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PAPER

Impacts of Aid for Trade on Trade with the EU The Role of Old and New Member States

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Abstract Aid for Trade (AfT) is a new international program supporting developing countries to adjust to the multilateral trading system and to benefit from the liberalization process, by granting them more focused development assistance. The European Union is the largest aid provider in the world, and the EU has also incorporated the principles of AfT in its development policy. Previous research has proved that AfT is able to expand trade between developing countries and the EU itself. However, it is not yet clear whether this trade expansion is only the result of the EU-15's activity or the new EU member states also contribute to it. Present research aims to investigate the impacts of the AfT assistance provided by the EU-15 on the trade between the EU-15 and the recipient countries, and on the trade between the new EU-members and the recipients, respectively. The results of the gravity model indicate that the EU-15 is a more attractive market to ACP countries than the new member states: AfT provided to ACP countries positively influences the exports to EU-15, while it has no significant impact on trade with the new member states.

Keywords Aid for Trade - EU's development policy - EU-15 - new member states - gravity model

JEL Classification F13 - F15 - F35

1. Introduction

Since 2005, Aid for Trade (AfT) initiative has been playing a significant role in international development cooperation. Its objective is to promote the exports of developing countries by improving supply-side capacity. Since its launch, a relatively wide literature has analysed its impacts on trade costs and export expansion. However, most of these analyses investigate the potential impacts in general without reflecting on donor-specific or recipient-specific aspects. For instance, the EU's activity has not been investigated very deeply, despite the EU being the largest aid provider in the world. Moreover, the EU has built up a special relationship with developing countries, and the closest relationship is realized with the African, Caribbean and Pacific (ACP) countries. As a result, ACP countries are the main

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beneficiaries of the EU's development policy and have been enjoying several – trade and economic – preferences and financial assistance granted by the European Union for decades. Although ACP countries' share of the EU's trade with third countries has decreased, the EU is still their most significant trade partner. Consequently, the EU can be a good example of how AfT may work in practice.

Some articles (see, for instance, Udvari 2011, 2013) analyse the potential impacts of AfT on total trade (total amount of imports and exports) between developing countries and the EU. These analyses investigate the total trade (aggregation of exports and imports) between some developing countries and the EU-27, with the EU-15 considered as a donor. Therefore, these results do not answer the question whether the assistance provided by the EU-15 contributes to the growing exports of developing countries only to the EU-15 or to the new member states, as well. Thus, *the research objective of present paper is to analyse empirically how Aid for Trade can contribute to the export expansion of ACP countries to the EU-15, and to the new member states (NMS)*. In order to obtain the most comprehensive results of the gravity model, the empirical analysis includes developing countries out of the ACP-block, too.

The structure of present article is as follows. Section 2 gives an insight into the role of Central and Eastern Europe in the EU's international development cooperation. This is followed by Section 3 emphasizing the features of EU-ACP relations after the Millennium, focusing on the Cotonou Partnership Agreement and the Economic Partnership Agreements as the basis for trade relations between the ACP group and the EU. Section 4 details the most recent research results on Aid for Trade. Section 5 covers the methodological issues of the empirical analysis as well as presents the results.

2. Central and Eastern Europe in the EU's development cooperation

Although the European Community became a member of the donor community in the 1970s, it was not until the Maastricht Treaty in 1992 that a legal framework to its development policy was provided (Degnbol-Martinussen and Engberg-Pedersen 2005). Therefore, countries accessing to the EU after the mid-90s had to accept these rules. However, countries joining the EU after the Millennium had another challenge: earlier they were recipients in international development cooperation, but with their EU-accession they were obliged to become donor countries (Migliorisi et al 2003, Lightfoot 2008). It was prescribed that the candidate countries should create an international development policy meeting the principles of the UN, the EU and the OECD's Development Assistance Committee (Jakab 2005). Since development cooperation was not subject to accession negotiations (Granell 2005), accessing countries had to accept all articles of the common regulations without derogation (Dauderstaedt 2002, Morgera and Durán 2004, Lightfoot 2008), including the Cotonou Partnership Agreement, the whole ACP relationship, the European consensus on development policy, the obligations of the 10th European Development Fund (EDF), the principles of increasing resources accepted at the Monterrey conference and strengthened by the European Council, the Mediterranean partnership, the Everything But Arms initiative, and many other related regulations.

Adjusting to these conditions is not a simple task. Due to former political influence (including both political and military interests) and to a less independent development policy, these countries had to face many challenges during the creation of a development cooperation policy. The main challenge was that the aim of the EU's development policy – namely to decrease poverty – was included only in some countries' development policy, similarly, the guidelines concerning the support of least-developed and African countries were also neglected in the development policy of some countries (Migliorisi et al. 2003, Lightfoot 2010, Lightfoot–Szent-Iványi 2014).

