FONDATION POUR LES ÉTUDES
ET RECHERCHES
SUR LE DÉVELOPPEMENT
INTERNATIONAL

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
WORLD BANK

International
Trade
Centre

Aid for Trade Effectiveness:

Complementarities with Economic Integration

By

Mariana Vijil
INRA, UMR1302 SMART, Rennes

Paper prepared for the workshop :
"Aid for Trade: What Have we Learnt? Which way Ahead?"
6 December 2012, International Conference Centre, Geneva

This version : November 2012

Aid for Trade Effectiveness: Complementarities with Economic Integration

Mariana Vijil

INRA, UMR1302 SMART, Rennes

Preliminary version, November 2012

ABSTRACT

During the last decade, developing countries have been using regional integration as one of the main tools when pursuing a trade-led growth strategy. Today, modern preferential trade agreements tend to go beyond trade policy negotiations, by also covering trade facilitation issues. Since aid for trade has been recognized as a powerful instrument for increasing developing countries' trade capacity by targeting internal trade costs, this study aims to test whether complementarities exist between this type of aid and economic integration. I assess this question by using a gravity model on panel data for the period 1995 to 2005 that includes multilateral resistance terms. Results tend to indicate that aid for trade is effective and that its impact increases with further economic integration. Nevertheless, the combination of a trade-related aid package with preferential market access seems to have been ineffective when increasing developing countries' exports to the North. Finally, braking down aid for trade into categories, I find that assistance to trade-related institutions seems to generate the stronger complementarities with economic integration.

I- INTRODUCTION

The empirical evidence has demonstrated that trade can be a powerful engine for enhancing economic development and poverty reduction (Winters et al., 2004). Thus, developing countries have pursued a trade-led growth strategy and regional integration has become one of the main tools. Moreover, the temporary impasse in multilateral negotiations at the Doha Round has further motivated countries -whether developed and developing- to use regionalism as an instrument to continue trade liberalization.

This has given rise to a proliferation of reciprocal Preferential Trade Agreements (PTA); as of middle-2012, almost 300 PTA have been notified to the WTO and countries tend to belong to several different agreements. Part of this success is explained by the attractiveness of PTAs compared to multilateral ones; a smaller number of players, a possibility to deepen market access in the sectors with the highest pay-offs and a short-term advantage in terms of preferential margins.

Within a static framework, the expected results for PTAs are trade creation and/or trade diversion effects; the welfare impact depending on the magnitude of these two forces. In a dynamic context, PTAs are often related to a package of reforms and institutional arrangements. It involves features such as technology and knowledge transfer, exchange networks' facilitating institutions, or coordination and cooperation mechanism. These dimensions can have important positive dynamic effects on trade flows and ultimately, growth and welfare.

Indeed, for some developing countries, an increase in trade does not depend exclusively on market access. In fact, some of the poorest developing such as the Least Developed Countries (LDCs) already have relatively free access to major markets. International traders may face other - at the border - and – beyond the border - trade costs; such as burdensome procedures,

transit bottlenecks and absence of certification agencies. Using aid to address these constraints can have high payoffs and may be the primary source of benefits.

In recognition of this, trade facilitation issues started to be negotiated at the WTO in 2004 on the basis of the "July package", and modern PTAs are increasingly including these issues in their negotiation agendas (Chauffour and Maure, 2011). While North-South agreements tends to concentrate on a narrow definition of trade facilitation, very close to what is currently discussed at the WTO (–at the border- costs such as custom procedures); South-South agreements instead tend to go further in their trade facilitation vision, with negotiations on –behind the border- issues such as transit corridors and business environment. In any case, developing countries are increasingly pointing out the need for assistance in covering the costs of implementing trade facilitation measures, whether this is done by Official Development Assistance (ODA) trough aid for trade or by PTA members' cooperation.

In this respect, the development community has given rise to an increase in ODA directed toward sectors where domestic constraints to trade persist. This renew of interest in non-social aid can be illustrated by the lunch of the Aid for Trade (AfT) initiative at the Honk-Kong WTO Ministerial conference in 2005. Aid flows covered by this initiative aim to assist developing countries in their attempt to enhance export performance and integration into the global economy, by targeting their own domestic constraints; such as a lack of knowledge, excessive red tape, insufficient financing and poor infrastructure. The AfT Task Force defines this initiative as assistance to developing countries to increase exports of goods and services, to integrate the multilateral trading system, and to benefit from liberalized trade and increased market access. Furthermore, AfT should increase economic growth and reduce poverty, while complementing multilateral trade negotiations.

Despite the ongoing debate on aid effectiveness following the "Paris Declaration", there is little evidence on the success or otherwise of previous attempts to support trade performance.

And considering the reduction of donors' budget allocated toward ODA after the financial crisis, there is an urge to provide a precise measure of the effectiveness of trade assistance. Moreover, even if - at the border- and internal trade costs issues have been included in PTA negotiations, there is no evidence on the effectiveness of cooperation on such matters.

In light of the regional efforts that have been made toward lowering domestic trade cost together within PTAs and the surge of AfT in development assistance, the main contribution of this article is to test whether AfT stimulates the use of trade opportunities offered by preferential access trough reciprocal or non-reciprocal PTAs. I expect to find complementarities between these two development instruments because, contrary to multilateral commitments in trade facilitation issues, regional or bilateral agreements generally generate binding arrangements and create special institutions to ensure enforcement. Thus, the purpose of this article is to test whether AfT effectiveness increases with PTAs; and as programs on trade facilitation tend to be not-discriminatory between partners, it seems also appealing to see if AfT favors trade creation.

The methodology used to test the complementarities between AfT and regional integration is the gravity model with panel data for the period 1995 to 2005. The endogeneity issue due to Multilateral Resistance Terms (MRT) is accounted for following the recent contribution of Baier and Bergstrand (2009). Results suggest that AfT is effective and that its impact could be enhanced with further economic integration. I find that South-South trade benefits the most from AfT programs. However, this assistance doesn’t appear as a complement to preferential schemes within North-South trade, suggesting that it has not been able to increase exports from developing countries to the North. Thus, the combination of the two development instruments seems to have been ineffective. Finally, braking AfT into three categories, I find that aid to trade-related institutions and aid to trade-related infrastructure have an important impact on both, imports and exports; while aid to building productive capacity only enhances

exports. Moreover, assistance to trade-related institutions seems to generate the stronger complementarities with economic integration.

The structure of this paper is organized as follow; I will start in section 2 with a brief literature review of the empirical evidence on the AfT effectiveness and PTA impacts on trade. The gravity model and the empirical strategy will be presented in section 3. Section 4 provides an analysis of the results obtained using the whole sample and the South-South and North-South sub-samples. AfT is also divided into three categories: trade-related institutions, trade-related infrastructure and building productive capacity. Finally, section 6 concludes.

