

Do trade preferential agreements enhance the exports of developing countries? Evidence from the EU GSP

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Main Issues

- ▶ Provide an empirical evidence of the impact of the EU Generalised System of Preferences, the evaluation of which is based on the estimation of a gravity model
- ▶ We use an explicit measure of the preferential treatment granted by the EU to the exports of DCs involved in a trade agreement (GSP, Cotonou Agreement, European Mediterranean Agreement) instead of dummies. Thus we exploit the information regarding tariffs and their wide differences across products
- ▶ We focus on agricultural sector using disaggregated data: trade preferences granted to DCs are important for agricultural exports
- ▶ We apply a Zero Inflated Poisson (ZIP) to take into account problems related to the presence of zero trade flows

The GSP Scheme

- ▶ The Generalised System of Preferences is a set of EU unilateral trade concessions in terms of tariff reductions exclusively granted to developing countries
- ▶ It is a multiregional PTA covering numerous criteria of eligibility and a certain differentiation among DCs in the application of preferential treatment
- ▶ The GSP has three schemes: standard scheme, GSP DRUG for certain countries meeting sustainable development and good governance criteria, EBA for LDCs

Steps of the GSP scheme

- ▶ The first GSP was adopted by the EU in 1971 for a period of ten years and has been renewed periodically
- ▶ On 1 January 1995 a new 10-year cycle EU GSP scheme entered in force
- ▶ On June 2001, the EC adopted a proposal for revision of the GSP scheme for the 2002-2004 period
- ▶ On 23 June 2005, the EU member states agreed on a new GSP scheme which came into force on 1 January 2006
- ▶ The current operating rules of GSP were established by regulation 732/2008 which will apply until 31st December 2011. The new GSP has not changed the structure or the substance of the old scheme and has renewed the ordinary GSP, the GSP-Drug and the EBA initiatives for a period of three years

Literature on GSP

- ▶ The literature on the GSP has analyzed the:
 - structure of the scheme
 - its utilization and
 - its effectiveness
- ▶ The Studies do not converge towards a common result with regards the effectiveness of the scheme. Generally most of them suggest that the EU GSP has been ineffective
- ▶ However, Sapir (1981), Oguledo and MacPhee (1994), Nilsson (2002), Verdeja, (2006) and Agostino et al. (2008) show that the GSP scheme has a positive effect, although its impact is smaller than that of other preferential schemes

Literature: results

- ▶ Verdeja (2006) finds that the GSP positively affected the exports of LDCs, although its impact was lower than that revealed by the trade preferences granted by the EU under the Cotonou agreement. Similar results are provided by Nilsson (2002)
- ▶ Cardamone (2009) restricts the evaluation to four products included in the fruit and vegetable sector and she shows that the GSP has a positive impact in increasing exports of apples and mandarins to the EU, while ACPs preferences are successful in enhancing EU imports of fresh grapes and mandarins
- ▶ Agostino et al. (2008) find a positive impact of the EU GSP on the total exports of DCs, although the significance of the estimated parameter is very low. Moreover, when using 2-digit agricultural data, they reveal that the ordinary GSP only has a positive effect in the meat sector and that its impact is negative and significant in the livestock and sugar sectors and not significant in other agricultural sectors. Finally, they find that, for LDCs, only the GSP has a positive impact in the fruit and vegetable sector
- ▶ Persson and Wilhelmsson (2007) find that ACPs preferences had the most significant effects while eligible countries for GSP did not gain any advantage from the scheme. The same result can be found in Cipollina and Salavatici (2007). As far as the EU GSP-Drug is concerned, Persson and Wilhelmsson (2007) find a negative impact for this scheme on the exports of beneficiaries
- ▶ Finally, considering LDCs, Persson (2005) finds that trade preferences enjoyed by LDCs had a negative influence on their exports. Further evidence of the negative impact of the EBA preferences is provided by Pishbahar and Huchet-Bourdon (2009)

Our contribution

- ▶ As measure of the preferential treatment we use the ratio between the Preferential Margin and the MFN duty. This measure allows us to take into account the size of the actual tariff preference for any trade flow at product level
- ▶ We focus on agricultural exports using disaggregated data at HS6-digit level. To be more precise, we analyse the export flows towards EU markets of 763 products related to fourteen groups of agricultural products over the period 2001-2004. The sample of exporters comprises 169 countries
- ▶ We employ a ZIP in order to overcome the problems posed by zero-trade flows

Descriptive analysis (1 / 2)

- ▶ EU agricultural imports from DCs and LDCs increased over time even if not uniformly
- ▶ On the one hand GSP agricultural exports became less concentrated between 2001 and 2004, on the other hand, the shares of each sector appear quite stable, except for animal or vegetables fats and oils whose quota increases
- ▶ The concentration is higher when considering GSP-Drug : edible fruits and coffee, tea, mate and spices make up more than 60% of total EU agricultural imports from GSP-Drug countries
- ▶ Finally, moving to EU agro-food imports from EBA countries, we find different and conflicting results. Indeed, fisheries is the most important sector for EBA countries, although the market share shows a regular marked declining trend

Descriptive analysis (2/2)

