ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

Bachelor Thesis Economics and Business Economics

The Everything But Arms Agreement; An empirical assessment with help of a gravity model

Name student: Friso Oostenbrink

Student ID number: 430877

Supervisor: Aksel Erbahar

Second assessor: …

Date final version: July 30th 2018

Table of Contents

1. Abstract

This paper assesses the effect that the Everything But Arms arrangement has had on the exports of the Least Developed Countries to the European Union. This is done by using a gravity model. As a control group, countries benefitting from the regular Generalized System of Preferences are used. Furthermore, products on which a zero MFN tariff rate is applied are included as a control group. The analysis includes data from 2001, when the arrangement came into force, up until 2014. The analysis showed a positive overall effect on the exports of Least Developed Countries. The effects, however, vary between different types of goods. The largest beneficial effect was seen in the market for agricultural products.

2. Introduction

The reduction and eventual eradication of poverty has been prominently on the agenda of the international community in general and the European Union specifically in recent years and decades. The European Commission even deems it 'a cornerstone of EU relations with the outside world' (2018a). In 2017, global expenditure of Official Development Assistance (ODA) was 130 billion euros, with the EU accounting for 57 percent of that number (European Commission, 2018b). Numerous international institutions are committed to working towards this goal. The best way to achieve this goal has been subject to debate. The effectiveness of development aid, for instance, has been heavily criticized[1]. One of the area where development has played a dominant role is trade policy. Trade is considered to be one of the key areas where developed nations can help developing economies achieve prosperity. On the other hand, developed countries have been accused of paying lip service to free trade while continuing to protect their own industries, especially in the markets for goods that developing countries can produce and export, such as agricultural products (Moyo, 2009).

However, European and American governments have regulations in place that provide special treatment for developing countries. In the United States, for instance, the Generalized System of Preferences provides duty-free access for a number of products from less developed countries. The *African Growth and Opportunity Act* 2000 expands this list of products for 44 African countries. The European Union has three preferential treatment schemes; the 'standard' Generalized Scheme of Preferences, the GSP+ and the Everything But Arms (EBA) arrangement (Regulation 978/2012). The GSP provides duty-free access for non-sensitive products and a reduction of tariffs for sensitive products. Agricultural products are excluded from this scheme. The so-called GSP+ scheme places additional obligations on beneficiary countries in realms such as human and labour rights. This scheme provides some extra benefits on top of the regular GSP preferences. Lastly, the most extensive scheme is the Everything But Arms scheme. It

---

[1] Interesting books on this subject are The White Man's Burden by William Easterly and Dead Aid by Dambisa Moyo

suspends all quota and duties on all products, the only exception being arms and ammunition. Only the Least Developed Countries (LDC's) as established by the UN are eligible for this scheme. The completeness of the preferences seems to answer the critics who accuse the European Union of having ulterior motives. This paper empirically examines the effect that the Everything But Arms arrangement has on the exports of the Least Developed Countries with the help of a gravity model. The research question of this paper is:

'How effective is the Everything But Arms arrangement in increasing export from the Least Developed Countries to the European Union?'

The paper is divided in four parts; in the theoretical framework, the EBA scheme will be described more precisely, and the literature on the unilateral trade preferences in general and the EBA scheme specifically will be discussed. The methodology section will elaborate on the characteristics of the gravity model and the data used for the analysis. The analysis itself will be included in the results section, together with a discussion of its outcome. The conclusion will recapitulate the main findings and embed it in the existing literature.

3. Theoretical framework

3.1 Description of the EBA

The Everything But Arms policy is part of the EU's Generalized Scheme of Preferences (GSP). GSP's came into existence in the early 1970's after the 1968 UN Conference on Trade and Development, granting non-reciprocal trade preferences to developing countries. This concept of unilateral trade preferences favouring a particular set of countries was contrary to article I of the General Agreement on Tariffs and Trade (GATT), so in 1971 a waiver was granted permitting GSP's for a period of ten years. This waiver was succeeded by the 1979 decision known as the *Enabling Clause* but officially titled *Differential and More Favorable Treatment, Reciprocity and Fuller Participation of Developing Countries* (see for instance Bartels, 2003).

The concept of the EBA initiative came from WTO Director General Renato Ruggiero (1996). He called for reduction of all tariffs to zero and the abolishment of all quantitative restrictions least developed countries faced. Faber and Orbie (2009) give an interesting insight into the way this call was answered by the European Union. A proposal put forward by the European Commission (more precisely the Directorate General Trade) lead to a heated debate, not only between Member States, but even within the executive branch of the EU. DG Trade had initiated the discussion but met with opposition from DG Agriculture. DG Development meanwhile played a minor role but was split within itself. The Development Commissioner, Paul Nielson, was a supporter of the initiative, while senior officials opposed it, fearing it would undermine the special relationship the EU had with the ACP countries. The Member States in the meantime were divided along approximate North-South lines, with Southern countries (France, Spain, Portugal, Italy, Greece, Belgium) lobbying for a transition period for sensitive products. In the end, such a period was established for bananas (zero tariffs in 2006), rice and sugar (zero tariffs in 2009) (Carbone, 2007). Furthermore, the EU has given itself somewhat more room to implement safeguard measures than in the GSP scheme, 'massive imports into the EU market' being a valid reason to withdraw preferences.