As for aid commitments, NMS are also contributors to the budget of the EDF, which provides assistance mainly to ACP countries, though NMS do not provide so many contributions as would increase the EDF-resources significantly (Lightfoot 2008). Only 0.4 percent of the total assistance provided by the EU to developing countries comes from NMS (Granell 2005). According to OECD data, aid from Central and Eastern European countries fluctuates between 0.08 and 0.13 percent of the countries' GNI (OECD 2012), but the aim is to reach 0.36 percent by 2015. These data refer to the fact that though the NMS started their activity as donors, it is not so significant for them to contribute to the community's and the EU-15's aid activity – at least in terms of the financial resources. All these show that the development policy of the EU is driven by the EU-15.

It is important to analyse the new member states' regional focus, too. The NMS were not colonising powers, thus, due to the lack of relations they provide assistance mainly to their neighbouring countries (former Yugoslav states, members of the Commonwealth of Independent States, or the Balkans) (Table 1). Consequently, other (e.g. African) developing countries are not favoured (Dauderstaedt 2002, Migliorisi et al. 2003, Morgera and Durán 2004, Granell 2005, Lightfoot 2008, Szent-Iványi 2009), though these areas officially form a part of the main priorities of the EU's development cooperation. The aim of the NMS is not to decrease poverty or handle the challenges of fragile states, but to preserve stability in neighbouring regions and to prevent conflicts from arising (Lightfoot 2008, Szent-Iványi 2009). To sum up, aid allocations of the NMS are not determined by the GDP per capita, by economic growth or by the quality of institutions (Szent-Iványi 2009). All these seem to highlight the fact that aid granted for the ACP countries depends only on EU-15 and not on NMS.

Table 1 Aid allocation of the new member states

	Cyprus	Czech Republic	Estonia	Poland	Lithuania	Hungary	Malta	Slovakia	Slovenia
Moldova, Ukraine, Belarus	2	1	1	1	1	1			
the Balkans	2	1	1	1	2	1		1	1
Central-Asia		2	2	2				1	
Middle-East	1	3							
Africa		3					1	3	
South-East Asia		3		3		3		3	
Latin-America		3					3	3	

Note: 1: strong relationship, 2: medium intensity, 3: weak relationship. There is no data for Latvia.
Source: own construction based on Mogliorisi et al (2003), p. 21.

Although all official documents in the EU emphasize the special role of ACP countries, NMS are not obliged to provide development aid to these countries (Lightfoot 2010). As a result of weaker African and Caribbean relations and of the stronger neighbouring activities, the EU has paid greater attention to neighbourhood policy and to the support of candidate countries (Lightfoot 2008). This can be accepted as a success of NMS, but the EU's focus has turned to other regions than the ACP countries.

Consequently, the following may be concluded in connection with the ACP countries: disposable financial resources have been extended, but not significantly. Furthermore, new member states have contributed to the changes of regional focus of the EU's development cooperation: neighbouring countries have become competitors to the ACP countries. Nevertheless, ACP countries are still in the foreground: most EU-documents emphasize their priority. Considering these, it is supposed that the EU-15 is more responsible for expanding trade with developing countries due to Aid for Trade than the new EU-members are.

3. EU-ACP relations since the Millennium

Meanwhile, the EU has built up economic relations with developing countries with changing intensity. The strongest relations are with the ACP countries. The EU-ACP relations have a long history: institutional cooperation started in 1975 with the first Lomé Convention, later followed by three other. These conventions provided ACP countries free access to European markets till 2000. Although they aimed to expand trade between partners, the ACP countries' share of the EU's external trade dramatically decreased, and, on the contrary, the EU became the most important trading partner of the ACP countries.[1] The Lomé Conventions formed a part of the EU's development policy, but the EU took other factors but poverty into consideration while allocating aid resources to ACP countries (Degnbol-Martinussen and Engberg-Pedersen 2005). The main reason for a closer relationship was to obtain natural resources and to increase the EU's international power as a regional integration. In the 1990s, other developing countries and the international community – mainly the USA – forced the EU to eliminate the non-reciprocal trade preferences of the Lomé Conventions to meet the obligations of the World Trade Organization (WTO). To comply with these challenges, the partner countries signed the Cotonou Partnership Agreement in 2000.

3.1 The Cotonou Partnership Agreement

The main focus and objective of the Cotonou Partnership Agreement is to promote economic, social and cultural development in ACP countries along with eradicating poverty (complying with the Millennium Development Goals) (Borrmann and Busse 2007, Nurse et al. 2008, EC 2010). This agreement is a milestone in the EU's development policy and has brought several changes in the international development cooperation regarding ACP states (EC 2010, Degnbol-Martinussen and Engberg-Pedersen 2005, Karingi et al. 2005, Szent-Iványi 2008):

- in the context of the new relationship, *partnership* became an important factor (as the official name of the agreement shows);
- *political conditionality* is introduced: countries hurting human rights will be excluded from the cooperation;
- broader *political dialogue* is ensured between the partner countries, concerning the fields of development cooperation, migration, arms trade and security;

[1] This paper does not analyse the Lomé Conventions. See, for example, Babarinde (1994) or Curran et al. (2008).