II- LITERATURE REVIEW

In terms of the nexus between aid and trade, the theoretical literature has principally studied the interactions between aid and trade flows/policies; and the optimal donor assistance for enhancing welfare in developing countries, whether this is measured by income, growth or domestic heterogeneity concerns such as poverty reduction (see the survey in Suwa-Einsenman and Verdier, 2007). Considering the difficulty to measure aid policies and trade policies, the empirical research has mainly focused on testing the link between bilateral aid and trade flows, usually with a gravity model (Wagner, 2003; Silva and Nelson, 2012).

Within this literature, potential complementarities between aid, trade capacity and market access are poorly addressed. Indeed, trade-related assistance can have dynamic effects on trade flows through trade facilitation improvements; these reductions in trade costs would in turn allow developing countries to better respond to an increase in market access. Moreover, AfT can also be used as a mechanism to compensate the losers from domestic reforms implemented following trade liberalization, answering thus the political feasibility concerns. As mentioned by Hoeckman (2011) "if PTAs are to be development-friendly, they must focus on complementing liberalization in trade goods with behind-the-border regulatory reforms that are supported through development assistance instruments […]".

Following the definition from the AfT Task Force, ODA flows fall into this initiative if they are directed toward trade policy and regulations institutions, trade-related infrastructure, productive capacity building for tradable sectors, structural-adjustment due to trade-related matters and other trade-related needs. As part of overall ODA, aid for trade flows exist for 50 years, but few empirical studies have assessed their effectiveness, mainly because of a lack of sectoral aid data of sufficient quality and time span. Moreover, the fungibility of aid flows makes sometimes difficult to disentangle AfT from the rest of ODA.

Starting from the empirical literature on aid effectiveness, studies have so far failed to provide strong and convincing results of the impact of foreign assistance on growth (Roodman, 2007; Rajan and Subramanian, 2008), mainly due to a lack of good data and to some econometrical issues. One of the main arguments against aid is the potential "Dutch disease" phenomenon that entails the export competitiveness of the recipient country throughout an appreciation of his real exchange rate. Nevertheless, the evidence on this negative effect is mixed (Adam et O'Connell, 2004; Adam and Bevan, 2006); final impacts on growth and welfare may depend on the aid instruments used and the sectors financed with it. If aid is directed toward sectors that have positive externalities on the export sector, this may increase trade and ultimately, growth. Considering that AfT represents around 30% of total sector allocable ODA[1], "Dutch disease" effects may not be a problem even if they cannot be discarded.

Issues associated with the heterogeneity of aid flows, and the need to look at disaggregated aid figures rather than on aggregate ones in empirical work have recently gained some attention from the research community (Clemens et al., 2004; Mavrotas and Nunnenkamp, 2007). The idea behind this argument is that focusing on the impact of sectoral aid on narrower targets (e.g. school enrolment, infant mortality) may allow to avoid the caveats of the aid-growth nexus when studying aid effectiveness. Following this sectoral approach, Gamberoni and Nefarmer (2009) study the allocation of AfT between countries considering their trade performance[2], which is assimilated to a demand factor; their results suggest that this assistance goes to countries that need it the most. Thus, as the effect of aid on growth is difficult, if not impossible, to capture, focusing on more specific relationships, such as the

[1] Mean share for 2006-2008.

[2] Authors construct a trade performance indicator which includes trade variables and internal capacity constraints related to institutions, infrastructure and trade policy.

impact of AfT on trade performance, appears to be a promising new way of addressing the aid effectiveness issue.

Literature review on Aid for Trade effectiveness

Among the papers seeking to quantify empirically the impact of AfT flows on trade flows, Helble et al. (2012) find that this assistance enhances the trade performance of recipient countries, particularly exports. They estimate, using a gravity model with fixed-effects for the period 1990-2005, that a one per cent increase in assistance to trade facilitation (219 million United States Dollars -US$- in 2008) could generate an increase in exports of 291 million US$ for aid-receiving countries. Furthermore, the effect of aid directed to trade-related institutions seems stronger both in significance and magnitude, with a particularly high impact on aid recipient's exports. This assistance also exhibits the highest rate of return with US$ 71 in additional trade for every dollar invested.

Another trend of the literature focus on AfT effectiveness from an aggregated trade point of view. Cali and te Velde (2011) assess the impact of different types of AfT flows on the economic environment of recipient countries. Using panel data for 130 developing countries, they find that assistance to "simplification and harmonization of international import and export procedures […]; support to custom departments; tariff reforms" reduced the time and the cost to import during the period 2005-2009. In addition, aid for infrastructure had a significant impact on total exports between 2002 and 2007, while aid for capacity building never did, suggesting that the later may go to already well performing sectors.

The work of Vijil and Wagner (2012) aims to test the impact of AfT on overall export performance. Using a two step cross-section empirical strategy for 79 countries during the period 2002-2008, they disentangle, between institutional and infrastructure trade-related costs, channels by which aid for trade may transit. Results indicate that infrastructure is one of

the main determinants of export performance; a ten per cent increase in aid for infrastructure commitments leads to an average increase of the exports over GDP ratio of an aid recipient by 2.34 per cent. From a trade policy perspective, this is equivalent to a 2.71 per cent reduction of tariff and non-tariff barriers from the rest of the world.

Ferro et al. (2011) propose an original methodology using input-output tables to evaluate the impact of AfT to five service sectors (transportation, information and communication technologies, energy, banking/financial services, and business services) on manufacturing exports in developing countries. Their results suggest that assistance to banking and energy sectors is the most effective in increasing recipient countries exports. Moreover, aid to the business sector appears to have a positive and significant impact, even if less robust.

Even if academic interest on AfT effectiveness is quite recent, there is an extensive literature review on the impact of a lack of trade facilitation –at the border and behind the border trade costs- on trade volume using the gravity model (Limao and Venables, 2001; Anderson and Marcouiller, 2002; Wilson et al., 2003, 2005; Portugal-Perez and Wilson, 2012) and on welfare using computable general equilibrium models (Walkenhortst and Yasui, 2003). Trade interventions, whether they are financed by foreign aid and/or national resources, have also been increasingly evaluated ((Duval, 2006, Brenton and von Uexkuhll, 2009; Lederman et al. 2010; Cadot el al., 2011). Hoeckmand and Nicita (2011) find that domestic reforms that induce a reduction in behind the border trade costs are likely to have higher pay-offs in terms of trade (an particularly exports) than a reduction in tariff and non-tariff barriers and further trade preferences. Foster domestic reforms linked to trade facilitation seems thus to be a promising target for AfT.