To be eligible for preferences under the EBA arrangement, a country has to be included in the list of Least Developed Nations as measured by the Committee for Developmental Policy of the UN. There are three criteria to be met: Low per capita income, low levels of human assets (measured by health and education indices) and a high economic vulnerability (United Nations Economic Analysis & Policy Division, 2018). At the moment, 47 countries[2] are on this list. All those countries have the right to access the European market duty-free and quota-free (DFQF). That does however not mean that all countries use this right to the same extent. While the overall utilization rate of the EBA is rather high compared to the 'normal' GSP (92 to 67 percent in 2016), the differences between countries are stark. Chad, Guinea Bissau and Kiribati do not use the scheme at all, and less than 1 percent of the exports of Burundi is EBA eligible (all other exports already face zero percent MFN tariffs). On the other hand, a large number have utilization rates of more than 90 percent, along with high eligibility rates. This seems to imply a large degree of diversity in the types of export of different LDC's. The greatest benefactors of the scheme are Bangladesh and Cambodia (66 and 18 percent of the imports under the scheme are from those countries, respectively) and Mozambique and Myanmar provide both 4 percent of the imports under the scheme, leaving a mere 8 percent for all other countries combined. The utilization rate of the EBA arrangement is therefore largely a mirror of the high utilization rate of Bangladesh and Cambodia (European Commission, 2018c).

3.2 Literature about EBA

The Everything but Arms initiative has already been subject to scrutiny by a number of scholars. First, the literature on GSP's in general will be discussed, since EBA is part of the European GSP and most of what can be said about GSP's is also applicable on the EBA arrangement. Focussing on the EBA specifically, most earlier research makes ex ante predictions on the effect of the policy. Later research uses gravity models to empirically assess the effect of the arrangement.

---

[2] See Appendix A for the list of eligible countries

3.2.1 GSP's in general

The success of the various GSP's is considered mixed. Products are for instance exempted from the policy or have a lower preference margin due to their 'sensitivity'. Especially those sensitive products are the goods in which the preference-receiving country has a comparative advantage. For instance, most agricultural products and apparel are considered sensitive under the GSP arrangement, with a corresponding lower preference margin. Furthermore, complying with the Rules of Origin (RoO) in order to be eligible for the scheme can be prohibitively costly, making it cheaper to export under the MFN tariff, especially since different GSP's have different Rules of Origin. Manchin (2006) estimated a cut-off value of the preference margin between 4 and 4.5 percent. Below that threshold, complying with the RoO is more expensive than using the MFN scheme and paying the higher tariff. The problem is strengthened by the fact that the average MFN tariffs for most goods have been declining in the last decades. This not only erodes the advantage that developing countries have under the scheme, it is associated with a declining utilisation rate of the preference scheme.

Another concern is the impact that non-reciprocal trade preferences have on the trade policies of the recipient countries. It might be that the necessity of reciprocity is not an economic reality, as Krugman (1997) argues, but it certainly is a political reality. Özden and Reinhardt (2005) examined the trade policies of recipient countries and found that countries who had quit the GSP scheme had adopted significantly more liberal trade policies than countries that were still in the GSP, making them worse off in the long run. Furthermore, since the preferences are not part of an agreement, but a unilateral step, they can again be unilaterly revoked, placing developing economies in the hands of the preference granting schemes. The unilateral nature of GSP's also increases the uncertainty for preference receiving exporters. A Development Report by the World Bank (1987) even suggested the term 'Faustian bargaining' could be fitting for unilateral preference schemes. The gains for development economies are temporary, minor and risky, while in return they lose all bargaining power in their bilateral negotiations with preference granting countries. Herz and Wagner (2011) find that GSP's in the short run increase the exports of benefit receiving countries, but

negatively affect those countries' exports in the long run due to the complexity of most GSP schemes and the economic disincentives trade preferences for lesser developed economies provide.

3.2.2 Ex ante impact evaluation of the EBA arrangement

Most research was not overly optimistic about the real effects of the EBA initiative. The effect on the exports of the LDC's will be rather limited. The share of the LDC's of EU imports is small and the effect of the policy on EU producers is predicted to be minimal. Stevens and Kennan (2001) identified only six product groups where EBA really have an impact (beef, cheese, maize, bananas, rice and sugar), of which the latter three were subject to transitional arrangements. This is mainly because most countries already received preferential treatment, and a number of products is not exported by the LDC's. Cernat, Laird, Monge-Roffarello and Turrini (2003) use an ex-ante computable general equilibrium model (CGE) to assess the impact of the EBA initiative and go one step further; according to them, a more apt name for the Everything But Arms scheme is 'Nothing But Sugar'; the most meaningful improvements were predicted to occur solely in the sugar sector.

