Export Performance of the Baltic States: The Effects of the Aid for Trade Initiative

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Abstract: *As a result of the global economic crisis and the situation in the EU, as well as that of the Russian-Ukraine conflict, the Baltic exports have decreased toward these countries, while there is a slight increase in exports to other regions, mainly to Asia, meaning that Asian developing countries have gained larger share in the trade of the Baltic countries. Nevertheless, the trade performance of EU members is also influenced by several EU policies directly or indirectly. Regarding the European development policy, the Aid for Trade (AfT) initiative has a crucial role in helping developing countries to participate in international trade more effectively. It is shown that AfT assistance provided by the EU generally increases the trade volume between the EU and the recipient countries; however, there is no information on how this increase is distributed among EU member states. Consequently, this paper aims to respond to the question of how AfT influences the trade performance of the Baltic states. The research is based on an empirical investigation, by applying a gravity model. The results show that Aid for Trade provided by the EU to developing countries has no significant impact on the exports of the Baltic countries.*

Keywords: *Aid for Trade, export performance, Baltic countries*

JEL: *F14, F35*

1. Introduction

Trade has always been accepted by economists as an engine for growth (Ekholm & Södersten, 2002; Freund & Bolaky, 2008). Trade can contribute to economic development, access to new technology, and increase in productivity due to the more intense competition (Irwin, 2003; Manole & Spatareanu, 2010; Yanikkaya, 2003). The success of the export-oriented South-East Asian nations (South Korea, Taiwan, Hong Kong or Singapore) also strengthened the positive impacts of an export-oriented economic policy. However, some researchers raise the attention to the role of institutions in this process (e.g. Freund & Bolaky 2008). After the international recession in 2008, the importance of exports as a source for economic growth has increased in the European Union member states, too. In

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small countries, like the Baltic ones (Estonia, Latvia and Lithuania), liberal trade policy and open economy is even more necessary for economic development.

The Baltic EU member states are in fact open economies and have trade relations with developed, transition and developing countries alike. The largest proportion of the Baltic exports is directed to developed and transition economies, and the EU member states together with Russia represent the main trading partners of these countries. However, the crisis in the EU and the conflict between Russia and Ukraine has raised the question of whether the Baltic countries should consider other countries, e.g. developing ones, as potential export partners. This question weighs more if we take into consideration that the EU member states' trade is also influenced by several other European policies (e.g. trade policy, innovation policy, environmental policy). The EU's development policy may also affect the trade performance of the member states since its two pillars are trade and aid (Hinkle & Schiff, 2004; Meyn, 2008). These two pillars are connected in the framework of the Aid for Trade (AfT) initiative: the AfT aims to improve the trade infrastructure in developing countries, thus leading to a potential increase in exports of those countries (e.g. Bearce, Finkel, Pérez-Linán, Rodríguez-Zependa, & Surzhko, 2013; Helble, Mann, & Wilson, 2009; Pettersson & Johansson, 2011; Vijil & Wagner, 2010) and/or a decrease related to trade costs (e.g. Cali & te Velde, 2011). It is also shown that besides the trade expansion in developing countries, US exports as a donor also increased on the grounds of AfT (Bearce et al., 2013) and this applies for the EU study-case as well (Udvari, 2013). Concerning the EU, there is less research on how this export expansion is distributed among the EU member states. According to the author`s previous calculations, the AfT contributed to the export expansion in the Iberian (Spain and Portugal) states, (Udvari, 2016), but there is not any analysis showing the effects of AfT on the exports of new member states. Consequently, this research aims to respond to the question of how Aid for Trade initiative influences the trade performance of the Baltic states.

The research–besides analysing the existing literature–is based on an empirical investigation. A gravity model is employed: the dependent variable is the extra-trade of the Baltic EU member states, and the independent ones are GDP, GDP per capita, distance, Aid for Trade and some dummy variables. The observed period covers the years between 2002 and 2014. The findings shed some light on how an EU policy may or may not influence the trade performance of these member states.

The paper is structured in the following way. The first section details the changing trade relations between Estonia, Lithuania and Latvia and developing countries; then the Aid for Trade is introduced. Afterwards, the empirical analysis is detailed with the purpose of emphasizing the results of the models applied.