Selective survey on developing countries' reciprocal and non-reciprocal PTAs

The evidence on the effects of reciprocal and non-reciprocal PTA on trade is quite abundant (see Hoeckman and Ozden, 2005; and Cardamone, 2009; for selective surveys on these issues). Results tend to indicate that PTAs foster trade between member countries (see Cipollina and Salvatici, 2010, for a meta-analysis on reciprocal PTA), sometimes at the expense of the rest of the world (Carrère, 2006). However, when preferential market access is disentangled using more precise indicators (Carrère et al. 2010), some inefficiency can be found in PTAs for developing countries in terms of revealed preference margins, coverage and utilization. They may arise from tariffs peaks in key products for exporters, burdensome procedures, costly rules of origins and an increasing preferential access accorded to competitors.

Nevertheless, seeking to increase market access does not seem to be the only motivation for further regionalization anymore. Modern PTAs, whether they are North-South or South-South, tend to go deeper in integration and cover behind the border issues not sufficiently addressed by the multilateral system, such as cooperation in trade facilitation, investment, and competition policy (Chauffour and Maure, 2011). Moreover, because PTAs tend to be tied to an agenda of own-economic liberalization, they can bring acceptance to change by the population, increase the credibility of reforms and develop mechanisms to ensure enforceability of commitments; many of these characteristics been appealing to link trade facilitation provisions to further economic integration through regionalization.

In fact, even if the reduction in behind in border trade costs is usually considered as an unilateral policy, there is an increasing acceptance that important gains arise from regional coordination and cooperation on these issues (Maur, 2011). Indeed, because of the externalities arising from trade facilitation provisions, such measures could be considered as regional public goods. The role played by AfT could be to cover the cost generated by their production.

Notwithstanding, as far as I know, no work has been done on complementarities between AfT and PTAs at a worldwide level. The work that relates the most to this study is the one from Gradeva and Martinez-Zarzoso (2010). These authors examine the complementarities between ODA and the "Everything But Arms" preference scheme accorded by European countries to exports from Least Developed Countries (LDCs). Using a gravity model with different panel data estimators for 79 African, Caribbean and Pacific countries and 15 European countries for the period 1995-2005, they find no direct impact for this preferential trade scheme but an indirect effect through complementarities with the ODA received from European donors.

My paper goes beyond this work for three reasons. First, I am looking for complementarities in terms of trade facilitation between preferential market access and trade-related assistance (AfT), and not overall ODA. Second, TPAs can be reciprocal or non-reciprocal and have different degrees of intensity, assimilated to a deeper economic integration. Third, I run the regressions on the entire world sample. This configuration allows me to test for trade creation or trade diversion effects originated by the trade facilitation improvements arising from these complementarities.

III- ECONOMETRIC MODEL AND RESULTS

1) Data

The empirical strategy is based on a non-balanced panel of 178 countries over the period 1995-2005. Aid flows were compiled from the OECD Creditor Reporting System (CRS) database, which allows studying the distribution of the ODA by sector, donor and recipient countries. Empirical estimations rely exclusively on aid commitments as aid disbursements are not routinely reported by multilateral donors (multilateral development banks are

important actors in financing AfT). Following the definition from the Task Force on AfT that matches with the OECD-CRS data base, AfT is defined as the sum of three aid categories[3]: (i) technical assistance for trade policy and regulations; (ii) trade-related infrastructure; and (iii) productive capacity building.

- The trade policy and regulation category, proxy for trade-related institutions, includes projects and programs oriented toward trade policy and administrative management, trade facilitation, regional trade agreements, multilateral trade negotiations and trade education/training. For instance, as part of this category, one finds flows aimed at helping countries develop trade strategies, negotiate trade agreements and implement their outcomes. Assistance from this category is delivered almost exclusively through technical assistance.
- The economic infrastructure category, which is a proxy for trade-related infrastructure includes aid for three sub-categories: transport and storage, communications and energy generation and supply. Projects or programs under this category range from technical cooperation on policy planning for ministries, to heavy construction of roads, power plants or airports.
- The building productive capacity category includes, for example, support devoted to various economic sectors in recipient countries in order to help them exploit their comparative advantage and diversify exports. Taking the agricultural sector as an example, programs can range from technical assistance for policy planning for agriculture ministries to microfinance for small farmers, for instance.

[3] I didn't include the trade-related adjustment (iv) category as it was inexistent before 2007.

The degree of economic integration for a pair of countries comes from the Baier and Bergstrand's Economic Integration Agreements (EIA) data base. These authors construct a discrete index ranging from zero to six and representingthe level of integration, from 0 denoting no existing EIA to 6 denoting an Economic Union[4]. Aggregate trade flows come from BACI, a bilateral trade data base constructed at CEPII. Usual gravity variables, such as bilateral distance, colonial ties, common language and landlocked dummies come from the same source. Finally, GDP and population data was retrieved from the World Bank's World Development Indicators (WDI).

[4] 0 denotes no existing Economic Integration Agreement, 1 denotes a One-Way Preferential Trade Agreement, 2 denotes a Two-Way Preferential Trade Agreement, 3 denotes a Free Trade Agreement, 4 denotes a Customs Union, 5 denotes a Common Market and 6 denotes an Economic Union. Data available at Bergstrand webpage: http://kellogg.nd.edu/faculty/fellows/bergstrand.shtml

2) Empirical model and estimation strategy

The capacity of the gravity model in explaining trade between countries by economical and trade costs factors while been consistent with theoretical frameworks, such as the Ricardian model, the increasing returns to scale or the firm heterogeneity model, has contributed to its success. This tool has been widely used to measure the impact of a variety of trade costs on international trade, with important implications for economic policy, such as the need to modernize institutions or to upgrade infrastructure.

The empirical strategy for this paper follows the Baier and Bergstrand (2009)'s adaptation of the Anderson and van Wincoop (2003)'s gravity model, which proposes an new way to deal with Multilateral Resistance Terms (MRT) without using a nonlinear least squares program nor fixed effects. I also use the methodology suggested by Wagner (2003) to handle cases where aid, and particularly AfT, is zero. Basically, exports from *i* to *j* can be explained by the following specification:

$$
\begin{aligned}
(1) \qquad & Ln\left(X_{ijt}\right) \\
& = \beta_0 + \beta_1 ln(GDP_{it}) + \beta_2 ln\left(GDP_{jt}\right) + \beta_3 ln(POP_{it}) + \beta_4 ln\left(POP_{jt}\right) \\
& + \beta_5 ln\left(Distance_{ijt}\right) + \beta_6 Landlocked_{ij} + \beta_7 Border_{ijt} + \beta_8 Language_{ijt} \\
& + \beta_9 Colonial\_Rel_{ijt} + \beta_{10} Common\_Colonizer_{ijt} + \beta_{11} ln(max\{1, ODA_{it}\}) \\
& + \beta_{12} Dummy\_ODA_{it} + \beta_{13} ln\left(max\{1, ODA_{jt}\}\right) + \beta_{14} Dummy\_ODA_{jt} \\
& + \beta_{15} ln(max\{1, AfT_{it}\}) + \beta_{16} Dummy_{\_AfT_{it}} + \beta_{17} ln\left(max\{1, AfT_{jt}\}\right) \\
& + \beta_{18} Dummy_{\_AfT_{jt}} + \beta_{19} Integration_{ijt} + \tau_t + \varepsilon_{ijt}
\end{aligned}
$$

Where X_{ijt} is country *i* exports to *j* in current thousand US$ at year *t*. The three variables of interest are $max\{1, AfT_{it}\}$ and $max\{1, AfT_{jt}\}$, which are the AfT received, respectively, by the exporter *i* and the importer *j* in year *t* (expressed in current thousand US$); and

$Integration_{ijt}$, which is a proxy for the degree of economic integration of the pair of countries *ij* at *t* , corrected for MRT by Baier and Bergstrand's (2009) strategy.