Trueblood and Somwaru (2002), also based on a CGE model, come to the conclusion that the gains of the EBA are, at best, modest. GDP would grow by 2.3 percent, and exports would increase by three percent. Yu and Jensen (2005) conclude that 'it is unlikely that this initiative will generate sizeable welfare gains for the LDCs' and predict a welfare gain of around 300 million US dollars, which is likely to erode if the EU further liberalizes its agricultural market.

3.2.3 Ex ante impact evaluation of the EBA arrangements

The EBA arrangement has also been evaluated with help of empirical data, as will be done in this paper. Likewise, the most common way to do so is with help of a gravity model. For instance, Aiello and Cardamone (2011) assess the effectiveness of the EBA with help of a multiplicative gravity model. They use disaggregated data for 5 agricultural products. The results are mixed. There was a positive effect on the imports of crustaceans and vanilla by the EU from LDC's. The effect on the imports of coffee, molluscs and cloves was not clear. This makes it problematic to generalize the results

for the EBA as a whole. Pishabar and Huchet-Bourdon (2008) compare different EU trade regimes for agricultural products, bot reciprocal and non-reciprocal, and find overall positive effects of special treatment for the exports of the benefit-receiving county, except for, perhaps surprisingly, the EU GSP and EBA. They are however not the only ones to paint a bleak picture of the EBA. Gradeva and Martínez-Zarzoso (2015) observed no, if not a negative, effect of the arrangement on export of ACP LDC's. Silver lining in this paper is that combined with development aid, the EBA can have some effect in improving the exports of LDC's.

BOX 1

Research from an earlier date often mention the Cotonou Agreement as one of the reasons why the EBA scheme is not very effective. The Cotonou Agreement is a treaty between the European Union and the ACP group (African, Caribbean and Pacific group of States), which, amongst other things, provides non-reciprocal duty-free and quota-free access to the LDC's among this group. However, it is the successor of the Lomé Conventions, which were deemed incompatible with WTO Rules. The Cotonou Agreement was transitional and meant as a stepping stone for reciprocal Economic Partnership Agreements (EPA's). Countries unwilling to sign such an EPA had to fall back on the GSP scheme. Most of the LDC's did not participate in an EPA, as they could use the EBA scheme. That is why the EBA utilization rate now is much higher than in the first decade of the millennium.

4. Methodology

The effectiveness of the EBA initiative will be assessed with help of a gravity model. In this framework, the explanatory variable will be the preference margin that is applied onto various products. The total number of tariff lines in the HS system is very substantial on the HS4 level[3]. Including all lines would make the number of observations unreasonably large. Besides only a limited number of lines is relevant, since a great number of products already have zero MFN duties and the LDC's do not export all products to the EU. Therefore, only the tariff lines are included that are marked as 'sensitive' under the GSP scheme. As a control group, products are included that have a zero MFN tariff. Furthermore, when the trade flow is zero it is excluded, since natural logs are used in the model and ln(0) is not defined.

The data consists of EU imports from all 47 current LDC's and 15 countries that exported to the European Union under the regular GSP scheme[4]. The advantage of this is that a number of possible causes for differences in trade patterns other than tariff preferences are filtered out, since both the effect would apply to both the EBA countries and the control group, the GSP countries. For instance, both the Rules of Origin for both groups are identical.   Data from the year the arrangement came into existence, 2001, is included, until 2014. To assess the effectiveness of the EBA scheme, a dummy variable is included that has the value 1 if the import is from an EBA-eligible country and 0 otherwise (that is, if it comes from a GSP-eligible country). Additionally, to be able to differentiate between factors that are specific to the characteristics of countries, a distinction will be made between products that have a zero MFN-tariff and products that do not (these products are the sensitive products under the GSP-scheme).

Most research focuses on a few products and/or multiple trade scheme and differentiate between EU importers. Since this paper only examines one scheme exhaustively, it includes a large number of product lines. Counting every EU member

---

[3] The precise tariff is established on a 8-digit HS level. However, to keep the size of the database workable, 4-digit data will be used.

[4] The Cook Islands and Niue are excluded due to unavailability of data

state as a separate importer would make the database disproportionately large. Therefore, the EU will be considered as one area. Brussels will be the reference point for the determination of the distance.

The effect of the EBA arrangement will be examined with help of a gravity model. This model links the size of trade between countries to their 'masses', normally their GDP, and transport costs, with the distance between the two countries normally being a proxy for this variable. The scope of this paper is confined to the exports of LDC's into the EU. Therefore, although the gravity model is often used to examine bilateral trade flows, only the EU imports from LDC's and GSP beneficiaries will be included.