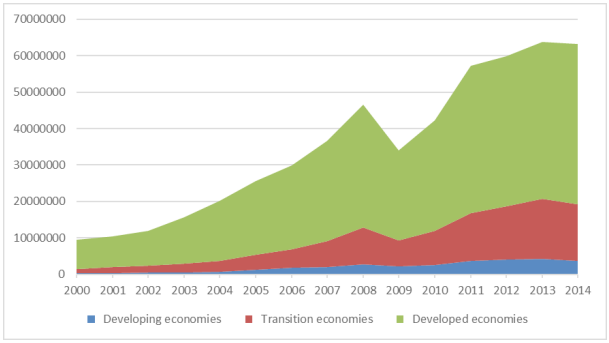
2. Trade relations between the Baltic states and developing countries

After becoming independent at the beginning of the 1990s, the Baltic states (Estonia, Latvia and Lithuania) switched from planned economy to market economy and followed an open and liberal economic policy in order to achieve economic development and to join the European Union and NATO (Rahu, 2015; Veebel, 2015). They followed the same pattern after EU accession, in 2004 (Veebel, 2015), and this momentum opened up new

possibilities for the Baltic states due to its reliable demand (Bernatonyte & Normantiene, 2009). As a result, after the EU accession the share of exports in the GDP raised dramatically from 2004 to 2015 in all Baltic states (Antalóczy & Éltető, 2016): Estonia achieved the best result (from 61.5% to 79.8%) followed by Lithuania (from 47.4% to 76.5%) and Latvia coming on the 3rd place (from 39.1% to 58.8%). This seems to be understandable since they are relatively small countries and a small open economy is, in theory, more successful than a small but closed economy. The analysis of the pre-EU accession period showed that economic growth in the three Baltic states was sustained by exports and investments (Chaido, Athanasios & Antonios, 2004), proving that these countries strongly depend on foreign trade. The process of European integration was a successful one: the three Baltic states managed to rapidly integrate into the European division of labour, as the share of European countries in Baltic exports increased to a large extent; however, the trade is more intensive with Northern EU countries than with the Southern ones (Laaser &Schrader, 2005). Latvia exported to more countries in 2010 than in 1999, so the export expansion was due to the larger sales on more markets (Beņkovskis 2012). Altogether, the Baltic states are export-oriented: Estonia is the most open, followed by Lithuania and Latvia (Antalóczy & Éltető, 2016; Veebel, 2015). However, despite their EU accession, Russia remained one of the main trading partners of the Baltic states, on the one hand; and the value-added level of the Baltic exports is diverse, on the other hand: Estonia can export high-technology products, while Latvia has a greater role in exporting raw materials (Laaser &Schrader, 2005).

The effects of this liberal policy should also be detected in the trade data. In this analysis, the emphasis will be put on the change investigation of territorial focus due to to the crisis of 2007/2008. According to UNCTADStat (2016) data, the exports of the Baltic states have continuously been increasing since 2000 (Figure 1). However, the global economic crisis hit the new member states – including the Baltic ones – and this lead to a deep economic recession (Veebel, 2015), which can be noticed in the performance of the trade, too. There was a significant drop in 2009: the exports of the Baltic states decreased by 27% from 2008 to 2009. This drop is the highest in the case of the trade with developed economies (26.85%), while there was a 17% decrease in the trade with developing countries. Lithuania registered the fastest growth rate in exports after the economic recession (Veebel, 2015). However, the Baltic states prefer developed economies to other country groups (which is not so surprising given the fact that their trade with EU-countries is intensive), although we can experience an increased role of transition economies and developing countries in the exports of the Baltic states. This shift was foreseen, since the Russian Federation is one of the transition countries and outside of the EU that the Baltic countries trade the most with. (Oja, 2015). Russia is the third largest trading partner of Estonia after Sweden and Finland (Eesti Pank, 2014; Raudjärv, 2015). As a result, trade performance and economic success of the Baltic states depend on the trade with Russia, and the interdependence is very strong: the Russian crisis in 1998 resulted in an economic recession for the Baltic states and less trade with Russia (Obiora, 2009); however this domino effect has also lead to increased trade volumes with Finland or Sweden (Eamets, Varblane, & Sõstra, 2003). Furthermore, the recent sanctions and counter-sanctions set due to the Russian-Ukrainian conflict caused a profound drop in the Baltic states' trade after 2014 (Antalóczy & Éltető, 2016; Jakobsons, 2014; Oja, 2015).