Considering previous results (Helble et al. 2012), AfT variables should have a positive impact on trade flows. As for $Integration_{ijt}$, in light of the extensive evidence on PTAs' effectiveness using gravity models (Cipollina and Salvatici, 2010), I also expect a positive relationship between this variable and the dependent one. Finally, crossing $max\{1, AfT_{it}\}$ and $max\{1, AfT_{jt}\}$ with $Integration_{ijt}$ will allow to test if AfT increases intra-members' trade when there is a deepening in regionalization. Indeed, complementarities may appear if further integration is accompanied by a higher absorption capacity of foreign assistance, because of better coordination, cooperation and implementation of trade facilitation reforms between members of a PTA. However, a non significance of interactive variables may also be interpreted as reforms equally benefiting all partners, regardless of their membership to a common preferential agreement.

The usual gravity variables are GDP_{it} and GDP_{jt} (in current US$), the economic weight of *i* and *j;* and POP_{it} and POP_{jt} , the population of both countries, at year *t*. As it is not possible to use exporter-year and importer-year fixed effect to correct for MRT without losing AfT variables, I follow Baier and Bergstrand (2009) and Portugal-Perez and Wilson (2012) and replace trade costs variables that vary across export-importer pairs by their MRT-corrected expressions that varies over time (please refer to these authors for more details) [5] . Thus, Distance_{ijt} is the MRT-corrected distance between country *i* and *j*; Border_{ijt} , Language_{ijt} , $\text{Colonial\_Rel}_{ijt}$, and $\text{Common\_Colonizer}_{ijt}$ are MRT-corrected proxies for,

[5] It should be noted that the MRT-corrected expression for *i*, $Integration_{ijt}$, will take into account the fact that other countries also share preferences with the same partner *j* at that year, potentially controlling for the erosion of preferences that has been observed lately.

respectively, sharing a common border, a common language, having had a common colonizer after 1945 and having had a colonial relationship after 1945. Landlocked_{ij} is equal to 1 if country *i* or country *j* do not have access to the sea, 2 if both are landlocked and 0 otherwise. τ_t is a vector of year specific dummies and ε_{ijt} is a random error term.

Dealing with zero aid flows

As using the logarithm of AfT, $\ln(AfT_{it})$, will drop from the sample all observations with zero aid, I use two dummies $Dummy_{\_AfT_{it}}$ and $Dummy_{\_AfT_{jt}}$ to take into account the fact that some countries, mainly developed ones, do not receive any AfT (Wagner, 2003). Also, combining these dummies with the AfT coefficients allows obtaining the average threshold in thousand US$ over which AfT is effective in increasing trade. More precisely, the treatment of aid variables is as follow:

$$\beta_{15} ln(max\{1, AfT_{it}\}) + \beta_{16} Dummy_{\_AfT_{it}} = \begin{cases} \beta_{15} ln(max\{1, AfT_{it}\}) \text{if } \mathrm{AfT_{it}} > 0 \\ \beta_{16} \text{ if } \mathrm{AfT_{it}} = 0 \end{cases}$$

with:

- $max\{1, AfT_{it}\}$ (*j*) = AfT received by country *i* (*j*) at year *t*, and;
- $Dummy_{\_AfT_{it}}$ (*j*) =1 if country *i* (*j*) did not receive AfT.

Thus, β_{15} measures the elasticity when AfT is positive, and β_{16} serve as an adjustment to the constant for cases were AfT is zero. The average threshold above which AfT is effective can be calculated using the following expression $\beta_{15} ln(AfT_i) - \beta_{16} = 0$.

To be sure that AfT variables are not absorbing the effect of overall assistance, the variables $max\{1, ODA_{it}\}$ and $max\{1, ODA_{jt}\}$ are included. These are ODA flows (minus AfT) in current thousand US$ received, respectively, by the exporter *i* and the importer *j* at *t*.

Following Wagner's (2003) methodology, dummies $Dummy\_ODA_{it}$ and $Dummy\_ODA_{jt}$ are also included.

3) Results

Results will be analyzed in two steps: first I will comment the average effects of AfT itself and its indirect impact through regionalization on world trade flows (Table 1) and on South-South and North-South trade flows (Table 2). Then I will conduct the same analysis for the three main categories of AfT: assistance to trade-related institutions, assistance to trade-related infrastructure and aid to capacity building.

AfT' effectiveness: direct and indirect impact on bilateral trade flows through economic integration

World trade

Table 1 report estimates for equation (1) using pooled Ordinary Least Squares (OLS) on the entire sample of bilateral non-zero trade data. Coefficients relatives to the AfT received by the exporter *i* and by the importer *j* are both positive, highly significant and stable across specifications, which is consistent with the results obtained by Helble et al. (2012). Moreover, it can be seen from column (1) to (2) that the degree of economic integration has a distinctive impact from AfT.

Once I introduce the interactions between assistance to trade and economic integration in column (3), their coefficients appear positive and highly significant but only from the importer side. This doesn't mean that AfT is not effective per se (its direct impact on trade flows appears positive and highly significant), it rather suggest that an increase in AfT will not favor exports to intra-members of the same PTA more than the ones directed to the rest of the world. However, when adding a dummy equal to 1 if *i* or *j* is the United-States (US)

(column 4), the coefficient on complementarities from the exporter side becomes significant[6]. This is an interesting result that we will discuss in the next section. Thus, once we control for a specific US effect, AfT and economic integration are complements in enhancing intra-members trade, whether this is measured from the exporter side than from the importer side.

Nevertheless, before judging of the potential desirability of these complementarities for developing countries, it seems necessary to test if the increase in intra-member's trade is due to a trade creation/diversion effect. Indeed, we could think about discriminatory trade facilitation programs hindering trade with the rest of the world. Following Rose (2004), I include in column (5) two controls for third-country trade: *Trade_Creation_i* and *Trade_Creation_j*. They are proxies for -the log of- exports to (imports from) the rest of the world minus the bilateral trade between the pair[7]. These variables appear positive and highly significant, suggesting that trade creation effects may dominate.