All in all, the final log-linearized gravity equation used is:

$$\ln(\text{imports})_{jht} = \alpha + \beta_1 \ln(\text{GDP/POP})_{jt} + \beta_2 \ln(\text{POP})_{jt} + \beta_3 \ln(\text{distance})_j + \beta_4 \text{EBA}_j + \beta_5 \text{MFNzero} \quad \beta_6 \text{EBA*MFN} + \delta_t + \varepsilon$$

The left-hand side of the equation is the natural logarithm of the EU import of good h from country j at time t. On the right-hand side are the natural logarithms of the economic sizes of the exporter j at time t, split into GDP per capita and total population, and the distance as secondary variables. δ_t is a bundle of year fixed effect variable. The EBA and MFNzero variable are dummy variables. The EBA variable takes value 1 if the import is from an LDC, and 0 otherwise. The MFNzero variable takes value 1 if the product has a zero MFN tariff and 0 in case of a non-zero MFN tariff. The last variable measures the interaction between the EBA and the MFNzero variable. This means that the coefficient for products from LDC's that have a zero MFN tariff is the sum of the EBA variable and the interaction variable. So, if the EBA arrangement has a positive effect on the exports of LDC's, the interaction variable is negative, for this would mean that LDC's export relatively more products that do not have a zero MFN tariff and thus export relatively more goods that fall under the EBA regime. Lastly, an error term is included.

The analysis will also be done with the addition of three dummy variables reflecting the geographical differences between country. There is a dummy variable for island nations, for landlocked countries and for sharing a border with the European Union[5].

$$\ln(\text{imports})_{jht} = \alpha + \beta_1 \ln(\text{GDP/POP})_{jt} + \beta_2 \ln(\text{POP})_{jt} \; \beta_3 \ln(\text{distance})_j + \beta_{17}\text{EBA}_j + \beta_{18}\text{MFNzero}_h + \beta_{19}\text{EBA*MFN} + \delta_t \; \beta_{20}\text{Island}_j + \beta_{21}\text{Landlocked}_j + \beta_{22}\text{Sharedborder}_j + \varepsilon$$

The source of data on EU imports from LDC's is the Trade Analysis Information System (TRAINS), accessed through the website of the World Bank[6]. The GDP statistics are extracted from the database of the International Monetary fund[7] and the source of the population sizes is the Department of Economic and Social Affairs of the United Nations Secretariat[8].

Firstly, the analysis will be conducted with all goods included in the dataset, to give an overview of the total effect. Secondly, the analysis will be done with a number of subsets, to see whether the effects differ across types of goods. The subsets used are:

1. All agricultural products. The European Union's Common Agricultural Policy is infamous for it protection of domestic suppliers. This subset includes all goods that qualify as 'sensitive' in the GSP scheme (and thus have non-zero tariffs for GSP-countries) and are included in the list of agricultural products in Annex I to the Treaty on the Functioning of the European Union[9].

2. Textiles – A considerable proportion of tariff lines fall under the textiles section. For determining which lines are included in this subset, the definition of 'Textiles' as mentioned in the technical notes of WTO tariff profiles is used[10]

---

[5] The only country in the dataset bordering the European Union is Ukraine.
[6] http://databank.worldbank.org/data/reports.aspx?source=unctad-~-trade-analysis-information-system-%28trains%29
[7] http://www.imf.org/en/Data
[8] https://esa.un.org/unpd/wpp/
[9] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12012E/TXT
[10] http://stat.wto.org/TechnicalNotes/TariffProfileTechnicalNotes_E.htm

3. Clothing – Consisting of only two HS-chapters (HS61-62), a large share of exports under the EBA scheme come from this subset. It is therefore suitable for separate analysis.

4. Sugars and confectionary – Despite being a subset with relatively few observations, the sugar sector was one of the sectors that expected to experience a major impact when the EBA scheme was put into place. Analysing this subset can shed some light on the question whether this expectation was justified. In this category fall the goods of HS-chapter 17.

5. Machinery - A subset with relatively small MFN duties, it will be interesting to see whether that makes a difference in the EBA coefficient. This subset includes the categories of electrical and non-electrical machinery and transport equipment.

6. Minerals, metals and chemicals – This category is meant to include the intermediate type of goods, further back in the value chain.

To test the robustness of the results, the analysis will be repeated with a one-period lag for the EBA, MFNzero and the interaction variable.

5. Results

Following below are the results obtained. The fixed year effects are excluded for brevity.