- involvement of non-governmental actors into the development processes is in focus;
- the overall objective is to decrease poverty, provide sustainable development and integrate developing countries into world trade;
- countries in most need are eligible for financial assistance, and the EU prefers *good performers*; and
- the two pillars of the EU's development cooperation continued to be trade and aid.

As a result, Cotonou Agreement requires providing aid for the most eligible countries and for those which can use these financial resources in the most efficient way. However, there is a risk that countries which are not in the direct interest of the EU will not obtain Community assistance. Altogether, laying down conditions and aiming at reducing poverty, the new agreement complies with the challenges of international development policy, however, there are fears that partner countries may suffer some losses. Ensuring a transition period, Lomé Conventions were in effect till the end of 2007, and during this period countries should have agreed on new types of partnership, called Economic Partnership Agreements, but they failed to do so (EC 2014).

3.2 Economic Partnership Agreements

From 2002 onwards, several negotiations started between the ACP and EU partners. The main aim is to negotiate with different ACP regions[2] in order to sign agreements which really contribute to their economic development and to foster their share in world trade (Vollmer et al. 2009, Ukpe 2010). Consequently, EPAs are not traditional trade agreements, but agreements that aim at real development through trade policy and by promoting regional integration of ACP countries[3] (Szent-Iványi 2008, Vollmer et al. 2009). Its concept includes reciprocal trade preferences and free trade, though it may at the same time contain a large risk for ACP countries, as they have to ensure access for European companies to their own market – though only to a smaller extent (averagely 80 percent in 15 years) (Vollmer et al. 2009, EC 2014).

Negotiations are going forward, but several problems have occurred. As a result, though EPA negotiations should have been finished by the end of 2007, only Caribbean countries were able to conclude them (Nurse et al. 2008, Vollmer et al. 2009), while other regions signed only transition (interim) agreements aiming at gradual liberalization of merchandise up to 80-95 percent in the next 15-20 years, but the EU ensures ACP countries free access to European markets (Table 2) (Szent-Iványi 2008).

[2] The regions are West-African Economic and Monetary Union, Central-African Economic and Monetary Union, East African Community, South African Development Community, Caribbean Forum of African, Caribbean, Pacific States, group of Pacific States (Ukpe 2010).
[3] In Africa the overlapping integration process hinders deep integration (Shams 2005).

Table 2 Rate of market opening and deadline in the ACP regions

Region	Type of agreement	Rate of market opening (%)	Deadline (within years)
Caribbean	final	61 82.7	10 15
East African Community	interim EBA	64 80 82	2 15 25
Eastern and Southern Africa	interim EBA	differs among members from 80 to 97	
Southern Africa	interim EBA (Angola)	86	2
Pacific: Papua New Guinea, Fiji	interim EBA	88 (PNG) 80 (Fiji)	15 15
Central Africa	bilateral (Cameroon) EBA	80	15
West Africa	bilateral (Ghana and Cote d'Ivoire) EBA	70 (CI) 80 (Ghana)	15

Note: EBA stands for Everything But Arms initiative
Source: author's own construction based on Vollmer et al. (2009)

Several reasons may be listed why the Economic Partnership Agreements could not be concluded in time. Szent-Iványi (2008) and Ukpe (2010) argue that the largest problem is the lack of confidence and growing scepticism towards the European Union: ACP countries do not trust the EU any more. But the main economic risks of EPAs for ACP countries are the following (Szent-Iványi 2008, Boysen and Matthews 2009, Vollmer et al 2009, Ukpe 2010):

- economic structure of ACP countries cannot adjust to the new circumstances on time because of the problematic supply side capacity;
- decreasing income from tariffs leads to the postponement of development projects;
- regional integrations have trade creating and trade diversion effects, consequently, countries may not gain the same results from a regional integration;
- the new competition that arises with the appearance of European products may deteriorate companies in ACP countries;
- interim agreements concluded so far may hinder the regional integration process between African countries;
- the significant agriculture subsidy in European agriculture may cause losses in the agricultural exporting countries (and they face unequal competition);
- referring to sanitary regulations, the EU may not let in ACP agricultural export;
- the six regions export mainly natural resources: diamond, mineral oil and palm oil, which account for more than 40 percent of the regions' exports;
- there are regulations which unambiguously serve the interests of the Community (for instance, the protection of intellectual property, trade in services, or investment).

There are many studies investigating the potential effects of EPAs on welfare and trade promotion, though their results are mixed because of the trade creation and trade diversion effects (ODI 2006). Karingi et al. (2005) analysed the welfare impacts of EPAs on African countries. They found that the EU would gain the most on this business, and the expanded trade is the consequence of trade creation and trade diversion from the rest of the world, as well. Furthermore, African countries are likely to face a decrease in government revenues owing to tariff reduction (or elimination). This requires higher adjustment costs (tax reforms, administration changes) that African countries need to pay, on the one hand, and which jeopardizes African development, on the other hand.