Concerning traditional gravity variables, coefficients have the expected sign (except for ODA variables) and are significant at a 1% level (see Table A.3 in appendix for full results). Exports increase with GDP and coefficients are close to unity, as suggested by the theory. Population for each of the partners appears with a positive sign. MRT-corrected trade costs coefficients have the expected effect: exports decrease with distance and if one or both countries in the pair are landlocked; and exports increase if the pair shares a common border, a common language, if they had a colonial relationship after 1945 and if they were colonized by the same country. Finally, it should be noted that AfT is still significant even after controlling for the rest of ODA flows received by a country, suggesting that the positive

[6] We obtain similar results when dropping the United-States from the sample, but we prefer to rely on estimations with an US dummy variable in order to reduce selection bias.

[7] Results are the same if I use -the log of- exports to (imports from) the rest of the world minus the trade with all the partners from the same PTA (results upon request).

impact of aid on trade transits via the sectors effectively addressed by AfT, such as trade-related institutions, trade-related infrastructure and production sectors. However, these ODA flows seem to have a dampening effect on trade flows. One might imagine that this is due to the fact that the ODA allocation rule gives higher aid to poorer countries, and everything been equal, with less capacity to trade. The inclusion of GDP per capita as a proxy for the level of development doesn't change results, suggesting that the allocation decision is also influenced by other criteria (results upon request).

Finally, following Wagner (2003), AfT effectiveness thresholds can be obtained dividing the dummy-AfT (β_{16}) coefficient by the AfT coefficient (β_{15}). Using the baseline specification (Table 1, column 4), 12 915 US$ is on average the minimum amount of AfT needed to generate exports and 8 748 US$ is the minimum amount needed to generate imports. Because all AfT recipients are above this threshold, they have all benefited from AfT during the period 1995-2005.

Table 1 : Baseline (full tables available in appendix)

Ln(Exports_ijt)	(1) All positive trade	(2) All positive trade	(3) All positive trade	(4) All positive trade	(5) All positive trade
	1995-2009	1995-2005	1995-2005	1995-2005	1995-2005
	AfT Total	AfT Total	AfT Total	AfT Total	AfT Total
Ln(AfT_i)	0.0724***	0.0273***	0.0258**	0.0278***	0.0365***
	(0.00758)	(0.0105)	(0.0105)	(0.0105)	(0.0101)
Dummy_AfT_i	0.425***	0.357***	0.353***	0.359***	0.330***
	(0.0756)	(0.0988)	(0.0984)	(0.0985)	(0.0956)
Ln(AfT_j)	0.0389***	0.0544***	0.0491***	0.0527***	0.0441***
	(0.00717)	(0.0102)	(0.0102)	(0.0102)	(0.00952)
Dummy_AfT_j	0.401***	0.427***	0.442***	0.461***	0.320***
	(0.0666)	(0.0970)	(0.0969)	(0.0968)	(0.0935)
Integration_mrt_ij		0.517***	0.375***	0.415***	0.320***
		(0.0191)	(0.0209)	(0.0223)	(0.0935)
Ln(AfT_i)*Integration_ij			0.000409	0.00457*	0.00517**
			(0.00273)	(0.00275)	(0.00257)
Ln(AfT_j)*Integration_ij			0.0306***	0.0231***	0.0232***
			(0.00333)	(0.00351)	(0.00330)
Trade_Creation_i					0.563***
					(0.0246)
Trade_Creation_j					0.706***
					(0.0334)
Observations	195,012	95,280	95,280	95,280	95,280
R^2	0.618	0.646	0.648	0.650	0.671

All specifications include year specific dummies. Robust standard errors in brackets (clustered by country pairs).
Specifications of column (4) and (5) include an US dummy variable.
The entire gravity model for column (4) can be found in Tables A.3 in appendix.
+ p<0.15 ; * p<0.1; ** p<0.05; *** p<0.01

North-South and South-South sub-samples

In the sub-sample of South-South trade (Table 2, column 1), there is a direct positive effect of AfT on both exports and imports, with a higher coefficient than in the world and North-South sample. Thus, AfT effectiveness seems higher for trade between developing countries. There is also some evidence of complementarities between this development instrument and economic integration, but only from the exporter side. This suggests that for a country *i* receiving AfT, exports to partners sharing a trade agreement are enhanced by trade-related assistance. This may occur, for example, if mutual-recognition is negotiated. Trade assistance could also create incentives for developing regional standards certification bodies (Maur, 2011). Indeed, the national standards infrastructure is usually lacking in developing countries, mainly because their economy is too small to support such institutions; a regional perspective could be the solution. Finally, results also indicate that trade-related assistance does not discriminate between importers. Thus, it seems that trade facilitation reforms (ex: custom modernization) tend to benefit all importers disregarding their origin.

For North-South trade, an interesting feature appears when I first run a regression without the US dummy (column 3): results suggest that AfT and preferential market access are substitutes and not complements for increasing developing countries' exports. The fear of this substitutability between the two development instruments has been exposed by developing countries negotiators during the Doha Round, after the unwillingness of bigger players, namely the European Union and the United States, to make compromises in key negotiations for developing countries, such as agriculture and domestic support. However, when I add the US dummy variable, the economic significance of the substitutability disappears (column 3).

Maur (2011) argue trade facilitation provisions in US agreements are relatively uniform within PTAs, whatever the partner is a developing country or a developed one. Moreover,

these provisions seem more binding than comparable ones in European agreements. He also suggests that the negotiation agenda seems to be mainly driven by the US and less by the trading partner. Considering that not taking into account asymmetries in the level of development of the partners could create inefficiencies in the provision of regional trade facilitation, the US case is worth to be investigated further.

Finally, the evidence suggest that AfT indirect effect trough economic integration only works from the importer side, in the sense that just developing countries' imports from northern members are enhanced by complementarities. This seems to indicate that AfT doesn't allow southern exporters to face the tariff and non-tariff barriers imposed by the North.

Table 2 : South-South and North-South trade

Ln(Exports_ijt)	(1) South-South trade 1995-2009 AfT Total	(2) North-South trade 1995-2005 AfT Total	(3) North-South trade 1995-2005 AfT Total
Ln(AfT_i)	0.0360**	0.0325**	0.0352**
	(0.0155)	(0.0154)	(0.0154)
Dummy_AfT_i	0.557***	0.177	0.174
	(0.156)	(0.139)	(0.139)
Ln(AfT_j)	0.0954***	0.0546***	0.0565***
	(0.0146)	(0.0149)	(0.0149)
Dummy_AfT_j	0.650***	0.351**	0.338**
	(0.149)	(0.140)	(0.141)
Integration_mrt_ij	0.417***	0.398***	0.427***
	(0.0482)	(0.0295)	(0.0313)
Ln(AfT_i)*Integration_ij	0.0159***	-0.00841**	-0.00430
	(0.00484)	(0.00388)	(0.00400)
Ln(AfT_j)*Integration_ij	-0.00192	0.0310***	0.0256***
	(0.00518)	(0.00476)	(0.00497)
Observations	40,183	42,635	42,635
R^2	0.583	0.673	0.673

All specifications include year specific dummies. Robust standard errors in brackets (clustered by country pairs).
Specification of column (3) includes an US dummy variable.
+ p<0.15 ; * *p*<0.1; ** *p*<0.05; *** *p*<0.01

Breaking AfT effectiveness by sector: trade related institutions, trade-related infrastructure and productive capacity building

Each component of the AfT agenda address different obstacles to trade, whether they are linked to trade-related institutions, trade-related infrastructure or a lack of productive capacity. Table 3 reports estimates for the three categories using pooled OLS over the entire sample of countries (including the US dummy).

