larger sample, Melo and Wagner show that Landlocked Low income countries (LL-LICs) have been losing ground over the past 15 years relative to non-LL- LICs as their trade costs have been falling less rapidly. This partly reflects that, because LL-LICs trade mostly low-value products transported by sea, LL-LICs did not benefit much from the dramatic fall in air transport costs.

**Table 1: AFT and Outcomes by country category in developing countries:  
(Averages per country group over 2005-2011)**

Country categories (number of countries in parenthesis)	GDP <sub>pc</sub> 1	GDP <sub>pc</sub> growth 2	HR <sup>a</sup> (PG <sup>b</sup> ) 3	AFT <sub>pc</sub> 4	AFT / GDP 5	WGI <sup>c</sup> 6	Avg Trade Cost <sup>d</sup> 7	Trade Cost 2012 <sup>e</sup> 8
Landlocked LDC [LLDC](16)	507	3,9%	72,3 (35.3)	21,5	3,7%	-0,72	319.1	91.5
Non-landlocked LDC [non-LDC] (33)	1192	2,3%	66,5 (31.9)	34,2	3,4%	-0,78	273.9	78.8
Landlocked non-LDC [LL] (14)	2067	4,5%	20,7 (7.7)	19,7	1,2%	-0,65	289.7	99.4
Other Developing [DC] (87)	4833	2,6%	21,4 (8.2)	29,2	0,8%	-0,17	198.9	95.6

**Source:** OECD-DAC, WDI and Povcal.net. Includes LIC, LMIC and UMIC according to the World Bank classification.

**Notes:**

<sup>a</sup> HR is the head-count ratio is the proportion of the population below 2\$/day.

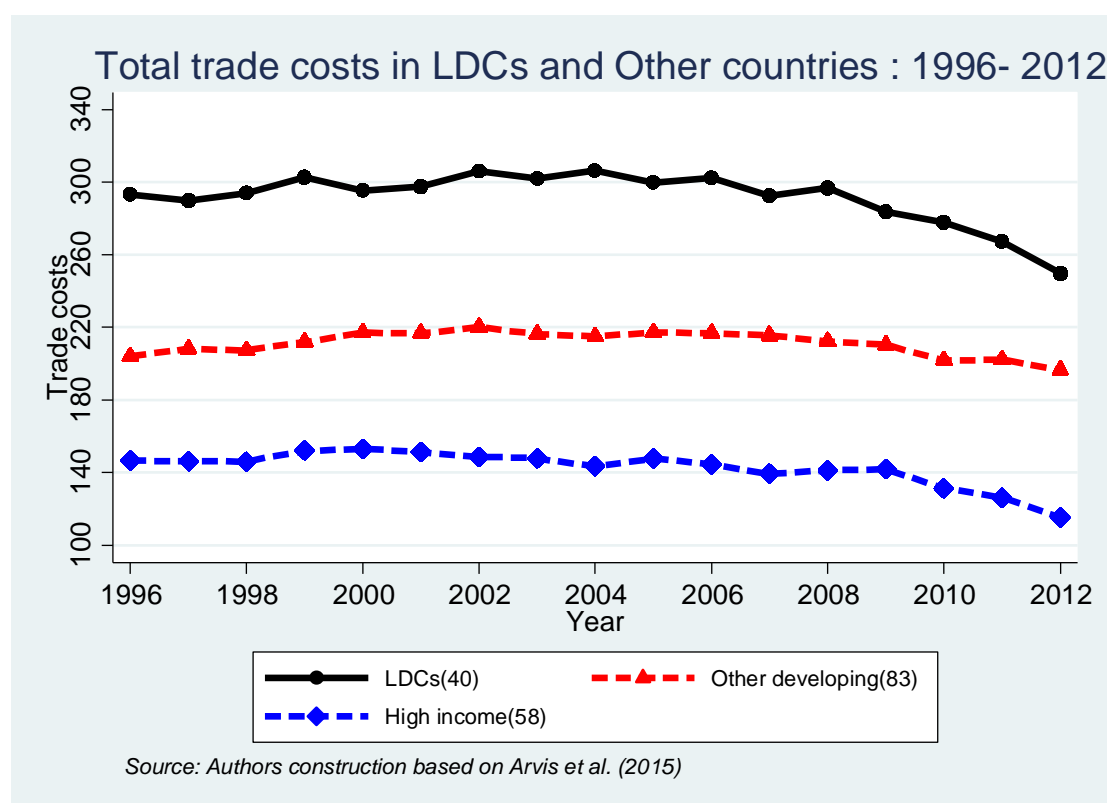
<sup>b</sup> PG is the poverty gap ratio i.e. the percentage of the population under the poverty line

<sup>c</sup> WGI is a Worldwide Governance Indicators (average score between -2,5 and +2,5 of the 6 indicators of the (Voice and Accountability, Regulatory Quality, Rule of Law, Political Stability and Absence of Violence, Government Effectiveness and Control of Corruption)

<sup>d</sup> Authors' construction based Arvis et al. (2016). Trade costs relative to the trade costs of the 10 countries with the lowest trade costs (normalized to 100).

<sup>e</sup> Trade costs normalized to 100 on 1995-1996 average.

**Figure 1: Trade Costs by Country classification**



Three components of trade costs have been scrutinized in models estimating the volume of trade: (i) geography (i.e. size, terrain natural infrastructure like water ways, country size, landlocked etc...); (ii) 'hard' infrastructure (roads, rail, ports, airports); (iii) 'soft' infrastructure (border-related costs like customs administration and document preparation, border-related policies like tariffs and NTMs in both domestic and destination markets, and behind-the-border policies like communications and regulatory policies). Of these, (ii) and (iii) are up for improvement by directed AFT. In most studies on the correlates of the volume of bilateral trade, indicators of geography and hard infrastructure capture a larger portion of the variance in trade costs than indicators of behind-the-border policies. Several studies also find that differences in the values of proxy indicators for the quality of hard infrastructure contribute more towards accounting for differences in trade costs than differences in geography.

While proxies for both components of trade costs are found to have an impact on the volume of trade, there is controversy on their relative importance and on the distribution of AFT between 'hard' and 'soft' infrastructure (about 10% of AFT disbursements go to soft infrastructure). For example, Limão and Venables (2000) estimated that hard infrastructure accounted for nearly half of the transport cost penalty borne by intra-African trade. Using spatial network software and gravity coefficients to estimate the impact of road improvements on trade, Buys et al. (2010) estimate that the payback horizon for road investment was barely over one year with a benefit-cost ratio (in terms of increased trade volume) of 8 to 1.

Recent geography models in which space is ordered and continuous also find support for the prediction that trade infrastructure (railroads, bridges, roads) has agglomeration-creating effects. This is a reflection that people want to exploit spatial proximity of trading opportunities with agglomeration in turn being accompanied by external economies. In this new geography vision of trade, trade infrastructure not only reduces trade costs but is also a source of income-raising agglomeration itself leading to strong multiplier effects from infrastructure. Armenter et al. (2014) develop such a model and give supporting evidence from the development of agglomerations around bridges in the US. These geography models with strong multiplier effects provide an explanation for the backwardness of LL countries and are more consistent with the large values for the macro correlations between trade and development which are larger than the gains from trade derived from neoclassical trade models.