Vollmer et al. (2009) – similarly to Karingi et al. (2005) – analysed the welfare effects of interim agreements on nine Sub-Saharan African countries. They claim that four of the nine countries enjoy positive effects of tariff reduction, while the remaining countries do not experience positive welfare changes. However, the authors argue that some loss of tariff reduction as a result does not mean that EPAs have negative impacts on African countries because they can gain more in this framework than under the simple GSP-scheme. Furthermore, lower tariffs result in lower government income (since the EU is the largest trade partner of the investigated countries) requiring lower market opening and longer transition period for African countries. The authors acknowledge that the European Union benefits the most from these agreements, but these extra profits should cover the EU's further development actions.

Busse and Grossman (2007) analysed the fiscal and trade impacts of EPAs in West African countries. Their empirical results indicate that tariff reduction due to free trade agreements may cause troubles for African countries, therefore the authors suggest similar ideas than Vollmer et al. (2009): complementary reforms should be implemented before EPAs come into force. Furthermore, Borrmann and Busse (2007) emphasize that only countries with a high quality institutional system can benefit from the economic changes arising during the EPA-era. Based on these statements, the authors conclude that African countries may become the largest losers of these free trade agreements.

Fontagné et al. (2008) empirically tested some scenarios of the EPAs. According to their results, ACP countries' loss will be large owing to tariff reduction, and the success depends on how the ACP-block can implement complementary reforms and how they can change their fiscal basis. Boysen and Matthews (2009) investigated the impacts of different EPA-scenarios on poverty in Uganda. Their results indicate that the extent of loss depends on the sensitivity of products involved into the negotiations, though the poorest people will lose the most after implementing the EPA.

Drawing on these (real) fears and risks, developing countries required additional financial resources for concluding and implementing such an agreement and for adjusting to the new circumstances. As a result, ACP countries asked the EU to use Aid for Trade to help them meet these requirements (Hinkle et al. 2005, Meyn 2008).

4. Potential impacts of Aid for Trade

Since many countries were unable to follow the liberalization process and to adjust to the new international trade environment, the WTO launched the Aid for Trade initiative in 2005. AfT may be essential for developing countries, since they would be the main losers if Doha Round fails (Abbott et al. 2009, Deardorff and Stern 2009).

The programme aims to help developing countries *expand* their exports, *participate* in the multilateral trade system more effectively, and *benefit* from liberalisation. In order to fulfil these goals, *six areas of financial assistance* were determined (WTO 2006): *trade policy and regulation; trade development; trade-related infrastructure; building productive capacity;*

trade-related adjustment; and other trade-related needs. As a result, the primary objective of AfT is to improve the supply-side capacity (Hallaert and Munro 2009), which may lead to the development of the business environment. A high quality business environment is essential to reach the positive effects of participating in international trade (Freund and Bolaky 2008, Dreger and Herzer 2011). However, the program has also been criticized sharply: though AfT aims to support the least developed countries, there are empirical evidences showing that in practice aid allocation does not follow this expectation (Udvari 2011, Uhrin and Schuszter 2013). For instance, the European Union has implemented more AfT projects in China (as one of the largest exporters in the world) than in Sub-Saharan Africa (Udvari 2013).

Although AfT belongs to the financial assistance group, its economic impacts seem to be more spectacular and persuasive than the effects of general development assistance. According to the official documents, it is not expected that AfT would behave as a tied aid, that is, recipient countries do not have to follow the conditions of donor countries. However, relevant literature analysing the potential impacts of AfT assumes this statement. Studies discussing these impacts can be grouped as follows: studies which analyse the impacts of AfT on export volumes regardless of donors (Cali and te Velde 2011, Pettersson and Johansson 2013); or studies which investigate the impacts of AfT provided by a donor on trade between the recipient and the donor (Bearce et al., 2013; Udvari, 2013; Uhrin and Schuszter, 2013). Furthermore, only few studies have dealt with the European Union's AfT-activity. Udvari (2013) showed with a gravity model that AfT provided by the EU might cause trade expansion between donors and recipients, though in her analysis total trade (sum of exports and imports) was the dependent variable. Consequently, these results may be distorting as her model does not answer the question whether AfT contributes to export or import expansion in developing countries, that is, which party (the EU or the developing countries) gain more.

Cali and te Velde (2011) analysed the export volume changes by involving 100 developing countries in the investigation. According to their econometric results, AfT assistance on the development of economic infrastructure results in growing exports. Pettersson and Johansson (2013) have similar results: assisting the development of trade infrastructure results in export growth, however, the authors do not give as large emphasis to AfT as Cali and te Velde (2011) did. Helble et al. (2009) found the assistance on trade policy as a significant factor: one percent growth in trade policy aid results in 818 million USD trade expansion worldwide. Bearce et al. (2013) narrowed their analysis to the aid activity of the USA. Their results indicate that one dollar growth in AfT results in 65 dollar trade expansion in the recipient country, but this impact may be higher in countries most in need (poorer, landlocked). Vijil and Wagner (2010) found that 10 percent growth in aid for improving trade infrastructure results in 1.22 percent growth of the recipient's export. Furthermore, Vijil (2013) analysed how AfT may contribute to economic integration. According to her results, AfT has positive effects on both South-South and North-South integrations. However, there is no answer to how AfT influences intra-trade within an integration. Udvari and Kis (2014) aimed to answer this question in their study: their empirical results proved that AfT provided to the member countries of the Economic Community of West African States (ECOWAS) does not have significant impact on expanding intra-regional trade.