Aid to trade-related institutions:

It can be seen from column (1) that the direct effect of aid to trade-related institutions is positive and economically significant for both exports and imports. As a complement to economic integration, this kind of aid seems also to enhance both directions of trade between members. This can occur if aid to trade-related institutions finances, for example, trainings courses on bilateral and multilateral trade negotiations for government staff, or assistance for compliance with rules of origins and procedures. For example, "Tanzania and its neighbors in the Southern African Development Community (SADC) have agreed on a five-year program of vaccination, surveillance, and control of animal movements across borders to combat highly contagious bovine diseases that persist in Tanzania" (Tanzania, 2005 and Maur, 2011). We can also think about a one-stop border post at customs, such as in southern Africa (TradeMark Southern Africa). Considering the strategic role played by customs in the import duty collection, AfT directed toward these features is of crucial importance for regionalization.

Aid to trade-related infrastructure: transit corridors

Column (2) report estimations using aid to trade-related infrastructure; this kind of aid aims to reduce bottleneck obstacles that increase trade cost related to infrastructure. As expected, both AfT received by the exporter and by the importer have a direct positive and significant impact

on trade. Complementarities between this kind of aid and economic integration also appear for both directions of trade; but the trade-related assistance to infrastructure seems to enhance further imports from members, than exports to members.

One of the main examples taken when illustrating the potential complementarities existing between AfT and PTAs are transit corridors, which are of crucial relevance for landlocked countries. As Maur (2011) highlights, the management of transit corridors requires three key ingredients: legal arrangements, the provision of physical infrastructure, and the operationalization of the transit itself. Binding arrangements in infrastructure-related trade facilitation provisions in PTA could be used to facilitate acceptance of reforms at home, and go beyond political-economy concerns (very frequent in these often non-competitive markets). Considering that AfT may cover the cost generated by the production of regional public goods, it can have strong complementarities with further economic integration.

Aid to building productive capacity

Finally, Column (3) report results for aid to building productive capacity. This kind of aid can enhance trade by increasing the exportable production; for example, by supporting the birth of a new agricultural supply chain where the country has a comparative advantage. As expected, results indicate that this kind of assistance only has a direct impact on exports. The absence of direct impact on imports may be due to the fact that these flows indirectly work as a subsidization of import-competing sectors.

There is also a complementary effect between this kind of aid and economic integration, but only from the importer side, suggesting that aid to capacity-building enhances imports from members of a PTA more than from non-members, but that there is no such differentiation for exports to members. If aid to productive capacity promotes sectors intensives in foreign intermediate goods consumption, we might think that rules of origins favor imports from

intra-members more than from the rest of the world. Moreover, complementarities from the import may be explained by AfT supporting the development of regional integrated value chains.

4) Sensitivity Analysis

I present some sensitivity analysis in Table 4 following three steps. First, I use the exports over the product of GDPs as the dependent variable in column (1) in order to reduce heteroskedasticity concerns (Anderson and van Wincoop, 2003). Then, I replicate the main specification (Table 1, column 4) using 3-year average values in order to account for the fact than more than yearly values, is the provision of AfT in the medium term that matters (column 2). Finally, I work with aid disbursements instead of commitments, even if the latest data is less reliable (column 3). All the robustness checks are done by including the US dummy. Results seem robust across specifications, even if the economic significance of the AfT received by the exporter appears slightly lower when working with 3-year average variables and with aid disbursements.

Table 3: Institutions, infrastructure and productive capacity building AfT (full tables available in appendix)

Ln(Exports_ijt)	(1) All positive trade 1995-2005 AfT Institutions	(2) All positive trade 1995-2005 AfT Infrastructure	(3) All positive trade 1995-2005 AfT Production
Ln(AfT_Institutions _i)	0.0106**		
	(0.00470)		
Dummy_ AfT_Institutions _i	0.121***		
	(0.0463)		
Ln(AfT_Institutions _j)	0.0339***		
	(0.00433)		
Dummy_ AfT_Institutions _j	0.257***		
	(0.0420)		
Ln(AfT_Infrastructure _i)		0.0317***	
		(0.00756)	
Dummy_ AfT_ Infrastructure _i		0.262***	
		(0.0746)	
Ln(AfT_ Infrastructure _j)		0.0443***	
		(0.00737)	
Dummy_ AfT_ Infrastructure _j		0.453***	
		(0.0708)	
Ln(AfT_Production _i)			0.0598***
			(0.0125)
Dummy_ AfT_ Production _i			0.555***
			(0.123)
Ln(AfT_ Production _j)			0.00894
			(0.0102)
Dummy_ AfT_ Production _j			0.367***
			(0.0942)
Integration_mrt_ij	0.465***	0.445***	0.487***
	(0.0209)	(0.0222)	(0.0215)
Ln(AfT_Institutions_i)*Integration_ij	0.00754**		
	(0.00303)		
Ln(AfT_Institutions_j)*Integration_ij	0.0244***		
	(0.00385)		
Ln(AfT_Infrastructure_i)*Integration_ij		0.00453+	
		(0.00287)	
Ln(AfT_Infrastructure_j)*Integration_ij		0.0213***	
		(0.00362)	
Ln(AfT_Production_i)*Integration_ij			0.00127
			(0.00252)
Ln(AfT_Production_j)*Integration_ij			0.0174***
			(0.00352)
Observations	95,280	95,280	95,280
R^2	0.649	0.649	0.649

All specifications include year specific dummies and an US dummy. Robust standard errors in brackets (clustered by country pairs). + p<0.15 ; * p<0.1; ** p<0.05; *** p<0.01