Other evidences point towards the functioning of logistics markets as the main driver of cross-country differences in trade costs. Market power in maritime transport from 'shipping conferences' raise freight rates substantially. Estimates for the Caribbean by Wilmsmeier and Hoffman (2008) show that distance is trumped by the number of liner shipping companies providing services between pairs of countries in accounting for differences in pricing and Hummels et al. (2009) estimate that eliminating market power in shipping would raise trade volumes in Latin America by 15%. For road transport, Teravaninthorn and Raballand (2008) estimate that widespread bilateral trade agreements and cartels throughout West Africa result in freight rates per ton 80% higher and truck utilization rates 40% less than in East Africa. Casaburi et al. (2013) evaluate the effects of an EU



feeder road rehabilitation programme in Sierra Leone. They find that the market power of a few intermediaries is strongly reduced as the price of cassava is increased by 18% along rehabilitated roads and the costs of goods sold in rural areas is reduced.

In contrast to the emphasis on 'hard infrastructure', the implication of this work is that rather than following a 'big push' approach and build roads and bridges, donors should pursue a policy dialogue with recipient governments to improve regulatory frameworks and ensure competition in the provision of services. Improving the soft institutional and regulatory infrastructure will require less funding but is an integral part of trade costs. This is what the TFA is about.

### **3. Objectives and Rationale for the Trade Facilitation Agreement**

Fortuitously for AFT, the signing of the Trade Facilitation Agreement (TFA) in December 2013 suggests a rather clear road map for where AFT should be focused: identify the measures that will contribute most to reducing red tape and increase predictability in customs clearance (fees, formalities, transit). Requiring publication of procedures to clear goods will strengthen GATT article V on Transit. The obligation to issue advance rulings in a reasonable time-bound manner will strengthen GATT article X on transparency. Pre-shipment inspections to determine tariff classification and customs valuation will be forbidden as will be the introduction of measures making the use of customs brokers mandatory.<sup>6</sup>

Other measures should also improve transparency. For example, requests for revised charges will not be acceptable prior to publication of the new charges. Agencies and authorities in charge of border control will be obliged to cooperate and coordinate activities as has already started with the establishment of 'One-stop border posts'.<sup>7</sup> Best practices on Trade Facilitation recommended by the World Customs Organization included in the revised Kyoto Convention of 2006 on Trade Facilitation will require member states to establish and maintain procedures that will help expedite the release and clearance of goods in transit. These best practices are laid down in a detailed article that also obliges Member States to allow (to the extent possible) traders to make payments electronically for duties, fees and other customs charges.

By focusing resources on LDCs, especially LLDCs, AFT should contribute to the post-2015 development agenda in several ways. First, the TFA explicitly recognizes that technical assistance will be required for some LDCs that will then link their commitments to the receipt of technical assistance and support for capacity building. To this effect the TFA has designed three categories of commitments: A for immediate implementation, B for a date after a transitional period and C after a transitional period during which implementation capacity will have been acquired through

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<sup>6</sup> Drawing on firm surveys around Mozambique's tariff reform, Djankov and Sequeira (2014) estimate that corruption payments shifted from customs officials towards customs brokers.

<sup>7</sup> Using proximity analysis methods to build synthetic counterfactuals, Gathani Santini and Stoelinga (2013) estimate that the introduction of one-stop shops lead to an average increase in new firm creation of over 100 percent after the reform was introduced.

technical assistance, solving the so-called 'implementation problem' regarding financial assistance. A permanent Committee on Trade Facilitation at the WTO is to replace the Negotiating Group on Trade Facilitation that hosted the negotiations leading to the TFA.

Finger (2014) questions whether the TFA will solve the implementation problem by giving operational content within the GATT/WTO legal system to the provision of assistance to developing countries. Regarding what developing countries must accept (section II of the agreement), they are to submit substantive schedules for provisions they will accept that fall in three categories, schedule C corresponding to the provisions for which they would have a phase-in period and financial assistance. But the WTO legal system does not obligate the Donor members who would step forward to provide that financial assistance. Finger concludes that the TFA may be a case of transparency and moral suasion with no legal substance.

Second, the TFA has been signed by all WTO members so that it is rules-based rather than discretionary with specified appeal and review procedures. This gives the TFA a sense of country ownership that was identified as one of the key Paris principles on AFT but which was found to be lacking in the case-study reviews.<sup>8</sup> It is also in the spirit of the outcome of the Busan Partnership for Effective Development Cooperation which concluded that " (...) country-led and country-level results frameworks and platforms will be adopted as a common tool among all concerned actors to assess performance based on a manageable number of output and outcome indicators drawn from the development priorities of the developing country. " (cited in OECD 2013, p.23).

Third, as discussed below, progress on many TFA objectives can be monitored by indicators lending themselves to targets (e.g. whether borders are open at the same times would be one among measures of border agency coordination, acceptance of electronic payments would be a measure of efforts to speed release and clearance of goods, etc... see the list of indicators in the OECD Trade Facilitation Index (TFI) below). In turn, evidence has accumulated that these are targets leading to desired results for the AFT initiative.

Fourth, different approaches all point towards reduced trade volumes and lost time resulting from delays as goods travel from factory to consumer. Take first the time to trade and its impact on the volume of trade. Using the World Bank's Doing business data, Djankov et al. (2010) estimate that a 10 % reduction in the time to move cargo in a 20' container from production line to ship increases exports by 4%. Using the same data base for exports from SSA where most LLDCs are located, Freund and Rocha (2011) estimate that reducing travel time by one day increases exports by 7%. Using US import data, Hummels and Schaur (2013) estimate that a one-day reduction in trading time is equivalent to a 0.6 to 2.1 percentage point (1.3 mean estimate) tariff reduction in tariffs in the destination country (i.e. a reduction in trade costs).