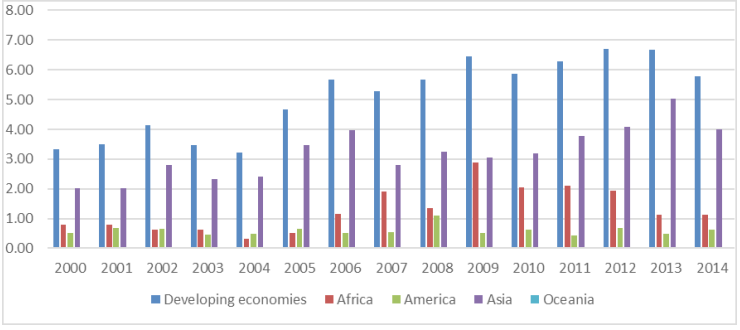
Figure 1: Exports of Baltic States to different country groups, 2000-2014 (thousands of USD)



Source: UNCTADStat (2016)

Concerning the relations between the Baltic states and the developing countries, the Baltic states – following the requirements of the EU membership (Hilmarsson, 2011) – have been providing development aid since their accession. However, because of the limited human and financial resources, the Baltic states prefer neighbouring countries when allocating aid (Hilmarsson, 2011). Despite these facts, the share of developing countries in the Baltic exports doubled from 2000 to 2008 (Figure 2); however, their share is still at a relatively low level in comparison with the Iberian states, where developing countries receive more than 20 percent of the Iberian countries' total exports (Udvari, 2016). The Asian developing countries are the most significant trade partners of the Baltic states, while African and Latin American developing countries are less significant partners. Nevertheless, there is a relatively large improvement in the case of the African countries' share: after the economic crisis, the share of African countries in the Baltic exports almost tripled and became similar to the Baltic exports to the Asian countries. But as the negative impacts of the crisis passed, the African countries lost their share and the trend in the last few years is similar to the one from the beginning of the 2000s.

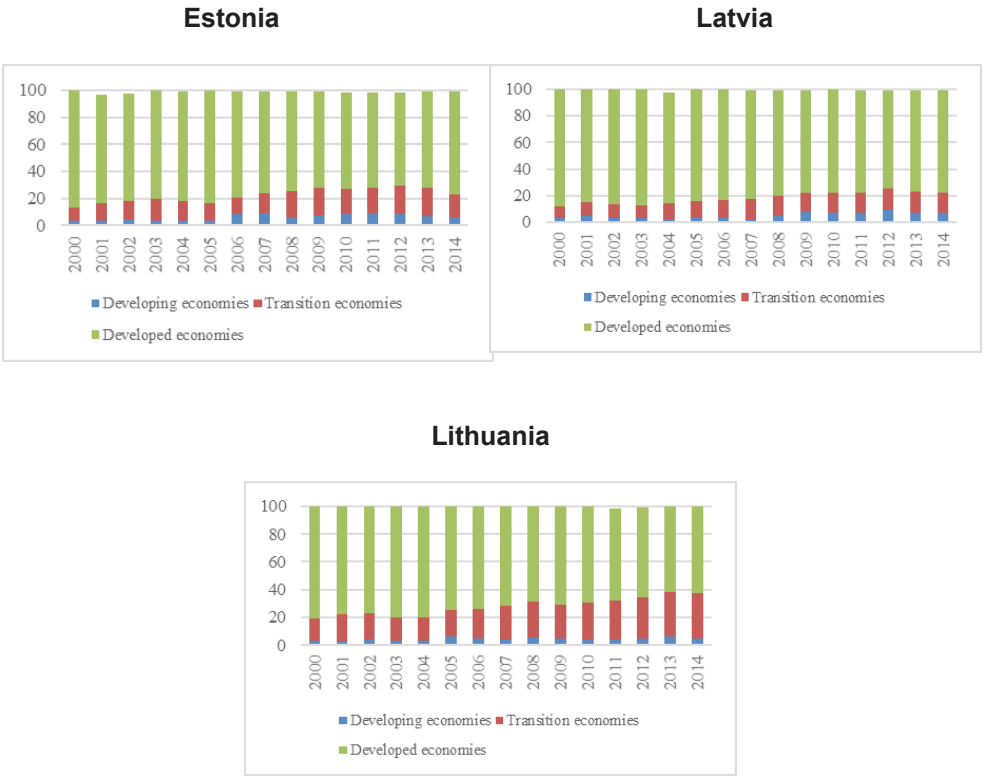
Figure 2: Share of different country groups of the total Baltic export, 2000-2014 (%)