5.1 Table of results

Ln(imports)	Complete		Textiles		Sugar	
Ln(GDP/POP)	0.282***	-0.115***	0.042	-0.164***	1.732***	0.069
Ln(POP)	0.425***	0.395***	0.576***	0.557***	0.484***	0.397***
Ln(distance)	0.094***	0.906***	0.578***	0.769***	0.906***	3.656***
EBA	-1.223***	-1.185***	-1.527***	-1.533***	-1.040*	-2.046***
MFNzero	-0.077**	-0.121***	-1.620***	-1.644***	omitted	omitted
EBA*MFN	**-0.165***	**-0.123***	**0.937***	**0.869**	omitted	omitted
Island		0.190***		0.377***		0.5991
Landlocked		-0.768***		-0.346***		0.795*
Sharedborder		2.319		0.885***		7.450***
No. of observations	119818	119818	15951	15951	305	305

Metals etc.		Machinery		Clothing		Agricultural	
0.312***	-0.078*	0.521***	0.198***	0.918***	-0.165**	0.178***	0.063
0.510***	0.475***	0.456***	0.461***	1.106***	0.973***	0.164***	0.163***
-0.731***	0.269***	-0.913	0.195*	2.424***	5.487***	0.246***	0.335***
-1.808***	-1.686***	-1.360***	-1.249***	0.314**	0.027	-0.866	-0.800***
0.105***	0.109**	-0.369***	-0.420***	omitted	omitted	0.673***	0.638***
0.884*	**0.870***	-0.094	-0.040	omitted	omitted	-1.095***	-1.097***
	0.022		0.661***		-0.673***		0.161
	-1.009***		-0.762***		-0.989***		-0.475***
	2.218***		1.893***		9.501		0.481***

30873	30873	10052	10052	10360	10360	19471	19471

5.2 Table of results with lagged variables

Ln(imports)	Complete		Textiles		Sugar	
Ln(GDP/POP)	0.202***	-0.188***	-0.234***	-0.359***	2.385***	0.497
Ln(POP)	0.396***	0.354***	0.548***	0.537***	0.541***	0.375***
Ln(distance)	0.140***	1.225***	0.509***	0.554***	1.078***	5.477***
EBA_{t-1}	-1.084***	-1.067***	-1.705***	-1.694***	-0.321	-1.483**
$MFNzero_{t-1}$	-0.038	-0.075**	-1.703***	-1.720***	omitted	omitted
$EBA*MFN_{t-1}$	**-0.400***	**-0.369***	**1.194***	**1.107**	**omitted**	**omitted**
Island		-0.048		0.239**		-0.507
Landlocked		-0.744***		-0.282***		0.049
Sharedborder		2.431***		0.355		9.137***
No. of observations	84695	84695	11240	11240	218	218

Metals etc.		Machinery		Clothing		Agricultural	
0.140***	-0.122**	0.478***	0.129**	1.098***	-0.286***	0.199***	0.104
0.546***	0.518***	0.478***	0.467***	1.062***	0.836***	0.134***	0.129***
-0.811***	-0.002	-0.002	0.531***	2.549***	7.280***	0.290***	0.508***
-1.790***	-1.602***	-1.471***	-1.372***	0.721***	-0.039	-0.554***	-0.497***
0.135**	0.145**	-0.411***	-0.470***	omitted	omitted	0.995	0.968***
1.172*	**1.124***	**-0.174**	**-0.107**	**omitted**	**omitted**	**-1.467***	**-1.482***
	-0.149		0.603***		-1.165***		-0.019
	-1.066***		-0.713***		-0.909***		-0.387***
	1.511***		2.090***		11.384***		0.577***
20795	20795	7076	7076	7665	7665	14579	14579

The analysis shows certain surprising outcomes. The EBA variable is consistently negative and significant, indicating that the Least Developed Countries export less, even when controlling for factors like GDP and population size. The interaction variable is, however, most interesting, since it shows whether LCD's do export more relative to their 'normal' exports. This variable is more volatile between subgroups, but the coefficient in the complete dataset is negative and significant, indicating that the EBA arrangement has some positive effect on the exports of its beneficiaries.

5.3 General result

While from the analysis it seems that the EBA arrangement does have a positive effect on the exports of LDC's, the effects from the normal and lagged analysis differ significantly, which makes it difficult to estimate the precise size of the benefits. In the following section, the results will be further discussed.

5.3.1 Omitted variables

The criteria to be acknowledged as an LDC are threefold; a country must be below a certain threshold for indicators of income, economic vulnerability and human assets. The indicator for the income of a country is GNI per capita. In the analysis this is accounted for with the control variable of GDP per capita. There are a great number of indicators for the criterion of economic vulnerability, some of which are accounted for. The size and location subindex are reflected by the population and distance variables. Also, it is not unreasonable to assume that being an island or being landlocked contribute to being economically vulnerable (Guillaumont, 2010; MacKellar Wörgötter & Wörz, 2000). At least the notion that being landlocked is a detriment to trade seems to hold true; the coefficient is negative across all sectors. It is, however, likely that the economic vulnerability criterion is insufficiently reflected in the analysis. If economic vulnerability in turn has an effect on trade flows, there can be bias in the results. The Human Assets Index is build up of indicators for both health and education. Neither factors are included in the analysis, so these could lead to bias in the result if they have an effect on exports.