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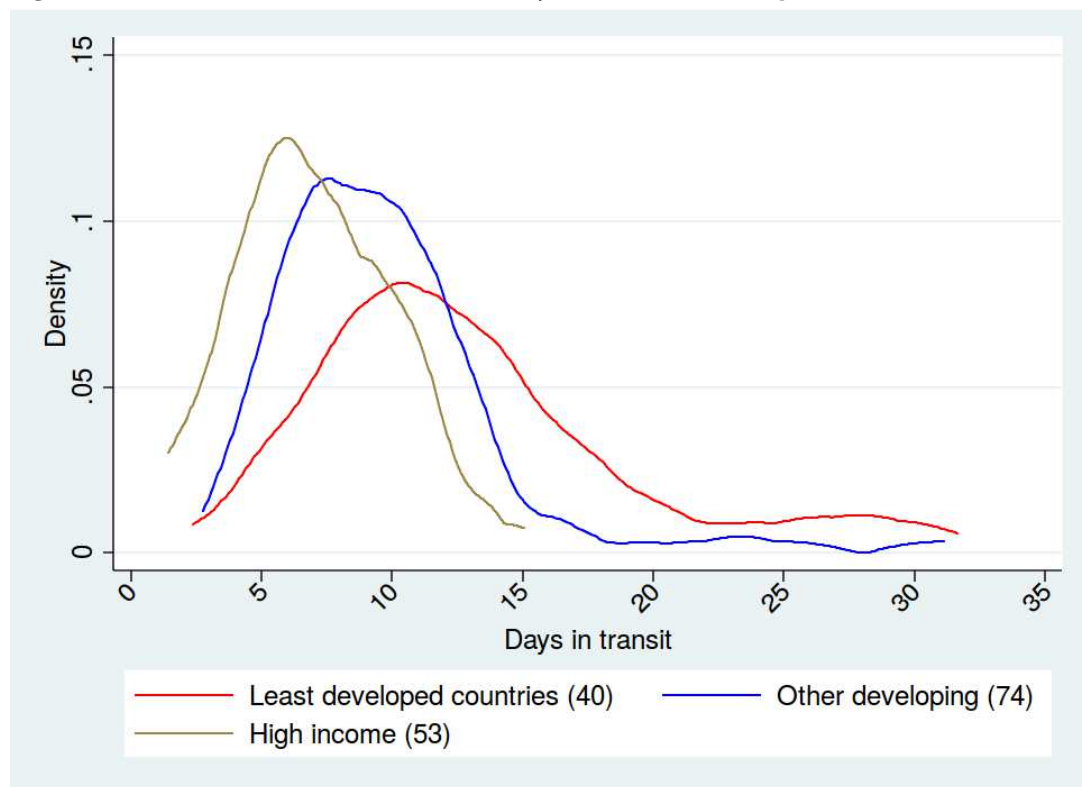
<sup>8</sup> The five principles are: country ownership, alignment, harmonization, managing for development results, and mutual accountability.

#### 4. Potential Benefits from implementing the Trade Facilitation Agreement (TFA)

The principal focus of the TFA is to reduce the time it takes to cross-borders, that is time spent in customs. Unfortunately, most information is from is built from the Doing Business (DB) data constructed from a small sample of freight-forwarders (usually 2 or 3 per country) for standard 20' containers that travel via maritime transport mode so it excludes times for intra-continental trade.<sup>9</sup>

A similar pattern appears when comparing shipping times for recipient countries from Universal Postal Union (UPU) data on transit time for packages up to 30kgs among a large group of countries.<sup>10</sup> Figure 2 shows the kernel density estimates of the time in transit (defined as time between sorting facilities) across three country groups (average days in transit in parenthesis): High income (7.0), LDCs (13.0) and other developing countries (9.7).<sup>11</sup>

**Figure 2: Distribution of time in transit (in days) for International parcels in 2013-2014**



**Source:** Authors' calculations from Boffa (2015)

<sup>9</sup> Melo and Wagner (2016, figure 2) report DB estimates for 2015 of 5.5 days for LL countries and 3.6 days for non-Landlocked (3.6). Benchmarking these average LL and non-LL time estimates on Hummels and Schaur mean estimate (a one-day reduction in trading time is equivalent to a 1.3% reduction in trade costs), suggests that import-competing activities have a  $[3.9=(1.9+1.1)*1.3]$  percent cost advantage relative to exporting in non-LL countries. The average number of days in import customs for LDCs (4.8) is also higher than for non-LDCs (3.7)

<sup>10</sup> The figures are drawn from an estimation of approximately 30 million bilateral parcel shipments averaged over a sample of 167 countries for 2013-14. Except for some European flows, shipments are by air. See Boffa (2015).

<sup>11</sup> There is no significant difference in transit times between LL and non-LL LDCs as corresponding averages for non-LL LDCs (12.8) and LL-LDCs (13.1).

How important is it to reduce time spent crossing borders? Using a data set covering all exports of Uruguayan firms over the period 2002-11, after controlling for unobserved heterogeneity both at the firm-year level (e.g. management changes) and at the firm-product-destination level, Volpe Martincus et al (2013) estimate that a 10% increase in the median time spent in customs is associated, on average, with a 1.8 percentage point reduction in the growth of firm-level exports.

These estimates from a large sample of customs transactions in one country and from parcel shipments where transit times are measured relatively accurately by a messaging electronic system are a useful check on the robustness of results derived from the DB data which is collected every two years from only a handful of freight forwarders in each country who are asked to report the time and cost for a 20' full container weighing 10 tons to cross the border.<sup>12</sup> Difficulties in assessing the reliability of DB data are discussed in Hallward-Dreier and Pritchett (2015).

Drawing data for 2011 and 2012, Sà Porto et al. (2015) estimate a gravity model of trade for 72 countries with dummy variables to proxy for the presence of an authorized economic operator, the existence of single window program for trade and the existence of a Mutual Recognition Agreement (MRA) between country pairs. They find that an authorized economic and a single window program are associated with greater bilateral trade, but that an MRA agreement has no effect on the volume of bilateral trade.

Following the signing of the TFA in December 2013, the OECD has produced and released a series of 11 Trade Facilitation Indicators (TFI) for 187 countries following closely the targets highlighted by the TFA. Currently this is the most detailed catalogue of the policies and procedures used in border management agencies around the world and arguably the best we have to closely assess more closely the trade cost handicaps faced across different group of countries. In the future, it can also serve to monitor progress toward the completion of reforms relating to the performance of customs mandated by the TFA. These eleven indicators can each take a value between 0 and 2 with higher values indicating better performance (Moïse and Sorescu (2011)). The data were initially collected for 2012 and have been updated in 2015.<sup>13</sup>

Figure 3 shows the distribution of each component of the TFI across country groupings comparing again LDCs with non-LDCs and LL with non-LL countries. Values for the LDC group are again systematically lower for each indicator than for the non-LDC group, though not always significantly so. For some categories like advance rulings, the differences between the groups is large, a pattern that is also apparent when the comparison is between LL and non-LL countries. As expected, on