Besides general and overall approaches, there are studies investigating the effects from a donor's perspective. These analyses may be more reliable since the good performing countries would not cover the less good performing countries' achievements (or vice versa). Brayzs (2013) dealt with four donors (USA, Japan, Germany and Norway) in four recipient countries (Indonesia, Philippines, Timor-Leste and Vietnam). The author stated that the AfT had different impacts depending on the donor and the recipient. This statement refers to the fact that aid activities (including AfT) need to be analysed in a donor-specific way.

Some empirical analyses (Udvari 2013, Uhrin and Schuszter 2013) justify the claim that though AfT has several good objectives, economic, political and strategic interests are more important for donor countries than real needs. For example, Iraq and Afghanistan are among the most supported countries. Or in the USA's aid policy, the USA's own interests are the most important factor. All these may hinder the effectiveness of AfT.

Huchot-Bourdon et al. (2009) analysed these processes in another way. They analysed the relationship between FDI, trade and development, and they created groups of developing countries reflecting the different needs developing countries have and determining the priorities of recipient countries to help donors in their aid allocation. Their results indicate that trade-related needs, especially infrastructure development, are more highlighted in East and West Africa. Consequently, Aid for Trade may have significant effects in the region's development process, including the integration process, too.

This literature review shows that the EU has strong economic and trade relations with developing countries, especially with ACP countries, and the EU is the largest aid provider in the world. The Cotonou Agreement and the Economic Partnership Agreements try to strengthen the relationship between the EU and the ACP countries, however, it is also concerned that additional financial resources are needed. So that developing countries are able to improve their trade capacities, Aid for Trade offers a good opportunity and ACP countries asked the EU to involve this program into the EPA negotiations. Consequently, it is necessary to analyse whether AfT provided by the EU contributes to the trade expansion of ACP countries and whether it is the result of growing trade with EU-15 or with the new member states.

5. Role of Aid for Trade in trade relations: ACP countries and the European Union

This section details the methodology and the results of the empirical analysis concerning the trade expansion impacts of Aid for Trade provided by the EU. First, the process of selecting recipient and donor countries and indicators is detailed, including the measurement questions of Aid for Trade. Then, the gravity model is discussed followed by the analysis of the results.

5.1 Countries and indicators

As a first step, potential recipient and donor countries were selected. The goal was to involve into the analysis as many developing (recipient) countries as possible. Out of the 123 developing countries in the world[4], *82 countries were involved – out of them 41 countries belong to the ACP group*. 33 countries are least developed countries[5], and out of them 26 belong to the ACP block. The remaining developing countries were left out as there was no available data whether they received any AfT assistance from the EU between 2006 and 2012.

As for the donor countries, the OECD's Development Assistance Committee was the starting point. All old EU member states (EU-15) are members of this organization, and since 2013, three new member states (Czech Republic, Slovenia, Slovak Republic) have become members, too. Since the analysis covers the aid activity in the period between 2006 and 2012, the donor activity of the EU-15 was considered as the entire EU's donor activity. This cannot have a distorting

[4] There are 144 low and middle income countries (generally developing countries), but some of them are the so called transition economies (see UN 2011). These countries were left out.

[5] Least developed countries were determined according to the list of the United Nations (UN OHRLLS 2014).

effect, as the EU-15 has experience in development policy and has built up a widespread aid activity, while NMS have less relationship with developing countries.[6] Furthermore, *Article 210* of the Lisbon Treaty also supports this approach, as it says that in order to establish a more effective development policy, member states and the community work together and harmonize their development activity in the scene of international organizations. As a result, the EU's donor activity is in fact the sum of the EU-15's activity and the aid data of EU Institutions.

In calculating current Aid for Trade trends, recommendations of Turner (2008) and OECD-CRS (2011) were followed. According to them, AfT amounts are equal to the sum of assistance on several sub-sectors on which the OECD collects data. Both commitments and disbursements were available to analyse, but disbursed aid was used as basis for calculation, as this amount covers already paid amounts. In this analysis, the following sectors appeared as the sum of AfT:

- *Trade related infrastructure* appears in the OECD database as *economic infrastructure* containing the subsectors of transport and storage; communications; and energy supply.
- The categories of *building productive capacity* and *trade development* appear in the OECD database as *building productive capacity* and consist of three subcategories: bank and financial services; business and other services; agriculture and industry.
- The category of *trade policy and regulations* is the same in the OECD database.[7]

A cross-sectional analysis was prepared because of the short (official) existence of Aid for Trade. Data were collected for the years between 2006 and 2013 (the official existence of Aid for Trade), but in order to handle the endogeneity problem (which will be discussed later), there was a one-year-lag in the case of independent variables. The trade and GDP data originated from the on-line database of UNCTAD Stat (UNCTAD 2014), the aid data from OECD-CRS (2014) and the distance data from CEPII (2011).