Table 4: Robustness

	(1)	(2)	(3)
	All positive trade	All positive trade	All positive trade
	1995-2009	1995-2005	1995-2005
	AfT Total	AfT Total	AfT Total
	$\frac{X_{ij}}{GDP_i * GDP_j}$	3-years average	Disbursements
Ln(AfT_i)	0.0310***	0.0297**	0.0220+
	(0.0103)	(0.0140)	(0.0141)
Dummy_AfT_i	0.355***	0.178	0.457***
	(0.0989)	(0.125)	(0.123)
Ln(AfT_j)	0.0625***	0.0727***	0.0344***
	(0.0101)	(0.0139)	(0.0124)
Dummy_AfT_j	0.434***	0.278**	0.525***
	(0.0973)	(0.131)	(0.0967)
Integration_mrt_ij	0.393***	0.433***	0.425***
	(0.0220)	(0.0224)	(0.0223)
Ln(AfT_i)*Integration_ij	0.00681**	0.00382+	0.00461+
	(0.00277)	(0.00275)	(0.00290)
Ln(AfT_j)*Integration_ij	0.0232***	0.0240***	0.0224***
	(0.00353)	(0.00347)	(0.00374)
Observations	95,280	41,421	95280
R^2	0.212	0.681	0.648

All specifications include year specific dummies and an US dummy. Robust standard errors in brackets (clustered by country pairs).
The entire gravity model for column (1) and (2) can be found in Tables A.3 in appendix.
+ p<0.15 ; * p<0.1; ** p<0.05; *** p<0.01

IV- CONLUSION

This study analyzes the complementarities between AfT and economic integration, worldwide, for the period 1995 to 2005. I use a gravity model which deals with multilateral resistance terms; results indicate that AfT is effective and that its impact could be enhanced with further economic integration. I also find that South-South trade benefits the most. Nevertheless, AfT has not increased exports from developing countries to the North, suggesting that the combination of these two development instruments has been ineffective.

Finally, braking AfT in three categories, I find that aid to trade-related institutions and infrastructure have an important impact on both imports and exports, while aid to building productive capacity only enhances exports. Moreover, assistance to institutions is the kind of aid that seems to have stronger complementarities with economic integration. Finally, the fact that United States' provisions in trade facilitations seem to be less development-friendly merits further scrutiny.

APPENDIX (Full Tables)

Table A.1 : Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Exports_ij	278.7901	2958.732	.001	282029.5
Population_i	50.8851	162.1465	.010441	1300
GDP_i	330706.6	1146824	57.61036	1.26e+07
Common_language_ij	.1554319	.3623166	0	1
Landlocked_ij	.2844461	.4952385	0	2
Common_border_ij	.0221907	.1473035	0	1
Colonial_Relationship_ij	.0125409	.111282	0	1
Common_Colonizer_ij	.0953311	.2936723	0	1
ODA_i	225.949	525.4104	0	8487.053
ODA_j	214.8333	502.4331	0	8487.053
AfT_i	101.1743	288.2352	0	4589.134
AfT_j	93.90037	271.0488	0	4589.134
AfT_Institutions_i	11.21268	73.41597	0	1657.733
AfT_Institutions_j	10.39511	69.20581	0	1657.733
AfT_ Infrastructure _i	57.76739	198.6161	0	3236.803
AfT_ Infrastructure _j	53.1396	186.3338	0	3236.803
AfT_Production _i	32.19427	99.28959	0	1351.559
AfT_Production _j	30.36566	93.44141	0	1351.559
Integration_ij	.5077308	1.040536	0	6

Table A.2 : Summary of the integration variable

Integration_ij	Frequence	Percent	Cumulative
0	75,965	71.92	71.92
1	18,334	17.36	89.28
2	3,506	3.32	92.60
3	4,986	4.72	97.32
4	1,298	1.23	98.55
5	1,039	0.98	99.54
6	489	0.46	100.00
Total	105,617	100.00	

Table A.3: Baseline results

Ln(Exports_ijt)	(1.4) All positive trade 1995-2009 AfT Total	(4.1) All positive trade 1995-2005 AfT Total	(4.2) All positive trade 3 years average 1995-2005 AfT Total
Ln(GDP_i)	0.939***		0.919***
	(0.0185)		(0.0175)
Ln(GDP_j)	0.816***		0.790***
	(0.0186)		(0.0177)
Ln(Population_i)	0.163***	0.121***	0.159***
	(0.0226)	(0.0134)	(0.0218)
Ln (Population_j)	0.0353*	-0.135***	0.0613***
	(0.0213)	(0.0130)	(0.0211)
Ln(Distance_ij)	-0.0330***	-0.0264***	-0.0428***
	(0.00359)	(0.00336)	(0.00371)
Landlocked_ij	-0.330***	-0.234***	-0.352***
	(0.0361)	(0.0343)	(0.0332)
Common_border_ij	2.192***	2.244***	2.168***
	(0.128)	(0.131)	(0.131)
Common_language_ij	0.757***	0.751***	0.782***
	(0.0616)	(0.0616)	(0.0577)
Colonial_Relationship_ij	1.032***	1.104***	1.017***
	(0.176)	(0.175)	(0.169)
Common_Colonizer_ij	0.968***	1.069***	0.794***
	(0.0808)	(0.0808)	(0.0737)
Ln(ODA_i)	-0.107***	-0.0630***	-0.144***
	(0.0165)	(0.0162)	(0.0231)
Dummy_ODA_i	-0.743***	-0.513***	-0.775***
	(0.165)	(0.165)	(0.204)
Ln(ODA_j)	-0.164***	-0.158***	-0.188***
	(0.0161)	(0.0160)	(0.0205)
Dummy_ODA_j	-1.246***	-1.210***	-1.329***
	(0.163)	(0.163)	(0.190)
Ln(AfT_i)	0.0278***	0.0310***	0.0297**
	(0.0105)	(0.0103)	(0.0140)
Dummy_AfT_i	0.359***	0.355***	0.178
	(0.0985)	(0.0989)	(0.125)
Ln(AfT_j)	0.0527***	0.0625***	0.0727***
	(0.0102)	(0.0101)	(0.0139)
Dummy_AfT_j	0.461***	0.434***	0.278**
	(0.0968)	(0.0973)	(0.131)
Integration_mrt_ij	0.415***	0.393***	0.416***
	(0.0223)	(0.0220)	(0.0219)
Ln(AfT_i)*Integration_ij	0.00457*	0.00681**	0.00441+
	(0.00275)	(0.00277)	(0.00269)
Ln(AfT_j)*Integration_ij	0.0231***	0.0232***	0.0244***
	(0.00351)	(0.00353)	(0.00337)
Dummy_USA	-2.456***	-2.765***	-1.769***
	(0.377)	(0.366)	(0.372)
Constant	-33.42***	-36.17***	-32.82***
	(0.498)	(0.394)	(0.467)
Observations	95,280	95,280	41,421
R^2	0.650	0.212	0.681

All specifications include year specific dummies. Robust standard errors in brackets (clustered by country pairs).
+ p<0.15 ; * p<0.1; ** p<0.05; *** p<0.01

REFERENCES

Adam, C. S. and S. A. O'Connell (2004), 'Aid versus Trade Revisited: Donor and Recipient Policies in the Presence of Learning-by-Doing'. *The Economic Journal*, 114, 150–173.