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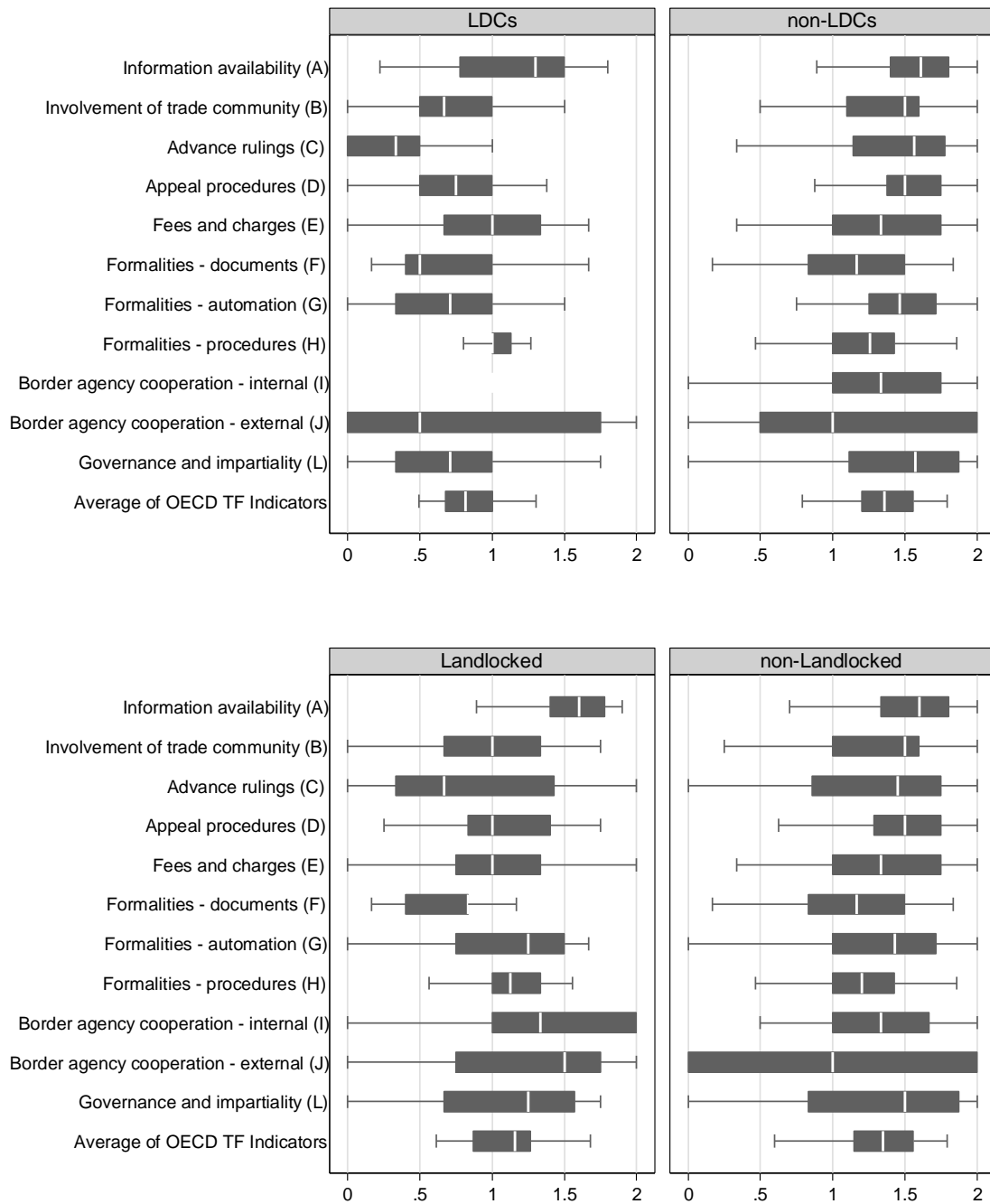
<sup>12</sup> Djankov et al. (2010) had data from 345 freight forwarders in 98 countries for 2005. Applying the results in Volpe Martincus et al. estimates for time in customs for exports to the most recent DB data suggests that firm export growth would be 9% less in LL than non-LL and in LDCs than in non-LDCs.

<sup>13</sup> Figure 3 lists the indicators. These cover the extent of automation, the clarity of appeal procedures, the extent of advance rulings, cooperation and governance. The initial data compiled by the OECD in 2011 was very spotty with complete data for each of the 11 indicators for only 39 countries. In 2015, a complete set of estimates is available for 116 countries (list in table A3).

average, border cooperation is greater for LL than for non-LL countries. The values for the governance & impartiality indicator are also lower for LDCs than non-LDCs and for LL than non-LL.

Arguably, most of these TF indicators are relatively easy to monitor and it is expected that their accuracy will be improved by implementation of the TFA. If implementation of the TFA is successful, time in customs should then be reduced as well as uncertainty since this would increase the use of advance rulings and clarity in procedures would be improved. The expected benefits, and evidence in support of these benefits are discussed below.

**Figure 3: Distribution of the scores on the components of the OECD TFI by country groupings (interquartile range across country groupings)**



**Source:** Author's calculations from OECD (2015). A higher value indicates better performance

Two measurable outcome variables of interest to monitor are time in customs and export volumes and their characteristics. Greater diversification is expected from a reduction in trade costs since fixed costs that prevent exporters from diversifying the same product to more markets or more products to the same market are reduced. Exporters with diversified export baskets are expected to resist better to trade shocks. Firms that did not export before may be able to export when fixed

costs fall (Melitz (2003)). Trade facilitation can therefore expand both existing exports (intensive margin effect) and create new trade flows (extensive margin effect). Expansion of existing exports and the birth of new exports would also be expected from reduced uncertainty in exporting activities. Controlling for other factors affecting bilateral trade, Moise and Sorescu (2013) find a positive correlation between bilateral trade flows and higher values for the TFI for 2012. Using the same data, Beverelli et al. (2014) estimate that gains in the number of products exported by destination and in the number of destinations are associated with higher values for the TFI. They estimate that the largest gains occurred for the SSA and Latin American regions.

Reduced time in transit is the second source of reduction in trade costs to be expected from implementing the TFA since, according to logistics professionals, time savings in customs is the preferred summary indicator of the private sector trade costs associated with clearing goods at the border. These gains should be greatest for countries with the greatest times in transit. From the evidence reviewed above, trade costs and time in transit are higher for LDCs than for non-LDCs and for LL than for non-LL countries. Estimates from the reduced time in customs resulting from improved TFI values can then be translated into reduced trade costs which are then translated into increased trade volumes. This is what Hillbery and Zhang (H&Z 2015) do when they correlate measures of the time in customs for imports and for exports from the DB data with the different components of the TFI described in figure 3 using data for 2012. We use the same approach but with the more complete TFI data 2015 and 2015 DB data.<sup>14</sup>

The approach involves transforming the discrete data of the time in customs (time in customs is measured in number of days) into a continuous measure. As in H&Z, we use a logit discrete-time transition model where the probability of staying extra time in customs for each time period ( $a=1, \dots, 15$  days), is the sum of two components: a constant for each time period and a second component that collects the coefficient values for each one of the variables in three groups: basic structural variables (GDP, LPI infrastructure quality index), policy variables (WGI) and the TFI variables. The model is estimated using a transformed set of data in which each country has as much repeated data as it has days in customs, each line representing a day in customs. For a typical country, presenting a time in import customs of 3 days, this observation is transformed into three observations taking a value zero for the first two and a value of one for the third. It is this transformation of discrete value into binary data that allows us estimate the logit model, described in the appendix.