5.2 Methodology

The aim of the investigation is to analyse whether Aid for Trade significantly influences trade between the selected developing countries and the European Union as a whole, and between the developing countries and the EU-15 and NMS. For this purpose, a gravity model was calculated. Gravity models are appropriate methods to investigate a benchmark of trade flows (Carey et al. 2007), and assume that trade is positively affected by the income of the partner countries and negatively affected by their distance as the proxy of transport costs (Africano and Magelhães 2005). The specification in present paper was based on the work of Wagner (2003) and Africano and Magelhães (2005) with slight modifications:

$$\ln EXP_{i,eu} = \beta_0 + \beta_1 \ln(Y_i {*} Y_{eu}) + \beta_2 \ln(Yc_i {*} Yc_{eu}) + \beta_3 \ln Dist_{i,eu} + \beta_4 \ln Aft + \beta_5\, Time + \\ + \beta_6\, ACP + \beta_7\, Oil + \beta_8\, LDC + \varepsilon \tag{1}$$

- $EXP_{i,eu}$ denotes export from i developing country to the EU;
- Y_i, Y_{eu} are the total GDP in country i and in the EU. Their product refers to the market size;
- Yc_i, Y_{eu} denote the GDP per capita in country i and in the EU, and their product indicates the income level;

6 List of both the recipient and donor countries can be found in the Appendix.

7 Helble et al. (2009), Cali and te Velde (2011), Hoekman and Wilson (2010), and Vijil and Wagner (2010) have similar approach in their empirical investigation.

- $Dist_{i,eu}$ means the distance between country *i* and the European Union;
- *Time* variable denotes the years (2006-2012) involved as dummy variables (where 1 indicates the certain year, otherwise 0);
- *ACP, Oil, LDC* are dummy variables for ACP-countries, oil exporting-countries and least developed countries, where zero means non-ACP countries and oil exporting countries, and 1 means the contrary. The same is true for the *LDC* dummy.

In order to analyse what kind of direct effects the Aid for Trade has in the different country groups (ACP, LDC, oil-exporting), equation (2) contains the following interactions: the coefficient of *lnAfT*ACP* shows how much impact the Aid for Trade has on the trade expansion if the recipient country belongs to the ACP group. The other interactions (*AfT*LDC* and *AfT*Oil*) can be solved similarly.

$$\ln EXP_{i,eu} = \beta_0 + \beta_1 \ln(Y_i {*} Y_{eu}) + \beta_2 \ln(Yc_i {*} Yc_{eu}) + \beta_3 \ln Dist_{i,eu} + \beta_4 \ln Aft * ACP + \\ + \beta_5 \ln Aft * LDC + \beta_6 \ln AfT{*}Oil + \beta_7\, Time + \beta_8 \ln AfT + \varepsilon \tag{2}$$

Although gravity models may contain other indicators, too, such as common language or colonial past (see for example the studies of Africano and Magelhães (2005), Carey et al. (2007) or Wagner (2003)), they were found not important since the EU as a whole can be imagined as a great economic power with several colonies. Almost all countries in the sample share a colonial past with some EU-member states; therefore investigating this aspect would not denote additional information in this approach. Similarly, common language is not relevant in this context in this model. Regarding *distance* as an independent variable, Germany was chosen as a reference country to determine the distance between country *i* and the EU. As in present analysis the EU is considered as an integrated whole, a fix point was needed to which the distance of sample countries could be related. The mean of the nearest and furthest points could have been another potential point of reference, but it resulted in different 'capital' for the EU, therefore this solution was rejected.

It was a great challenge how to handle the case if AfT was zero in a certain country in some of the investigated – but not in all – years. Wagner (2003) and Cali and te Velde (2011) mention a solution: if the aid is zero, one can calculate as (*1+aid*), but they add that it may have distorting effects. To handle this situation, Wagner (2003) – who Cali and te Velde (2010) follow – recommends dummy variables (1 if aid is zero, and 0 if aid is above zero), which methodological device was partly accepted during this analysis. Consequently, calculating the logarithm of aid, the following specification was used as Wagner (2003) recommends: ln(max(1, aid). But the dummy variables contained no more information, so they were left out. As a result, this calculation was able to keep aid level zero where it was that originally.