5.3.2 Methodological considerations regarding the gravity model

The analysis is done using a log-linearized model of the gravity model. As Santos Silva and Tenreyro (2006) note, in this model there is no clear way to deal with observations where the dependent variable is zero. In this paper the most straightforward method was used and those observations were treated as missing values. While there are more advanced ways of to account for these observations, there are serious econometric issues associated with those methods, and simply omitting the zero values leads often to acceptable results (Linders & De Groot, 2006). It does, however, lead to biased results 'insofar as the as the omitted observations contain information about why low levels of trade are observed.' (Eichengreen & Irwin, 1998). This can be relevant if a policy does not only affect the total value of goods traded, but also has an (anti-)diversifying effect, i.e. it also affects the amount of different types of goods traded. If, for example, a trade policy does not increase the total value of trade, but instead distributes the trade over a greater number of HS4-lines, it will increase the amount of observations used in the analysis, but the imports per observation will be lower. *Ceteris paribus*, the coefficient of the policy variable will be negative, while the imports did not decrease, and diversification is generally deemed desirable. The precise effect of the EBA and GSP arrangement on the diversification of exports of beneficiary countries is not clear. Gamberoni (2007) found that while the GSP had a positive effect on the export diversification, the effect of the EBA was insignificant. However, Persson and Wilhelmsson (2015) found that while both regimes had a positive effect, the effect of the EBA was larger than that of the GSP. In both cases the results of this paper suffer from bias, but it is not clear in what direction. If the GSP has a larger positive effect on the diversification of exports than the EBA, it means that the imports from GSP countries are underestimated and there is upward bias. If the EBA gives more incentives to diversify, there will be downward bias.

5.4 Differences between sectors

While the overall effect seems to be positive, there are large differences between subsectors. In the sugar and clothing sectors there are no product with a zero MFN tariff, which makes the results difficult to interpret. But between these two sectors,

there is a large difference between the EBA coefficients. In the other sectors not only the size, but also the signs of the interaction variable differ. The reason for this must be sought in differences in specialization.

5.4.1 Agricultural products

The EBA arrangement seems to be most effective in stimulating the exports of agricultural products. The coefficient of the interaction variable is smallest (largest in the absolute value) in both analyses. This intuitively makes sense, since this can be an area where the Least Developed Countries have a comparative advantage. Furthermore, the European market for agricultural products is still heavily protected. A complete abolishment of all tariffs can therefore grant a lot of benefits, both relative to other countries and absolute.

5.4.2 Textiles and minerals, metals and chemicals

For these groups, the results seem to be anomalous; the interaction variable is positive, meaning that EBA recipients exports relatively less goods that fall under the EBA arrangement, compared to GSP recipients. One of the possible explanations for this can be differences in specialization; It could be that GSP recipients export more goods that the EU is protecting more heavily. Besides, the tariffs for these goods are relatively low. The maximum tariff for these goods is twelve percent, while tariffs on for instance agricultural products can be as high as 100 percent.

5.4.3 Machinery

The effect of the EBA arrangement on the export of machinery is negligible. Whether or not controlled for geographical factors, the interaction variable is insignificant. Because the tariffs in this subgroup are rather small[11], this result is not surprising. When one takes into consideration the 4 percent benchmark found by Manchin (2006), this result seems to fit the pattern.

---

[11] The average tariff is 1.9 percent for non-electrical machinery, 2.8 percent for electrical machinery and 4.3 percent for transport equipment

5.4.4 Clothing and sugar

Both these types of goods are protected to the extent that all goods have a non-zero MFN tariff. This makes it impossible to control for differences between goods; It is only possible to control for differences between countries, but these differences can have other causes than different trade regimes, which means it is difficult to properly discuss the result. For the sugar sector, this problem is complemented by the fact that the amount of observations is low. For the clothing sector, the EBA variable seems larger than that of the other subgroups, being larger than zero or insignificantly different from zero. This could reflect that fact that the two largest exporters under the EBA arrangement, Bangladesh and Cambodia, are heavily specialized in clothing. Combined with the relatively high MFN tariffs that are still in place for clothing products, this can indicate that the EBA arrangement can have substantial benefit in this sector.

6. Conclusions

All in all, the results indicate that the EBA arrangement has an overall positive effect on the exports of the Least Developed Countries. However, due to the doubtful robustness of the results and the methodological issues associated with the gravity model, it is difficult to precisely determine the beneficial effect of the arrangement. Furthermore, there are large differences between sectors.

The effect of the arrangement is largest in the market for agricultural goods, where less developed countries have a comparative advantage and the MFN rates and correspondingly the preferential rates are high. Less effective is the EBA arrangement in markets where the MFN rates are already low, like the markets for machinery.