Controlling for structural factors, and for policy variables with proxies, H&Z (2015, table 4) estimate that imports clear customs more rapidly in countries with good scores for two indicators in the OECD TFI data base: good governance & impartiality and the automation of procedures. They estimate that moving to best practice in all policies by all WTO members (those that will implement

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<sup>14</sup> Because only 39 countries had data for each of the 11 components, H&Z used imputation methods to construct a complete sample of 182 countries. By contrast, our estimates are only for the sample of 116 countries with complete data for all 11 indicators.

the TFA) would reduce the predicted time in customs by between 1.6 and 2.0 days. However, because imputation methods were necessary to complete missing data for many low-income countries, their results are, at best, suggestive. Estimations below are restricted to a full sample of 116 countries sample with full data (see the list in table A3). The estimations are also carried out for a breakdown of country groupings that distinguishes the LL and LDC groups from other developing countries. Both categories are recognized as 'objective' criteria by the UN agencies and could also be the prime target for trade facilitation funding to implement the TFA.

The informational content of this extended set of variables is, however, limited because of the strong collinearity within and across all set of variables: the 11 TFI variables, the policy indicators (WGI), and the structural factors including a subcomponent of the LPI representing the quality of infrastructure. Table A1 reports the significance of the TFI variables when entered separately and jointly in the logit model outlined above. Five patterns stand out. First, the statistical significance of the coefficients estimating the probability that time in customs will end on a certain day is always higher for imports than for exports, echoing the results in H&Z, justifying our concentration on time in customs for imports only. Second, as expected, higher values for the WGI and of the infrastructure quality indicators reduce significantly the estimated probability of time in customs, more strongly so for time for imports than for time for exports. Third, when entered jointly with the WGI and LPI infrastructure quality indicators, few among the coefficient values for the TFIs retain their significance casting doubt on estimations trying to distinguish the differential effects of say the different components of the set of formalities variables. Indeed, once WGI and infrastructure quality are removed from the equation, each of the 11 TFI indicator variables is significant when entered separately. This illustrates the difficulty of estimating with precision the relevance of targeted policy reforms and of discriminating between them at the macroeconomic level. As the correlations between each component of the TFI and of the WGI are significant, estimating the impact of each TFI indicator on the time in custom without controlling to some extent for the average level of governance in the country would lead to spurious results. Fourth, some patterns are intuitive. For example, when comparing patterns between imports and exports, involvement of the trade community is only significant for exports and formalities and fees are more important for imports than exports. Fifth, entering the TFI components separately and then jointly does not yield significant and stable coefficients making it illusory to try and estimate separately the gains in time from improvements in the individual components of the TFI.<sup>15</sup> Furthermore since the TFA aims to improve all aspects of customs captured in the individual measures it makes sense to look at the effects of the TFI rather than that of its individual components.

Table 3 reports hazard ratios of the extra time for imports in customs from the discrete time transition logit model. A positive coefficient value for a covariate (e.g. TFI) implies that a larger

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<sup>15</sup> TFI components for time in customs for exports are also less significant for H&Z (see table 4). The governance indicator is significant for both imports and exports for H&Z but not here while the significance of formalities (automation) in H&Z is here replaced by significance for formalities relating to documents. External cooperation is not significant for exports in H&Z. Principal component analysis could be a way to explore the robustness of individual components, but it would still be difficult to ascertain the reliability of the selection process.



value of that variable reduces the probability of staying longer in customs. Coefficients have the expected signs and some, like the LL dummy are significant across all specifications. Furthermore, as displayed in column 5, dropping developed countries from the sample does not change much the results. The TFI coefficient is statistically significant at the 1% level, except when it is entered jointly with the WGI because of the highly significant correlation between the two indices. The SIDS dummy is never significant.

**Table 3: Correlates of the expected number of days in import customs in 2015**

**Discrete time transition model**

	Logit	Logit	Logit	Logit	Logit
Column	1	2	3	4	5
GDP per capita (in log)	-2.788*	-1.559	-0.987	-1.015	-4.908*
	(1.546)	(1.731)	(1.539)	(1.675)	(2.867)
GDP per capita squared (in log)	0.181*	0.082	0.064	0.050	0.307*
	(0.095)	(0.106)	(0.094)	(0.103)	(0.184)
GDP (in log)	-0.145	0.034	-0.536***	-0.191	-0.170
	(0.137)	(0.139)	(0.174)	(0.199)	(0.219)
Land area in squared KM (in log)	-0.105	-0.110	0.067	-0.023	-0.138
	(0.116)	(0.122)	(0.130)	(0.132)	(0.159)
OECD dummy	1.864***	0.871	1.343**	0.792	0.630
	(0.633)	(0.643)	(0.609)	(0.623)	(0.920)
Landlocked developing dummy	-0.735*	-0.910**	-0.967**	-0.923**	-0.875*
	(0.385)	(0.425)	(0.448)	(0.466)	(0.481)
SIDS dummy	1.348	1.397	1.639	1.548	1.441
	(1.199)	(1.127)	(1.163)	(1.129)	(1.128)
Trade Facilitation Index	<b>2.393***</b>	<b>1.286*</b>	<b>2.034***</b>	<b>1.313*</b>	<b>1.779**</b>
	<b>(0.624)</b>	<b>(0.681)</b>	<b>(0.641)</b>	<b>(0.683)</b>	<b>(0.788)</b>
World Governance Index (WGI)		2.050***		1.595***	1.416**
		(0.406)		(0.471)	(0.568)
Infrastructure Quality (LPI)			2.372***	1.227*	1.380**
			(0.567)	(0.650)	(0.691)
Observations	332	332	318	318	257
Pseudo R2	0.220	0.286	0.261	0.292	0.218

**Source:** Authors' calculations. Sample in table A3.

**Notes:** Hazard ratios. Robust standard errors in parentheses, + p<0.15, \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

SIDS: Small island Developing States. The WGI is the simple average of the 6 components of the World Bank's WGI. The Infrastructure Index corresponds to the Infrastructure component of the World Bank's LPI.

Only countries for which all 11 TFI components are available are included in the sample (list in table A3)

Column 5 excludes HIC countries from the sample.

The estimates in table 3 are used for two counterfactual scenarios in table 4 each translating the estimated gain in reduced time in customs for imports from improved values of the TFI into a percentage reduction in trade costs using the mean estimated reduction in trade costs from a day's reduction in transport from Hummels and Schaur mentioned earlier. The first counterfactual is the

estimated gains from moving to the frontier (cols. 3 and 4) and the second, more realistic goal, is moving to the best performance of its income group (cols. 5 and 6). All estimates are computed across countries as medians in the relevant groups. For example, if the TFI median value of the TFI indicator for the LIC group were to reach the frontier value over the sample, the median number of days in customs for the LIC group would be reduced by 1.9 days equivalent to a percentage reduction in trade costs of 2.4% (col. 4). Concentrating on the more realistic objective of moving to the best performance of its group, the results suggest a gain ranging from 3% of trade costs for LDCs to 3.8% for LL developing countries (col. 6). When estimated coefficients are taken from table 3 column 5 (i.e. excluding the HIC from the sample), estimated gains for LLDCs are 4.5%. In the fierce competition of our globalized world, these are not insignificant estimates. And although these estimates are only for time in customs for imports, several of the gains would also apply for time in customs for exports.