Source: author's calculations, UNCTADStat (2016)

These trends vary across the Baltic states: Estonia, Lithuania and Latvia have different characteristics (Figure 3). Concerning the exports volume of all three states, the developed economies are dominant: more than half of their exports is being directed towards them. In the case of Estonia and Latvia, developed economies receive around 80% of the total exports, while in Lithuania this share decreased from 80% to 60% in the analysed period. In all Baltic states, transition economies come to be significant trade partners; however, they are the most noteworthy in Lithuania: about two-fifths of the Lithuanian exports are made for transition economies, while in Estonia and in Latvia this rate is only 10-15%. Regarding the developing countries, the starting point is very similar in all three Baltic countries: developing states received only 3% of the Baltic countries' exports, but this share increased in the observed period: the major rise can be experienced in the case of Latvia (from 3% to 8% by 2014), then comes Estonia (from 3% to 6% by 2014) and finally Lithuania (from 3% to 5% by 2014). Altogether, we can see that Baltic states' trade performance with developing countries is relatively low. Furthermore, the Baltic countries should find alternative markets for substituting the exports to Russia, since the economic growth of the Baltic states depends on foreign trade.

Figure 3: Share of different country groups of the total exports of the Baltic countries, 2000-2014 (%)



Source: author's calculations, UNCTADStat (2016)

All the above-mentioned facts are in line with the Baltic states' national foreign trade strategies, as Antalóczy and Éltető (2016) detail in their study. These strategies emphasize the importance of emerging markets, but fewer accents are put on the potentials of trade with developing countries. Altogether, the Baltic states do not consider developing countries as new potential markets for their exports.

Even if the Baltic states are in fact open economies (more than three-fourths of their GDP is realized through trade), re-export plays a significant role in their export performance (Notten, 2012). Re-export is a remarkable contributor to the GDP especially in Latvia, where re-export is mainly directed to Estonia and Lithuania, and the main products affected by re-export are transport vehicles, plastics, mineral products, machinery and electrical equipment (Beņkovskis, Bērziņa, & Zorgenfreija, 2016). Due to the relatively large proportion of re-export, investigation of the real export performance of these countries needs further analysis indicators to better comprehend the dynamic of Baltic exports. Concerning the so-called specialization index, which shows–with eliminating the distortion effects of re-exporting–whether a country is net exporter (positive value of the specialization index) or net consumer (negative value of the specialization index), all three Baltic states are net consumers, i.e. they import more than they export (UNCTADStat, 2016). Regarding the trade in value-added, the domestic value-added in exports is a better indicator for analysing export performance. In 2011, the Lithuanian domestic value-added was close to 80% in the case of manufactured products, while in Latvia and Estonia was below 65% (Antalóczy & Éltető, 2016).

Nevertheless, one should remember that all three Baltic countries are members of the European Union; therefore, policies of the EU have a large impact on their trade performance. These policies include, for example, trade policy, innovation policy, environment policy or development policy. The latter refers to, among others, the aid activity of the European Union and its member states. Among different types of aid, we can find the so-called Aid for Trade (AfT) as a relatively new initiative aiming to promote the export of developing countries and to improve the supply-side capacity of underdeveloped countries, so that they become able to participate in international trade more effectively. Although AfT aims to increase the exports of developing countries, there are studies which show that not only developing countries but also developed economies gain from this financial assistance. Therefore, it is worth to analyse more deeply this initiative and to investigate how the AfT activity of the EU influences the trade performance of the Baltic countries.