Aid-related regression models always raise the question of endogeneity, meaning that dependent variables highly correlate with the error term. In the present case it means that it is not sure whether aid results in increasing trade or better trade performance has an impact on aid allocation. Since it has a distorting effect, it is needed to be solved. A solution is to involve instrumental or proxy variables in the analysis (for instance, Angeles and Neanidis 2009, or Grange et al. 2009), though these instruments may describe the original variable incorrectly, this way causing further distortion (Younas 2008). In aid studies the most common tool for handling the endogeneity problem is to calculate with lagged independent variables (Younas 2008, Kimura et al. 2012). However, there is no consensus in this question. Cali and te Velde (2011) calculated with lagged aid data in their regression model, while Wagner (2003) analysed the aid effect on trade both lagged and not lagged. He concludes that current (and not previous) year's development assistance contributes to the trade performance in the current year. According to these, in present analysis all independent variables are lagged by one year. Its economic sense is that earlier economic performance determines present trade performance, and AfT received in the previous year leads to trade expansion which appears in the following year's performance.

These calculations were prepared for the EU (itself), the EU-15 countries and the NMS. The models were tested whether they met the requirements of regression models (heteroskedasticity, multicollinearity, autocorrelation). When a problem occurred it was solved by suitable methods (for instance, the Cochrane Orcutt method for handling autocorrelation). The following chapters contain the final results.

5.3 The EU

Before detailing the old and new member states' trade with particular developing countries, the EU's performance need to be presented (Table 3). Model 1 includes the Aid for Trade as a variable and other dummy variables as well. AfT provided by the EU has no significant impact on the exports of developing countries to the EU. Instead, market size (paired GDP) determines the export: the larger the market is, the larger the export is. Furthermore, if the country belongs to the ACP group, export to the EU is higher, while in the case of least developed countries this process goes to the opposite direction. Consequently, ACP countries export more to the EU, while trade with least developed countries is decreasing.

Table 3 Coefficients (and p-values) – Partner: EU-27

Variable	Model 1	Model 2
Constant	-13.694 (0.000)	-14.266 (0.000)
Paired GDP (ln)	1.121. (0.000)	1.113 (0.000)
Paired GDP per capita (ln)	-0.021 (0.771)	0.013 (0.853)
Distance (ln)	-0.213 (0.039)	-0.181 (0.082)
2007 (0: no. 1: yes)	-0.176 (0.269)	-0.194 (0.230)
2008 (0: no. 1: yes)	-0.612 (0.000)	-0.631 (0.000)
2009 (0: no. 1: yes)	-0.325 (0.043)	-0.336 (0.039)
2010 (0: no. 1: yes)	-0.224 (0.166)	-0.236 (0.553)
2011 (0: no. 1: yes)	-0.528 (0.002)	-0.556 (0.001)
2012 (0: no. 1: yes)	-0.517 (0.002)	-0.538 (0.001)
Total Aid for Trade (ln)	0.000 (0.998)	-0.026 (0.570)
ACP-countries (0: no. 1: yes)	0.724 (0.000)	
Oil exporting countries (0: no. 1: yes)	0.179 (0.143)	
Least developed countries (0: no. 1: yes)	-0.662 (0.000)	
AfT*ACP		0.169 (0.000)
AfT*LDC		-0.141 (0.000)
AfT*Oil exporters		0.055 (0.076)
R^2	0.831	0.825
Adj. R^2	0.827	0.821
Observations	574	574
VIF max.	3.305	3.093
Durbin-Watson stat.	2.063	2.062

Source: own calculations

Model 2 includes the AfT*ACP interaction indicating the direct impacts of AfT on ACP countries. This interaction has significant impact on the exports. If the country belongs to the ACP group, one percent growth in AfT assistance results in 1.18 percent growth in exports. On the contrary, increasing AfT in the least developed countries will result in decreasing exports. The reason for this may be that the infrastructure of allocating and using aid is more underdeveloped in these countries, therefore, aid may counteract export performance.

5.4 Old member states

The same procedure was followed in the case of the old EU-members to analyse whether Aid for Trade provided by the EU contributes to the expanding exports of developing countries to the EU-15. The results are shown in Table 4. There are no great differences between the two models. There are only some significant variables: the market size (paired GDP) and the constants, and some years (with negative impacts). However, the coefficients are similar to those in the case of the EU-27.

Table 4 Coefficients (and p-values) – Partner: EU-15

Variable	Model 1	Model 2
Constant	-14.106 (0.000)	-14.719 (0.000)
Paired GDP (ln)	1.115 (0.000)	1.110 (0.000)
Paired GDP per capita (ln)	-0.009 (0.899)	0.028 (0.688)
Distance (ln)	-0.183 (0.075)	-0.156 (0.131)
2007 (0: no. 1: yes)	-0.182 (0.251)	-0.202 (0.210)
2008 (0: no. 1: yes)	-0.618 (0.000)	-0.640 (0.000)
2009 (0: no. 1: yes)	-0.332 (0.038)	-0.345 (0.034)
2010 (0: no. 1: yes)	-0.235 (0.144)	-0.250 (0.125)
2011 (0: no. 1: yes)	-0.555 (0.001)	-0.587 (0.000)
2012 (0: no. 1: yes)	-0.535 (0.001)	-0.558 (0.001)
Total Aid for Trade (ln)	0.008 (0.854)	-0.025 (0.596)
ACP-countries (0: no. 1: yes)	0.732 (0.000)	
Oil exporting countries (0: no. 1: yes)	0.216 (0.076)	
Least developed countries (0: no. 1: yes)	-0.647 (0.000)	
AfT*ACP		0.173 (0.000)
AfT*LDC		-0.134 (0.000)
AfT*Oil exporters		0.064 (0.038)
R^2	**0.832**	**0.826**
Adj. R^2	**0.828**	**0.822**
Observations	**574**	**574**
VIF max.	**3.153**	**3.093**
Durbin-Watson stat.	**2.115**	**2.113**