**Table 4: Simulated impact of the TFA on the number of days in import customs in 2015**

**Discrete time transition model**

Categories	Median Time in Import Customs (in days)  <i>Observed</i>	Median Time in Import Customs (in days)  <i>Fitted</i>	All indicators at frontiers (TFI=2) <sup>a</sup>	Equivalent % reduction in trade costs <sup>a</sup>	All indicators at the best performance of their income/group category	Equivalent % reduction in trade costs <sup>b</sup>
Column	1	2	3	4	5	6
All	2	1.6	1.0	0,8%	1.3	0.4%
LIC	4	3.6	1.7	2.4%	3.0	0.7%
LMIC	4	4.1	2.3	2.3%	3.5	0.9%
UMIC	2	2.2	1.1	1.4%	1.4	1.0%
HIC	1	0.2	0.1	0.1%	0.1	0.1%
LDC	4	5.4	1.9	4.5%	3.2	3.0% (2.4%) <sup>c</sup>
LL developing	5	7.3	3.6	4.9%	4.4	3.8% (3.0%) <sup>c</sup>
LLDC	5.5	8.3	3.5	6.3%	6.3	2.7% (4.5%) <sup>c</sup>

**Notes:** Author's calculations from table 3 column 4 (and column 5 in parenthesis) estimates.

<sup>a</sup> Equivalent % reduction in trade costs estimates in cols. 4 and 6 is the gain in time multiplied by the mean estimate of 1.3% estimate of Hummels and Schaur (2013). Estimates rounded to first decimal (col2- col3)\*1.3%.

<sup>b</sup> (col2- col5)\*1.3%

<sup>c</sup> figures in parenthesis are from estimates of table 3, column 5.

## 5. Has AFT funding been directed towards countries with greatest potential gains from the TFA?

Section 4 estimates suggest potentially sizable gains in reduced trade costs from implementing the TFA. Here we check for any systematic patterns in the most recent (2013) data on AFT disbursements. Table A4 reveals no significant correlation between AFT funding commitments and either the DB or the TFI index. Table 5 reports regression results of Trade facilitation disbursements against standard control variables (population and GDP) and indicators of trade facilitation, focusing on imports since imported inputs are usually needed for exports. Acknowledging that these results relate to a period prior to the implementation of the TFA, three comments are in order. First, the positive correlation in cols. 1 and 2 suggests that, if anything, trade facilitation disbursements are directed more often than not towards countries that are the closest to the TFA targets. Second, the results in columns 3 to 6 show that the geographical pattern of disbursements is not significantly correlated with any of the usual proxies of trade facilitation (DB time in customs, LPI). Third, all else equal, LL countries receive larger commitments of aid for trade facilitation.

**Table 5: Correlates of the CRS category aid to trade facilitation**

AFT – Facilitation (Current US\$, log)	1	2	3	4	5	6
OECD – TFI (in log)	1.577** (0.697)	1.238* (0.669)				
DB - Time in import customs (in days, log)			-0.264 (0.345)	-0.517 (0.360)		
LPI – Customs efficiency (in log)					-0.531 (1.636)	-0.055 (1.605)
DB - Total import time (minus customs, days, log)	0.028 (0.405)	0.257 (0.388)	-0.060 (0.422)	0.591 (0.425)	-0.349 (0.408)	0.193 (0.425)
Population (log)	1.097*** (0.219)	0.549* (0.329)	0.830*** (0.175)	0.314 (0.221)	0.798*** (0.209)	0.212 (0.277)
GDP (current \$, log)	-0.540** (0.222)	-0.169 (0.283)	-0.224 (0.173)	0.070 (0.203)	-0.182 (0.192)	0.116 (0.222)
AFT – Hard Infrastructure (Current US\$, log)		0.234** (0.109)		0.199* (0.110)		0.189 (0.123)
AFT – Soft Infrastructure (Current US\$, log)		0.194 (0.187)		0.173 (0.124)		0.252* (0.151)
AFT – Trade Policy (Current US\$, log)		-0.043 (0.131)		0.115 (0.104)		0.064 (0.128)
Landlocked developing dummy	0.422 (0.514)	0.445 (0.505)	0.898* (0.478)	0.633 (0.442)	1.028* (0.521)	0.662 (0.535)
Sids dummy	0.590 (0.771)	0.573 (0.859)	0.476 (0.489)	0.260 (0.521)	0.560 (0.569)	0.449 (0.642)
Number of countries	86	83	110	103	96	90
Regional dummies	YES	YES	YES	YES	YES	YES
R2	0.388	0.437	0.428	0.506	0.305	0.391

**Source:** Authors' calculations. Dependent variable is the logarithm of Trade Facilitation disbursements in the CRS data base (Current US\$). OLS estimates. CRS is the Credit Reporting System used by the OECD to categorize AFT flows.

**Notes.** Each specification includes a constant and 5 regional dummies. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Robust standard errors in parenthesis.

## 6. Conclusion remarks

With its focus on measurable outcomes, the Trade Facilitation Agreement (TFA) has breathed new life in the AFT agenda. Taking implementation of the TFA seriously would lend itself to this measurable target approach. For example, an objective might be to reduce by one-third the time in customs for imports and exports by a specified date. This focus would have a double benefit: mobilizing support in donor countries and answering the call for Managing for Development Results (MfDR) repeatedly mentioned in the biennial OECD-WTO reviews.<sup>16</sup> Even though there is more to trade costs than customs management, monitoring implementation of the TFA would be a stepping stone towards the concrete trade performance targets that have been lacking in AFT activities so far.

This said, the TFA is a best-shot endeavor based on promises rather than on legal content. On the one hand, developing countries do not have to engage into bargaining as they only have to submit schedules of the substantive provisions of section I dealing with limits and procedures for customs administration that they would accept---what Finger (2014) notes is akin to a tariff agreement without tariff schedules. On the other hand, there is no operational content for donor assistance which remains beyond the purview the WTO legal system.

Hopefully, the review of the evidence and new estimates reported here provide support for redirecting a greater share of AFT funding towards LDCs and particularly towards Landlocked LDCs (LLDCs), both groups showing higher trade costs than comparators and less progress in reducing trade costs since 1995. These patterns are reflected in time in customs, the objective for improvement in the TFA. On average, time in customs for imports and exports are significantly higher for both groups suggesting that it will be difficult for them to meet the IPoA target of doubling the trade share of LDCs in world trade by 2020. Estimates reported here suggest that a successful implementation of the TFA proxied as a move of individual group members to the group frontier could reduce trade costs for imports by 2% for LDC and 3% for LLDCs.

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<sup>16</sup> Since 2012, the World Bank has a third lending instrument called 'Program for Results', the first to link directly disbursements to results. Up to 5% of World Bank lending can go through this instrument which is still in its early stages, but has apparently met with success. See Gelb and Hashmi (2014).

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## Annexes (not submitted for publication)

### Annex 1: The discrete-time Transition model

The model is the same as the one used by Hillberry and Zhang (2015) taking explicitly into account the fact that the number of days in import or export customs expressed in days represents a discrete approximation of a continuous outcome. To treat the discrete number of days in customs as a continuous phenomenon, they apply a discrete-time transition model where they estimate the conditional probability that a shipment will clear customs on a given day. This approach of discretisation of continuous time helps set up a counterfactual to assess clearly the impact of facilitation reforms in terms of reduction of time in customs.