Adam, C. S., and D. L. Bevan, (2006). Aid and the supply side: public investment, export performance, and Dutch disease in low-income countries. *World Bank Economic Review*, *20*(2): 261-90.

Anderson, J. E., Marcouiller, D. (2002). Insecurity and the pattern of trade: an empirical investigation. *Review of Economics and Statistics*, *84*(2): 342-52.

Anderson, J., & Van Wincoop, E. (2003). Gravity with gravitas. A solution to the border puzzle. American Economic Review, 93, 170–192.

Baier, S. L. and J. H. Bergstrand (2009), "Bonus vetus OLS: A simple method for approximating international trade-cost effects using the gravity equation", *Journal of International Economics*, 77(1), 77-85.

Brenton, P. and von Uexkull, E. (2009), "Product Specific Technical Assistance for Exports - Has It Been Effective?" *Journal of International Trade & Economic Development*, *18*(2), pp. 235-54.

Cadot et al. (2011). "Where to Spend the Next Million? Applying Impact Evaluation to Trade Assistance" edited by CEPR and World Bank.

Cali, M., te Velde, D. W. (2011). Does aid for trade really improve trade performance? World Development, 39(5):725-740.

Cardamone, P. (2007), 'A Survey of the Assessments of the Effectiveness of Preferential Trade Agreements using Gravity Models', *Economia Internazionale / International Economics*, Camera di Commercio di Genova, 60, 4, 421-473.

Carrère, C. (2006), 'Revisiting the effects of regional trade agreements on trade flows with proper specification of the gravity model', *European Economic Review*, 50, 2, 223–247.

Carrère, C., J. De Melo and B. Tumurchudur (2010), 'Disentangling Market Access Effects of Preferential Trading Arrangements with an Application for ASEAN Members under an ASEAN–EU FTA', *The World Economy*, 33, 1, 42–59.

Chauffour, J. P. and J. C. Maur (eds.) (2011), *Preferential Trade Agreement Policies for Development: A Handbook*, Washington, DC: The World Bank.

Cipollina, M. and L. Salvatici (2010), 'Reciprocal Trade Agreements in Gravity Models: A Meta-Analysis', *Review of International Economics*, 18, 1, 63–80.

Clemens, M. A., S. Radelet and R. Bhavnani (2004) 'Counting Chickens when they Hatch: The Short-Term Effect of Aid on Growth'. Center for Global Development Working Paper No. 44 (Center for Global Development).

Duval, Y. (2006). Costs and benefits of implementing trade facilitations measures under negotiations at the WTO: an exploratory survey. *Working Paper Series* 3 Asian-Pacific Research and Training Network on Trade.

Ferro, E., Portugal-Perez A. and Wilson, J.S., (2011). "Aid and the Services Sector", Chapter 8 in "Where to Spend the Next Million? Applying Impact Evaluation to Trade Assistance" edited by Cadot et al. CEPR and World Bank, 2011.

Gamberoni, E., Newfarmer, R. (2009). Aid for trade matching potential demand and supply. *Policy Research Working Paper* 4991. The World Bank, Poverty Reduction and Economic Management Network, International Trade Department.

Gradeva, M. and Martinez-Zarzoso (2010) Are Trade Preferences more effective than Aid on Supporting Exports? Evidence from the everything But Arms Preference Scheme.

Helble, M., Man, C. and Wilson, J. (2012). "Aid for Trade Facilitation". Review of World Economy, 148: 357-376.

Hoeckman, B. (2001), "North-South preferential trade agreements", in Chauffour, J. P. and J. C. Maur (eds.) (2011), *Preferential Trade Agreement Policies for Development: A Handbook*, Washington, DC: The World Bank.

Hoekman, B. and Ozden, C. (2005), 'Trade Preferences and Differential Treatment of Developing Countries: A Selective Survey', World Bank Policy Research Working Paper No. 3566 (Washington DC: The World Bank).

Hoekman, B., W. Martin, and C. Primo-Braga (eds.) (2009), *Trade Preference Erosion: Measurement and Policy Response*, Washington, DC: Palgrave-McMillan and The World Bank.

Hoekman, B. and A. Nicita (2010), 'Assessing the Doha Round: Market access, transactions costs and aid for trade facilitation', *The Journal of International Trade & Economic Development*, 19, 1, 65-79.

Lederman, D., Olarreaga, M., Payton, L. (2010). Export promotion agencies: do they work? *Journal of Development Economics, 91*(2): 257-65.

Limao, N., Venables, A. J. (2001). Infrastructure, geographical disadvantage, transport costs, and trade. *World Bank Economic Review*, *15*(3): 451-79.

Maur, J.C. (2011), "Trade Facilitation" in Chauffour, J. P. and J. C. Maur (eds.) (2011), *Preferential Trade Agreement Policies for Development: A Handbook*, Washington, DC: The World Bank.

Mavrotas, G., Nunnenkamp, P. (2007). Foreign aid heterogeneity: issues and agenda. *Review of World Economics*, *143*(4): 585-95.

Portugal-Perez A. and Wilson, J.S., (2012). "Export Performance and Trade Facilitation Reform: Hard and Soft Infrastructure". World Development, 40 (7): 1295–1307

Rajan, R. G., Subramanian, A. (2008). Aid and growth: what does the cross-country evidence really show? *Review of Economics and Statistics*, *90*(4): 643-65.

Roodman, D. (2007). The anarchy of numbers: aid, development, and cross-country empirics. *World Bank Economic Review, 21*(2): 255-77.

Rose, A. K. (2004). 'Do We Really Know That the WTO Increases Trade?', American *Economic Review*, 94, 1, 98-114.

Silva, S. and Nelson, D. (2012) 'Does Aid Cause Trade? Evidence from an Asymmetric Gravity Model', *The World Economy*, 35 (5): 545–577

Suwa-Eisenmann, A. and Verdier, T. (2007). « Aid and trade », *Oxford Review of Economic Policy* , 23 (3): 481-507.

Wagner, D. (2003). Aid and trade—an empirical study. J. Japanese Int. Economies 17 (2003) 153–173.

Walkenhortst and Yasui (2003), "Quantitative Assesment of the Benefits of Trade Facilitation" Organization for Economic Cooperation and Development, Paris.

Vijil, M. and Wagner, L. (2012) “Does Aid for Trade Enhance Export Performance? Investigating the Infrastructure Channel” forthcoming in *The World Economy*.

Wilson, J. S., Mann, C. L., Otsuki, T. (2005). Assessing the benefits of trade facilitation: a global perspective. *World Economy*, *28*(6): 841-71.

Wilson, J. S., Mann, C. L., Otsuki, T. (2003). Trade facilitation and economic development: a new approach to quantifying the impact. *World Bank Economic Review, 17*(3): 367-89.

Winters, A., McCulloch, N., McKay, A. (2004). Trade Liberalization and Poverty: The Evidence so Far. *Journal of Economic Literature*, 42 (1): 72-115.