3. The Aid for Trade initiative

Developing countries have strong relations with developed economies, which manifest in the form of financial flows, this may generate impact on the exchange rates of developing countries (Kiss, 2015). Since many countries were unable to follow the liberalization process and to adjust to the new international trade environment, the World Trade Organization (WTO) launched the Aid for Trade initiative in 2005 in order to harmonize trade policy and development aid (Hynes & Holden, 2016). AfT may be essential for developing countries, since they would be the main losers if Doha Round failed (Abbott, Bentzen, & Tarp, 2009; Deardorff & Stern 2009). The aim of the AfT is threefold: to *expand* the exports

of developing – especially the least-developed – countries; to ensure the *participation of developing countries* in the multilateral trade systems more effectively, and to ensure that developing countries also *benefit* from liberalisation. In order to improve the supply-side capacity, which is essential to enjoy positive effects of participating in international trade (Freund & Bolaky, 2008; Dreger & Herzer, 2011), *six areas of financial assistance* were laid down (WTO, 2006): *trade policy and regulation; trade development; trade-related infrastructure; building productive capacity; trade-related adjustment; and other trade-related needs*. Although AfT itself is a type of foreign aid, its economic outcomes seem to be more spectacular and persuasive than the effects of the general development assistance; however, findings of evaluations on the effects of AfT are still mixed and under debate (Hynes & Holden, 2016). Studies discussing the impacts of the AfT can be clustered as follows (see Table 1): export expansion in developing countries; changes in trade costs; integration of developing countries; foreign investments; donors' interests; the European Union as a donor; and the fears.

Table 1: Literature on the impacts of Aid for Trade

Author(s)	**Empirical findings**
Export expansion in developing countries	
Bearce et al. (2013)	One-dollar growth in AfT results in 65-dollar trade expansion in the recipient country, but this impact may be stronger in countries most in need (poorer, landlocked).
Cali & te Velde (2011)	AfT assistance spent on the development of economic infrastructure results in growing exports in recipient countries.
Pettersson & Johansson (2013)	Supporting the development of trade infrastructure results in export growth.
Helble et al. (2009)	One percent growth in assistance on trade policy results in 818 million USD trade expansion worldwide.
Ghimire, Munkherjee & Alvi (2016)	There is a positive impact of AfT on the export performance of developing countries.
Vijil & Wagner (2010)	10 percent growth in aid for improving trade infrastructure results in 1.22 percent growth in the recipient's export.
Trade costs	
Lanz, Roberts & Taal (2016)	AfT may contribute to decrease the very high trade costs of both merchandise and services trade.
Melo & Wagner (2016)	
Economic integration of developing countries	
Vijil (2013)	AfT has positive effects on both South-South and North-South integrations.
Udvari & Kis (2014)	AfT provided to the member countries of the Economic Community of West African States (ECOWAS) did not have a significant impact on expanding intra-integration trade.
FDI and Aid for Trade	
Houchot-Bourdon, Lipchitz & Rousson (2009)	Trade-related needs, especially infrastructure development, are more highlighted in East and West Africa; so AfT may have significant effects in the region's development process, including the integration process and foreign investments, too.

Lee & Ries (2016)	Improvement in the business environment and in the supply-side capacity, as well as decreasing trade costs may attract more greenfield investments in the recipient countries.
Donors' interests	
Udvari (2013)	Iraq and Afghanistan are among the most supported countries. The European Union has implemented more AfT projects in China (as one of the largest exporters in the world) than in Sub-Saharan Africa.
Uhrin & Schuszter (2013)	In the USA's aid policy, the USA's own interests are the central factor.
Brayzis (2013)	The analysis on four donors (USA, Japan, Germany and Norway) in four recipient countries (Indonesia, Philippines, Timor-Leste and Vietnam) stated that the AfT had different impacts depending on the donor and the recipient
Bearce et al. (2013)	The US exports were growing due to AfT assistance.
The European Union as a donor	
Udvari (2014)	Trade expansion between the EU and the African, Caribbean and Pacific (ACP) countries can be explained by the more intensive role of the old EU member states.
Udvari (2016)	AfT provided to the ACP countries might contribute to the export expansion of Spain and Portugal.
Fears	
Flemming & Tilstam (2016)	The effects of AfT mainly appear in the wealthier part of the society and do not contribute to poverty reduction, such as in Malawi.
Gnangnon (2016)	Although aid dependency may cause development problems in a recipient country, a higher AfT might contribute to substitute trade tax losses in developing countries, so the donor states should increase AfT expenses.
Udvari (2011)	Although AfT aims to support the least developed countries, there are empirical evidences showing that in practice aid allocation does not follow this expectation.