Assume as in Hillberry and Zhang (2015), a logistic cumulative distribution function and a Weibull distribution for the baseline hazard. Then, the hazard function for the logit discrete-time transition model is:

$$\lambda^d(t_a|x) = \Pr(t_{a-1} \leq T < t_a | T \geq t_{a-1}, x) = [1 + \exp(-z(a, x))]^{-1}$$

with grouping points,  $t_a = a$ ,  $a = 1, 2, \dots, A$ , where  $A$  is the maximum observed time in days and where  $z(a, x)$ , using the logit model formalization, is specified as:

$$z(a, x) = \lambda_a + \gamma_X X + \eta_{ai}$$

where  $\gamma_X$  are estimation parameters,  $X$  is vector of covariates and  $\eta_{ai}$  is an error term.  $\lambda_a$  is the baseline hazard function assumed to be analogous to a Weibull distribution as  $\lambda_a = (q - 1) \cdot \ln(t)$ ,  $q$  being a parameter to be estimated.

To simulate the impact of reforms on the time spent in customs, we compute the conditional mean duration as:

$$t^* | x = \sum_{t=1}^A t \cdot S(t)$$

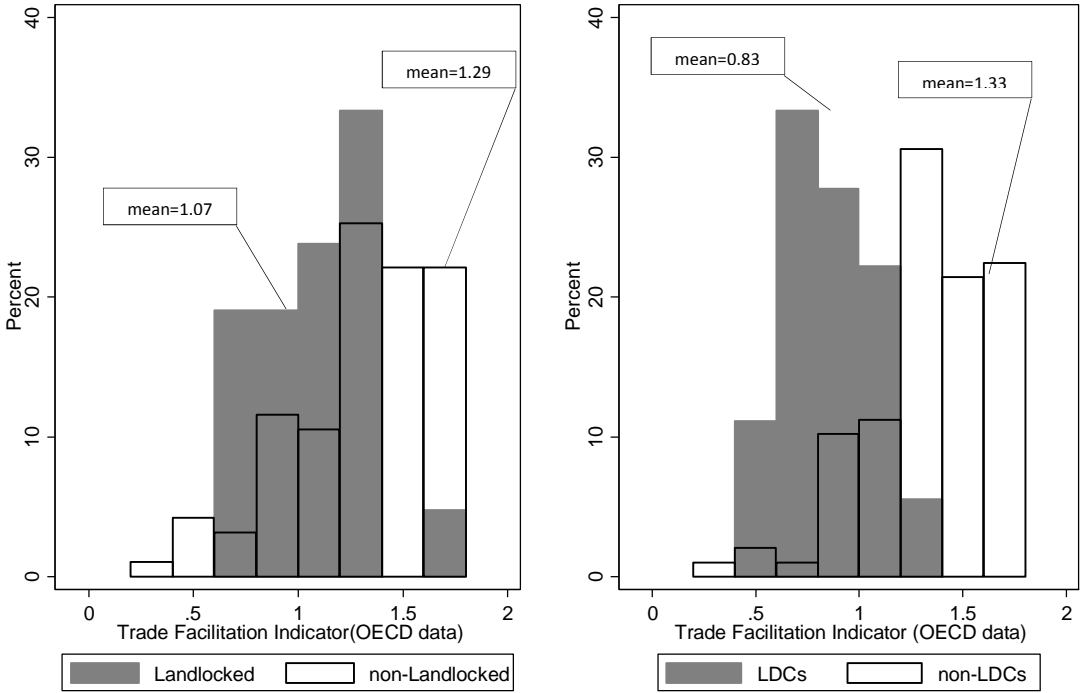
where  $S(t)$  is the survival function defined as:  $S(t) = \prod_{t=1}^A [1 - \lambda^d(t|x)]$ . Estimating  $t^* | x$  for different values of covariates  $x$  indicates the impact of changing  $x$  on the expected time required to clear customs.



**Annex 2: Figures and tables**

Figure A1 shows the distribution of the global TFI indicator values obtained as the simple average of the 11 indicator values listed in table 2. The distributions show greater dispersion for the LDC than for the non-LDC group and also for the LL group.

**Figure A1: Trade Facilitation (as the simple average of the 11 OECD TFI indicators) in landlocked countries and LDCs**



Source: Authors’ calculations from OECD (2015)

Table A1 compares the significance of the Logit estimates for time in customs for imports and for exports. Each TF indicator is entered separately with both sets of controls (cols. 2 and 4) and jointly with all TFI indicators (cols. 3 and 5). The table only reports the significance of the coefficient estimates with the coefficient estimates for time in customs for imports reported in table A2.

**Table A1: Summary comparison of Logit estimates of the Discrete time model for time in customs for imports and exports**

Model	(1)	(2)	(3)	(4)	(5)
	Number of non-zero observations	Time in import customs	Time in import customs	Time in export customs	Time in export customs
		sequential	complete	sequential	complete
World Governance index (WGI) <sup>a</sup>	170	***	**	°	°
Infrastructure Index(LPI) <sup>b</sup>	146	*	*	*	*
TFI	110	*	*	-	-
Information availability (1)	139	-	-	-	-
Involvement of the trade Community (2)	136	-	-	*	°
Advance Rulings (3)	136	°	-	-	-
Appeal Procedures (4)	138	-	-	-	-
Fees and charges (5)	139	*	-	-	-
Formalities-Documents (6)	139	*	°	°	°
Formalities-Automation (7)	139	°	-	-	-
Formalities-Procedures (8)	139	-	°	-	-
Internal Cooperation (9)	135	-	-	-	-
External cooperation (10)	114	°	-	°	°
Governance and impartiality(11)	139	-	-	-	-

Source: Author's estimates from OECD (2015). Coefficient values for cols. 2 and 3 are reported in table A2.

Notes:

<sup>a</sup> Average indicator only introduced when the 11 indicators are introduced jointly

\*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%, ° significant at 15%, - not statistically significant