A large drawback of the method used is the inability to take into account specialization among trading partners. This can introduce bias, especially when assessing subgroups. Furthermore, there is no 'ideal' way to deal with the large amount of zero-values in the dataset and the (anti-)diversifying effect that a trade regime can have. To circumvent these issues, more advanced econometric measures have to be used.

7. References

African Growth and Opportunity Act 2000 (United States). Retrieved July 6, 2018 from https://agoa.info/images/documents/2/AGOA_legal_text.pdf

Aiello, F. & Cardamone, P. (2011). Analysing the Impact of Everything But Arms Initiative Using a Gravity Model. In De Benedictis, L & Salvatici, L. (Eds.), *The Trade Impact of European Union Preferential Policies* (pp. 127-150). doi: https://doi-org.eur.idm.oclc.org/10.1007/978-3-642-16564-1

Bartels, L. (2003). The WTO Enabling Clause and Positive Conditionality in the European Community's GSP Program. *Journal of International Economic Law, Volume 6*(2), pp. 507–532.

Carbone, M. (2007). EBA, EU trade policy and the ACP. In Faber, G. & Orbie, J. (Eds.), *European Union Trade Politics and Development: 'Everything But Arms' Unravelled* (pp. 43-56). Retrieved July 6, 2018 from https://books.google.nl/books?hl=nl&lr=&id=pe99AgAAQBAJ&oi=fnd&pg=PA43&dq=Carbone,+M.+(2007)+%E2%80%98EBA,+EU+Trade+Policy+and+the+ACP%E2%80%99.&ots=fWyCiVkRSs&sig=fmMcBveXLNTBH-AaunUosutybOM#v=onepage&q&f=false

Cernat, L., Laird, S., Monge-Roffarello, L. & Turrini, A. (2003). *The EU's everything but arms initiative and the least-developed countries*. Retrieved July 6, 2018 from http://hdl.handle.net/10419/52810

Eichengreen, B. & Irwin, D. A. (1998). The Role of History in Bilateral Trade Flows. In Frankel, A. (Ed.). *The Regionalization of the World Economy* (pp. 33-62). Retrieved July 6, 2018 from http://www.nber.org/chapters/c7819

European Commission (2018a). *European development policy*. Retrieved July 6, 2018 from https://ec.europa.eu/europeaid/policies/european-development-policy_en

European Commission (2018b). *EU remains the world's leading donor of development assistance: €75.7 billion in 2017*. Retrieved July 6, 2018 from https://ec.europa.eu/europeaid/news-and-events/eu-remains-worlds-leading-donor-development-assistance-eu757-billion-2017_en

European Commission (2018c). *REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL; Report on the Generalised Scheme of Preferences covering the period 2016-2017*. Retrieved July 6, 2018 from http://trade.ec.europa.eu/doclib/docs/2018/january/tradoc_156536.pdf

Faber, G. & Orbie, J. (2009). Everything But Arms: Much More than Appears at First Sight. *Journal of Common Market Studies, Volume 47*(4), pp. 767-787.

Gamberoni, E. (2007). *Do unilateral trade preferences help export diversification? An investigation of the impact of European unilateral trade preferences on the extensive and intensive margin of trade*. HEI Working Paper 17/2007. Retrieved July 6, 2018 from http://hdl.handle.net/10419/77408

Gradeva, K. & Martínez-Zarzoso, I.(2015). Are Trade Preferences more Effective than Aid in Supporting Exports? Evidence from the 'Everything But Arms' Preference Scheme. *The World Economy, Volume 39*(8), pp. 1146-1171. doi: https://doi-org.eur.idm.oclc.org/10.1111/twec.12289

Guillaumont, P. (2010). Assessing the Economic Vulnerability of Small Island Developing States and the Least Developed Countries. *The Journal of Development Studies, Volume 46*(5), pp. 828-854. doi: https://doi-org.eur.idm.oclc.org/10.1080/00220381003623814

Herz, B & Wagner, M. (2011). The Dark Side of the Generalized System of Preferences. *Review of International Economics, Volume 19*(4), pp. 763-775. doi: https://doi-org.eur.idm.oclc.org/10.1111/j.1467-9396.2011.00980.x

Linders, G.J. & De Groot, H. L. F. (2006). *Estimation of the Gravity Equation in the Presence of Zero Flows*. Tinbergen Institute Discussion Paper No. 06-072/3. Retrieved July 6, 2018 from https://papers-ssrn-com.eur.idm.oclc.org/sol3/papers.cfm?abstract_id=924160

Krugman, P. (1997). What Should Trade Negotiators Negotiate About? *Journal of Economic Literature, Volume 35*(1), pp.113-120.