Source: author's synthesis

Regarding the general effects, AfT is judged positively: it is expected that AfT contributes to export expansion, decrease in trade costs, and increase in foreign investments. In addition, AfT may foster economic integration among developing countries. At the same time, a controversial process can also be considered. According to the official documents establishing and explaining the AfT, the AfT is not expected to behave like a tied aid, that is, recipient countries have more freedom on how to use this aid and they are not forced to spend it on imports from the donor countries. However, relevant literature analysing the potential impact of AfT adopts an opposite statement, as some empirical analyses (Udvari, 2013; Uhrin & Schuszter, 2013) justify the claim that though AfT has several good objectives, economic, political and strategic interests are more important for donor countries than the real needs of developing countries. For instance, Bearce et al. (2013) explained in their research that AfT provided by the US results in export expansion not only in recipient countries but even in the US. 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

of whether AfT contributes to export or import expansion in developing countries, that is, which partner (the EU or the developing countries) gains more. In her following studies (Udvari, 2014; 2016) she showed that the old EU member states, on the one hand, and the Iberian countries, on the other hand, benefit from the AfT provided by the EU.

Altogether, AfT may contribute to the development of the recipient countries through direct and indirect channels. The empirical findings mentioned above also refer to the fact that aid activities (including AfT) need to be analysed in a donor-specific way: does better business environment and better position in international trade result in more imports in developing countries or not? To respond to this question, the Aid for Trade provided by the EU and the trade between developing countries and the Baltic states are taken into consideration in the present study. The EU is one of the largest donors and provides a relatively high amount of AfT to developing countries, and previous researchers proved that AfT results in more trade between developing countries and old EU member states. Furthermore, we could see that developing countries play a growing role in the exports of Baltic EU members.

4. Effects of AfT on the Baltic exports

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 applied is discussed followed by the analysis of the results.

4.1 Sample countries and measuring AfT

Regarding the recipient countries, the main goal was to involve as many developing countries as possible into the analysis. Out of the 123 developing countries in the world[2], *78 countries were included in the analysis, out of which 39 countries belong to the ACP group*[3]. 29 countries represent least developed countries[4], and out of them 24 belong to the ACP block. The remaining developing countries were left out as there was no available data, regardless of the fact that they received or not any AfT assistance from the EU between 2005 and 2012.[5] The most recent available data were used in the empirical analysis. Since the analysis of the export performance of the Baltic States stands in the centre of research, their export data were collected from the UNCTADStat database for the period between 2006 and 2013.

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

[3] ACP countries refer to African, Caribbean and Pacific countries. Most of them were former colonies of any of the EU member states, and by now the EU has built up special relation with these countries, see, for example, the Lomé Conventions or recently the Cotonou Partnership Agreement. For more details, see, e.g. Dobošová (2007).

[4] Least developed countries were determined according to the list of the United Nations (UN OHRLLS, 2016).

[5] Although there are several statistical methods to overcome the missing data problem (see, for instance, Sávai & Kiss, 2016), and there are more studies in aid literature to overcome this issue (e.g. Udvari et al., 2016), we decided to take these countries out of the analysis because the large proportion of missing data would distort the analysis.

Calculating Aid for Trade was slightly complicated, a decision about the donors and how to calculate the total amount of AfT had to be made:

(1) Donors: 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 four new member states (Czech Republic, Slovenia, Slovak Republic and Hungary) have become members, too. None of the Baltic states is member of this organization. Since the analysis covers the AfT-activity between 2006 and 2012, the aid provided by the EU-15 and the EU institutions was considered to be the entire EU's donor activity. Since the EU-15 has experience in development policy and has built up a widespread aid activity, while new member states have fewer relationships with developing countries, this choice cannot have a distorting effect on the results.