**Table A2: The impact of the TFA on the number of days in import customs in 2015, Discrete time transition model**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Logit	Logit	Logit	Logit	Logit	Logit	Logit	Logit	Logit	Logit	Logit	Logit
WGI	1.916*** (0.463)	1.767*** (0.492)	1.922*** (0.468)	1.940*** (0.472)	1.658*** (0.484)	1.511*** (0.500)	1.768*** (0.462)	1.911*** (0.469)	1.864*** (0.459)	1.871*** (0.454)	1.765*** (0.463)	1.615** (0.643)
LPI	1.104* (0.653)	1.206* (0.661)	0.984+ (0.666)	1.096* (0.647)	1.402** (0.704)	0.865 (0.683)	1.223* (0.660)	1.100* (0.651)	1.123* (0.649)	1.307* (0.669)	1.144* (0.647)	1.794* (0.942)
TFI (a)	-0.079 (0.419)											-0.833 (0.592)
TFI (b)		0.288 (0.362)										0.311 (0.454)
<b>TFI (c)</b>			<b>0.393+</b> <b>(0.247)</b>									0.324 (0.333)
TFI (d)				-0.151 (0.478)								-0.603 (0.660)
<b>TFI (e)</b>					<b>0.782*</b> <b>(0.405)</b>							0.767 (0.535)
<b>TFI (f)</b>						<b>1.198*</b> <b>(0.624)</b>						<b>1.045+</b> <b>(0.706)</b>
<b>TFI (g)</b>							<b>0.612+</b> <b>(0.394)</b>					0.270 (0.529)
TFI (h)								-0.061 (0.599)				<b>-1.492+</b> <b>(0.925)</b>
TFI (i)									0.162 (0.283)			0.321 (0.352)
<b>TFI (j)</b>										<b>0.358+</b> <b>(0.247)</b>		0.359 (0.312)
TFI (k)											0.391 (0.348)	0.593 (0.635)
Observations	318	318	318	318	318	318	318	318	318	318	318	318
Pseudo R2	0.282	0.284	0.288	0.282	0.292	0.293	0.289	0.282	0.283	0.287	0.286	0.325

Note: Hazard ratios. Each specification includes the same control variable as in Table 1 col. 4. Robust standard errors in parentheses, + p<0.15, \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. The World Governance Index is the simple average of the 6 components of the World Governance Indicators of the World Bank. The Infrastructure Index corresponds to the Infrastructure component of the World Bank's Logistic Performance Index. The components of the OECD's TFI are the following: (a) Information availability, (b) Involvement of trade community, (c) **Advance rulings**, (d) Appeal procedures, (e) **Fees and charges**, (f) **Formalities – documents**, (g) **Formalities – automation**, (h) Formalities – procedures, (i) Border agency cooperation – internal, (j) **Border agency cooperation – external**, (k) Governance and impartiality. Only countries for which all 11 TFI components are available are included in the sample.

Source: Authors' calculation base on OECD & World Bank data

**Table A3****List of 116 countries for which all OECD Trade Facilitation Indicators are available**

Country	Income group	LDCs	Landlocked developing
Burkina Faso	LIC	LDC	LLDC
Burundi	LIC	LDC	LLDC
Congo, Democratic Rep.	LIC		
Ethiopia	LIC	LDC	LLDC
Gambia, The	LIC	LDC	
Liberia	LIC	LDC	
Malawi	LIC	LDC	LLDC
Mali	LIC	LDC	LLDC
Mozambique	LIC	LDC	
Rwanda	LIC	LDC	LLDC
Sierra Leone	LIC	LDC	
Uganda	LIC	LDC	LLDC
Zimbabwe	LIC		LLDC
Armenia	LMIC		LLDC
Bangladesh	LMIC	LDC	
Bolivia	LMIC		LLDC
Cameroon	LMIC		
Congo, Rep.	LMIC		
Cote d'Ivoire	LMIC		
Djibouti	LMIC	LDC	
Egypt	LMIC		
El Salvador	LMIC		
Ghana	LMIC		
Guatemala	LMIC		
India	LMIC		
Kenya	LMIC		
Kyrgyz Republic	LMIC		LLDC
Lao PDR	LMIC	LDC	LLDC
Lesotho	LMIC	LDC	LLDC
Moldova	LMIC		LLDC
Morocco	LMIC		
Myanmar	LMIC	LDC	
Nicaragua	LMIC		
Nigeria	LMIC		
Pakistan	LMIC		
Philippines	LMIC		
Senegal	LMIC	LDC	
Ukraine	LMIC		
Uzbekistan	LMIC		LLDC
Vietnam	LMIC		
Zambia	LMIC	LDC	LLDC
Albania	UMIC		
Algeria	UMIC		
Azerbaijan	UMIC		LLDC
Bosnia and Herzegovina	UMIC		
Botswana	UMIC		LLDC
Brazil	UMIC		
Bulgaria	UMIC		
China	UMIC		
Colombia	UMIC		
Costa Rica	UMIC		
Dominican Republic	UMIC		
Ecuador	UMIC		
Gabon	UMIC		
Jamaica	UMIC		
Jordan	UMIC		
Lebanon	UMIC		
Macedonia, FYR	UMIC		LLDC
Malaysia	UMIC		
Mexico	UMIC		
Mongolia	UMIC		LLDC
Montenegro	UMIC		
Namibia	UMIC		
Panama	UMIC		
Paraguay	UMIC		LLDC
Peru	UMIC		
Romania	UMIC		
Serbia	UMIC		
South Africa	UMIC		
Thailand	UMIC		
Tunisia	UMIC		
Turkey	UMIC		
Argentina	HIC		
Australia	HIC		
Austria	HIC		
Bahrain	HIC		
Belgium	HIC		
Canada	HIC		
Chile	HIC		
Croatia	HIC		
Cyprus	HIC		
Czech Republic	HIC		
Denmark	HIC		
Estonia	HIC		
Finland	HIC		
France	HIC		
Germany	HIC		
Greece	HIC		
Hungary	HIC		
Ireland	HIC		
Israel	HIC		
Italy	HIC		
Japan	HIC		
Korea	HIC		
Kuwait	HIC		
Latvia	HIC		
Lithuania	HIC		
Luxembourg	HIC		
Netherlands	HIC		
New Zealand	HIC		
Norway	HIC		
Poland	HIC		
Portugal	HIC		
Qatar	HIC		
Russian Federation	HIC		
Singapore	HIC		
Slovak Republic	HIC		
Slovenia	HIC		
Spain	HIC		
Sweden	HIC		
Switzerland	HIC		
United Arab Emirates	HIC		
United Kingdom	HIC		
United States	HIC		
Uruguay	HIC		
Venezuela	HIC		

**Table A4: Correlations between aid-for-trade, aid for trade facilitation and trade facilitation indicators for 119 countries**

Correlation matrix ( <i>p-value in parenthesis</i> )	Aid for Trade in 2013 (current US\$)	Aid for Trade Facilitation in 2013 (current US\$)	OECD - Trade Facilitation Index in 2015	Doing Business – Time in import Customs in 2015	Logistic Performance Index – Customs Performance in 2015
Aid for Trade in 2013 (current US\$)	1				
Aid for Trade Facilitation in 2013 (current US\$)	0.42 (0.00)	1			
OECD - Trade Facilitation Index in 2015	0.08 (0.34)	-0.05 (0.56)	1		
Doing Business – Time in import Customs in 2015	0.02 (0.79)	0.07 (0.46)	-0.41 (0.00)	1	
Logistic Performance Index – Customs Performance in 2015	-0.04 (0.62)	-0.21 (0.03)	0.45 (0.00)	-0.42 (0.00)	1

**Source:** authors' calculations from OECD and World Bank data



*“Sur quoi la fondera-t-il l'économie du monde qu'il veut gouverner? Sera-ce sur le caprice de chaque particulier? Quelle confusion! Sera-ce sur la justice? Il l'ignore.”*

Pascal



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