Source: own calculations

Aid for Trade is not significant in any case. That is, the Aid for Trade assistance provided by the EU-15 does not contribute to the increasing exports of the recipients to the EU-15. ACP and least developed countries show the same tendency as it was in the case of the EU-27. This is true for the second model, too, where AfT to ACP countries results in growing exports, while the contrary is true for the least developed countries. Furthermore, in the case of the EU-15, AfT provided to oil exporting countries results in an increasing export of these developing countries to the EU-15. To sum up, if ACP countries receive AfT, it results in a favourable export growth towards the EU market.

5.5 New member states

The next phase of the analysis was to investigate the effects of Aid for Trade on exports of developing countries to the new EU-members. Table 5 contains the results of the regression models. These results totally differ from the results of the EU and the EU-15: neither year is significant in this case, while the proxy indicator of income (paired GDP per capita) is significant (it has not been significant so far). Consequently, in the case of NMS, income level determines the exports of developing countries: the richer the country is, the lower volume of exports goes to the NMS. Moreover, not only the least developed countries' but also the ACP countries' variable is significant, both of them have negative coefficients, meaning that if a certain country belongs to these groups, the export volume to the NMS will be lower. The same is true about oil exporting countries indicating that the NMS still have strong connections to Russia.

Table 5 Coefficients and (p-values) – Partner: NMS

Variable	Model 1	Model 2
Constant	-14.944 (0.000)	-20.446 (0.000)
Paired GDP (ln)	1.362 (0.000)	1.386 (0.000)
Paired GDP per capita (ln)	-0.617 (0.000)	-0.450 (0.001)
Distance (ln)	-0.044 (0.819)	0.087 (0.658)
2007 (0: no. 1: yes)	0.402 (0.269)	0.311 (0.393)
2008 (0: no. 1: yes)	0.460 (0.193)	0.313 (0.374)
2009 (0: no. 1: yes)	0.153 (0.663)	-0.176 (0.614)
2010 (0: no. 1: yes)	0.361 (0.306)	0.003 (0.992)
2011 (0: no. 1: yes)	0.206 (0.558)	0.196 (0.575)
2012 (0: no. 1: yes)	0.104 (0.768)	-0.115 (0.742)
Total Aid for Trade (ln)	0.082 (0.317)	0.245 (0.007)
ACP-countries (0: no. 1: yes)	-0.423 (0.037)	
Oil exporting countries (0: no. 1: yes)	-0.825 (0.000)	
Least developed countries (0: no. 1: yes)	-1.354 (0.000)	
AfT*ACP		-0.059 (0.266)
AfT*LDC		-0.249 (0.000)
AfT*Oil exporters		-0.165 (0.006)
R^2	**0.673**	**0.663**
Adj. R^2	**0.665**	**0.655**
Observations	**574**	**574**
VIF max.	**3.305**	**3.093**
Durbin-Watson stat.	**2.044**	**2.032**

Source: own calculations

Regarding Model 2, there are further differences from the statements mentioned above. On the one hand, AfT provided to developing countries has a significant impact on exports, however, AfT provided directly to ACP countries does not. On the other hand, AfT to the least developed and oil exporting countries negatively influences the exports of these countries to the markets of the new member states. These results prove that new member states do not have important economic relations with developing countries, and it seems that the new EU members do not tend to create the possibilities for turning this progress back.

6. Conclusions

The objective of present paper was to discuss whether Aid for Trade provided by the EU contributes to the export expansion of developing countries to the EU-15 or to the new EU-members. Gravity models were used to analyse this question.
The EU's new member states do not pay remarkable attention to the relations with developing (including ACP) countries, and the empirical results indicate the same. Although AfT provided by the EU itself does not have significant impact on exports of recipient countries neither to EU nor to the EU-15 or to the new member states, AfT provided to ACP countries has positive effects in terms of exports to the EU-27 and the EU-15. However, the negative and insignificant results in the case of the NMS prove that the EU-15's markets are more attractive to ACP countries. With reference to a study by Udvari (2013) in which the author proved empirically that AfT had a positive impact on total trade between the recipient developing countries and the new member states, now we can accept that this result was driven mainly by the growing exports of NMS to the recipient countries. Consequently, the EU-15 plays the most significant role not only in providing aid to developing countries, but also in ensuring markets for products exported by the ACP countries.

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