Mackellar, L., Wörgotter, A. & Wörz, J. (2000). *Economic Development Problems of Landlocked Countries*. Transition Economics Series 14. Retrieved July 6, 2018 from http://irihs.ihs.ac.at/1230/

Manchin, M (2006). Preference Utilisation and Tariff Reduction in EU Imports from ACP Countries. *The World Economy, Volume 29*(9), pp. 1243-1266. doi: https://doi-org.eur.idm.oclc.org/10.1111/j.1467-9701.2006.00838.x

Moyo, D. (2009). Let's trade. In *Dead Aid* (pp. 179-195). Londen, UK: Allen Lane Books

Özden, Ç. & Reinhardt, E. (2005). The perversity of preferences: GSP and developing country trade policies, 1976–2000. *Journal of Development Economics, Volume 78*(1), pp. 1-21. doi: https://doi.org/10.1016/j.jdeveco.2004.08.007

Persson, M. & Wilhelmsson, F. (2015). EU Trade Preferences and Export Diversification. *The World Economy, Volume 39*(1), pp. 16-53. doi: https://doi-org.eur.idm.oclc.org/10.1111/twec.12354

Pishabar, E. & Huchet-Bourdon, M. (2008). European Union's preferential trade agreements in agricultural sector: a gravity approach. *Journal of International Agricultural Trade and Development, Volume 5*(1), pp. 108-127.

Regulation No 978/2012 of the European Parliament and of the Council of 25 October 2012 applying a scheme of generalised tariff preferences and repealing Council Regulation No 732/2008 (European Union)

Ruggiero. R. (1996). *Address to the fourth Sylvia Ostry Lecture in Ottawa, Canada*. Retrieved July 6, 2018 from https://www.wto.org/english/news_e/sprr_e/ottawa_e.htm

Santos Silva, J. M. C. & Tenreyro, S. (2006). The Log of Gravity. *The Review of Economics and Statistics, volume 88*(4), pp. 641-658. doi: https://doi-org.eur.idm.oclc.org/10.1162/rest.88.4.641

Stevens, C. & Kennan, J. (2001). *The Impact of the EU's 'Everything but Arms' Proposal: A Report to Oxfam*. Retrieved July 6, 2018 from oxfamilibrary.openrepository.com/oxfam/bitstream/10546/112440/1/impact-EU's-everything-but-arms-proposal-010101-en.pdf

Trueblood, M. & Somwaru A. (2002). *Trade Liberalization and the Least Developed Countries: Modeling the EU's Everything But Arms Initiative*. Paper presented at the 5th Conference on Global Economic Analysis, Taipei, Taiwan. Retrieved July 6, 2018 from https://s3.amazonaws.com/academia.edu.documents/38917964/1078.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1530893308&Signature=Td3z%2BhEFnFFdIEaW0hhvCjHVfgc%3D&response-content-disposition=inline%3B%20filename%3DTrade_Liberalization_and_the_Least_Devel.pdf

United Nations Economic Analysis & Policy Division (2018). *LDC Identification Criteria & Indicators*. Retrieved July 6, 2018 from https://www-un-org.eur.idm.oclc.org/development/desa/dpad/least-developed-country-category/ldc-criteria.html

World Bank (1987). *World Development Report 1987*. Retrieved July 6, 2018 from https://openknowledge-worldbank-org.eur.idm.oclc.org/bitstream/handle/10986/5970/WDR%201987%20-%20English.pdf?sequence=1

Yu, W. & Jensen, T.V. (2005). Tariff Preferences, WTO Negotiations and the LDCs: The Case of the 'Everything But Arms' Initiative. *The World Economy, Volume 28*(3), pp. 375-405. doi: https://doi-org.eur.idm.oclc.org/10.1111/j.1467-9701.2005.00682.x

8. Appendices

Beneficiaries of the Everything but Arms arrangement
Afghanistan
Angola
Bangladesh
Benin
Bhutan
Burkina Faso
Burundi
Cambodia
Central African Republic
Chad
Comoros
Democratic Republic of Congo
Djibouti
Eritrea
Ethiopia
Gambia
Guinea
Guinea-Bissau
Haiti
Kiribati
Laos
Lesotho
Liberia
Madagascar
Malawi
Mali
Mauritania

Mozambique
Myanmar
Nepal
Niger
Rwanda
Sao Tome and Principe
Senegal
Sierra Leone
Solomon Islands
Somalia
South Sudan
Sudan
Tanzania
Timor-Leste
Togo
Tuvalu
Uganda
Vanuatu
Yemen
Zambia

Appendix B

Beneficiaries of the standard Generalized System of Preferences
Cook Islands*
Cote d'Ivoire
Ghana
India
Indonesia
Kenya

Micronesia (Federate States of)
Nauru
Nigeria
Niue*
Republic of Congo
Swaziland
Tajikistan
Tonga
Ukraine
Uzbekistan
Vietnam