(2) Total amount of AfT: Calculating the current amounts of AfT, recommendations of Turner (2008), OECD-CRS (2016) and Hynes and Holden (2016) were followed. According to them, AfT amounts are equal to the sum of assistance provided to several sub-sectors on which the OECD collects data. The sectoral data contained only disbursed aid. The following sectors were included to calculate the sum of AfT[6]:

- *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 consists 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.

A cross-sectional analysis was prepared because of the short (official) existence of AfT. Data were collected for the period of 2005-2012 (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 originate from the on-line database of UNCTADStat (2016), the aid data originate from OECD-CRS (2016) and the distance, common language and colonial past data originate from CEPII database (Mayer & Zignago, 2011).

4.2 Methodology

The aim of the investigation is to analyse whether Aid for Trade provided by the EU contributed to the improvement of the Baltic States' export performance significantly or not. In order to achieve this purpose, a gravity model is applied, which is an appropriate method to investigate trade flows (Carey, Gupta, & Jacoby, 2007). According to the model, trade is positively affected by the income of partner countries and negatively affected by their distance as a proxy for transport costs (Africano & Magelhães, 2005). In order to conduct the best analysis, we run three models. The ground specifications in the present

[6] 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.

paper are as follows:

$$\ln EXP_{j,t} = \beta_0 + \beta_1 \ln(Y_{i,t-1}) + \beta_2 \ln(Yc_{i,t-1}) + \beta_4 \ln AfT_{i,t-1} + \varepsilon, \qquad (1)$$

- $EXP_{j,t}$ denotes export from *j* Baltic state to developing countries; exports from Baltic countries are aggregated;
- $Y_{i,t-1}$ denotes the GDP in country *i*, and this shows the market size;
- $Yc_{i,t-1}$ denote the GDP per capita in country *i* referring to the income level.

In the second model, a dummy variable for the economic crisis (*Crisis*) was added where 0 denotes the years before and after the crises and 1 represents the years in crisis (2008-2009). The distance between country *i* and Baltic States ($Dist_{i,j}$) was also measured as an independent variable:

$$\ln EXP_{j,t} = \beta_0 + \beta_1 \ln(Y_{i,t-1}) + \beta_2 \ln(Yc_{i,t-1}) + \beta_3 \ln Dist_{i,j} + \beta_4 \ln AfT_{i,t-1} + \beta_5 Crisis + \varepsilon, \qquad (2)$$

In order to analyse what kind of direct effects the Aid for Trade has in the different country groups (ACP, LDC and oil-exporting countries), equation (3) contains the following interactions: the coefficients of *lnAfT*LDC, lnAfT*Oil* and *lnAfT*ACP* show how much impact the Aid for Trade has on the trade expansion if a certain recipient country belongs to the least developed countries, oil exporter countries or the ACP countries, respectively.

$$\ln EXP_{j,t} = \beta_0 + \beta_1 \ln(Y_{i,t-1}) + \beta_2 \ln(Yc_{i,t-1}) + \beta_3 \ln Dist_{i,j} + \beta_4 \ln AfT_{i,t-1} + \beta_5 Crisis + \\ + \beta_7 \ln \vec{AfT} * ACP + \beta_8 \ln \vec{AfT} * LDC + \beta_9 \ln AfT * Oil + \varepsilon, \qquad (3)$$

It was a great challenge on 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) suggest a solution: if the aid is zero, one can calculate as (*1+aid*), but they add that it may have a distorting effect. 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, when 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.

Laaser and Schrader (2005) employed a gravity model to investigate the Baltic exports and imports. In their gravity model, they did not use lagged data (the explanatory and the dependent variables were from the same year), however, I cannot follow this methodological approach. Aid-related regression models always raise the question of endogeneity (Ghimire et al., 2016), meaning that dependent variables are highly correlated with the error term. In the present case, it means that it is not sure whether aid increases trade positively, or better trade performance has a positive impact on aid allocation. Since endogeneity has a distorting effect, it is needed to be solved. One solution is to involve instrumental or proxy variables in the analysis (for instance, Angeles & Neanidis, 2009;

Grange, Troncoso, Ibeas, & González, 2009). However, it should also be considered that these instruments may describe the original variable incorrectly, this way causing further distortion (Younas, 2008). In the field of aid studies, the most common tool for handling the endogeneity problem is to calculate with lagged independent variables (Younas, 2008; Kimura, Mori, & Sawada, 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 effects of lagged and not-lagged aid on trade. He concludes that the current (and not the previous) year's development assistance contributes to the trade performance in the given year. According to these conclusions, in the present analysis all independent variables are lagged by one year. Its economic sense is that previous 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 group of the Baltic States. The models were also tested whether they met the requirements of regression models (heteroskedasticity, multicollinearity, autocorrelation).

4.3 Results

Before going into details, a correlation analysis was employed to analyse how strong the connections are between the variables, at the same time to prove the necessity of their involvement in the model (Table 2). The results indicate significant correlations in all cases (GDP, GDP per capita, distance and Aid for Trade) showing that these explanatory variables may have significant impact on the Baltic exports.

Table 2: Correlations with exports of the Baltic States

GDP/capita	Pearson Correlation	0.274**
	Sig. (2-tailed)	0.000
	N	624
GDP	Pearson Correlation	0.616**
	Sig. (2-tailed)	0.000
	N	624
Distance	Pearson Correlation	-0.187**
	Sig. (2-tailed)	0.000
	N	624
AfT	Pearson Correlation	0.340**
	Sig. (2-tailed)	0.000
	N	624

** Correlation is significant at the 0.01 level (2-tailed).

Source: author's calculations

Although the correlation analysis suggested strong results, the regression analysis shows only solid results: the R-square is still acceptable but is below 50% in all three models (Table 3). The first model, which contains only the basic indicators, shows that all

indicators (GDP, GDP per capita and Aid for Trade) have significant impact on the export expansion of the Baltic States. That means that growing Aid for Trade resulted in growing Baltic exports to developing countries. However, the GDP per capita has a negative sign indicating that the Baltic states trade more with richer countries. In the second model, the results are similar, but the Aid for Trade has lost its significance, and distance as a new indicator also has a remarkable impact on the export of the Baltic states: countries which are located farther from the Baltic countries receive less Baltic exports. The third model contains the direct effects of the aid provided to different country groups. None of these variables are significant: in the case of the Baltic states, there is no impact on their export performance whether a developing country, which received Aid for Trade assistance from the EU, is an ACP country, an oil exporting or a least developed country.

Altogether, the Baltic exports depend significantly on the GDP and on the GDP per capita of the developing countries, also the distance is a determining factor: the farther the country is, the less the Baltic countries export to them. The Aid for Trade was significant only in the first model, that is, when controlling with other indicators, the Aid for Trade loses its significance. Furthermore, the Aid for Trade provided to different country groups does not influence the Baltic exports either. All these show that the Baltic states do export to developing countries, but the increase cannot be explained by the Aid for Trade initiative.

Table 3: Coefficients of the gravity models (Dependent variable: Baltic exports)

	Model 1		**Model 2**		**Model 3**	
	Coefficient	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
Constant	-22.680	0.000	-6.142	0.020	-6.563	0.022
AfT	0.278	0.014	-0.026	0.818	-0.044	0.733
gdp_c	-0.372	0.021	-0.468	0.003	-0.425	0.022
gdp	1.330	0.000	1.491	0.000	1.497	0.000
distance			-2.120	0.000	-2.127	0.000
crisis			0.014	0.960	0.015	0.956
acp_aft					0.005	0.954
ldc_aft					0.039	0.689
oil_aft					0.010	0.905
R Square	**0.399**		**0.452**		**0.452**	
Adjusted R Square	**0.397**		**0.447**		**0.445**	

Source: author's calculations

5. Conclusions

The aim of this study was to investigate whether the development policy of the European Union contributed to the export expansion of the Baltic EU member states. As an example, the Aid for Trade initiative was taken into consideration for several reasons. On the one hand, the AfT improves the trade capacity in developing countries and promotes economic development on premise. On the other hand, it is revealed that AfT contributes to the export expansion of not only recipient but also donor countries through the developed business environment. This research with empirical results shows

that Aid for Trade assistance provided to developing countries did not contribute to the export expansion of Estonia, Latvia and Lithuania in the period of 2006-2013. In the basic model, its effect was pointed out, but with the control variables the Aid for Trade lost its significance. The results prove that the Baltic States export to developing countries, but the intensity of this export activity is not influenced by the volume of Aid for Trade provided by the EU.

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