- ▶ There are relevant differences between the ordinary GSP and the GSP-Drug. The preferential margin is quite stable in 2004 and 2006 (the major changes occurred in fisheries, vegetables, preparations of meat)
- ▶ The agricultural sectors with the highest margins of preference under the ordinary GSP regime were tobacco (about 8.16% in 2006), preparations of meat (5.22% in 2006), preparations of fruits and vegetables (4.98% in 2006) and fisheries (3.99% in 2006). The average margin was modest in the chapters of livestock, meat, dairy products, other animal products, cereals, products of the milling industry, oilseeds, sugar, and residues and waste from the food industry
- ▶ So, the level of the preferential tariff granted by the GSP did not change much as a result of the introduction of the 2006 GSP scheme (on average, less than 1% point between 2004 and 2006), nor did all chapters benefit from the reduction

Tariffs and Preferential Margins under GSP

Chapters (HS2)	MFN 2006	MFN 2004	GSP 2006	GSP 2004	GSP+ 2006	GSP+ 2004	MP GSP06	MP GSP04	MP GSP+06	MP GSP+04
<i>Live Animals</i>	40.49	40.49	40.17	40.17	40.04	40.04	0.33	0.33	0.45	0.45
<i>Meat and edible meat offal</i>	43.97	43.71	43.85	43.45	43.47	43.31	0.12	0.25	0.50	0.40
<i>Fisheries</i>	10.51	10.74	6.51	8.73	0.03	0.03	4.00	2.02	10.47	10.71
<i>Dairy produce</i>	52.70	50.68	52.40	50.23	51.92	50.12	0.30	0.45	0.79	0.56
<i>Products of animal origin</i>	0.24	0.24	0.08	0.08	0.00	0.00	0.17	0.17	0.24	0.24
<i>Live trees and other plants</i>	6.40	6.79	3.33	3.56	0.00	0.00	3.08	3.23	6.40	6.79
<i>Edible vegetables, R&T</i>	41.89	39.92	38.79	37.67	37.76	36.15	3.10	2.25	4.13	3.77
<i>Edible fruits & nuts</i>	20.26	20.64	18.54	19.08	17.38	17.71	1.72	1.56	2.88	2.94
<i>Coffee, tea, mate & spices</i>	3.05	3.05	1.09	1.09	0.00	0.12	1.96	1.96	3.05	2.93
<i>Cereals</i>	18.86	36.60	18.85	36.60	18.84	36.58	0.01	0.00	0.02	0.02
<i>Products of the milling indus.</i>	22.55	22.51	22.29	22.22	21.89	21.78	0.26	0.29	0.66	0.73
<i>Oil seeds & oleaginous fruits</i>	2.38	2.35	1.66	1.31	0.87	0.86	0.72	1.04	1.51	1.49
<i>Lacs, gums, res. & other v.</i>	7.93	7.89	5.11	5.24	0.00	0.00	2.82	2.65	7.93	7.89
<i>Vegetable products n.e.s.</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Animal or veg. fats & oils</i>	8.54	8.60	5.61	5.73	2.78	2.86	2.94	2.87	5.76	5.75
<i>Preparations of meat</i>	18.03	17.94	12.80	13.75	4.21	4.34	5.23	4.19	13.82	13.60
<i>Sugars</i>	20.57	21.74	19.94	21.18	18.78	20.19	0.63	0.56	1.80	1.55
<i>Cocoa & cocoa preparations</i>	24.16	23.96	22.99	22.92	21.27	21.37	1.17	1.05	2.89	2.59
<i>Preps. of cereals, flour, other</i>	29.45	30.86	26.34	27.67	23.45	24.35	3.11	3.19	6.00	6.51
<i>Preps. of veg. fruits, nuts</i>	23.16	22.55	18.19	18.18	4.25	3.98	4.98	4.37	18.92	18.57
<i>Miscellaneous edible prep.</i>	14.33	14.85	11.03	11.46	5.97	6.28	3.29	3.39	8.36	8.57
<i>Beverages, spirits & vinegar</i>	13.34	12.64	11.98	11.16	7.74	7.42	1.36	1.49	5.60	5.23
<i>Residues from food ind.</i>	15.92	13.60	15.01	12.76	14.71	12.51	0.91	0.84	1.21	1.09
<i>Tobacco & tobacco products</i>	18.31	18.31	10.15	10.15	0.00	0.00	8.16	8.16	18.31	18.31

The Gravity Model

$$\begin{aligned}\ln(M_{ijl}^t) = & \omega + \beta_1 \ln(GDP_i^t) + \beta_2 \ln(GDP_j^t) + \beta_3 \ln(POP_i^t) + \beta_4 \ln(POP_j^t) + \\ & + \beta_5 \ln(DIST_{ij}) + \beta_6 Colony_{ij} + \beta_7 Common_lang_{ij} + \beta_8 Border_{ij} + \\ & + \beta_9 \ln(PMGSP_{ijl}^t) + \beta_{10} \ln(PMGSPDRUG_{ijl}^t) + \beta_{11} \ln(PMEBA_{ijl}^t) + \beta_{12} \ln(PMACP_{ijl}^t) + \\ & + \beta_{13} \ln(PMMED_{ijl}^t) + u_{ijl}^t\end{aligned}$$

$$u_{ijl}^t = \alpha_i + \alpha_j + \alpha_l + \alpha_t + \varepsilon_{ijl}^t$$

Gravity equation

- ▶ In order to take into account countries' heterogeneity, we have decomposed the error term of equation in time-invariant importer and exporter-country fixed effects, commodity fixed effects, time fixed effects and finally there is an idiosyncratic error term. The fixed effects were meant to capture all unobserved factors that influence export flows, while the time variable allowed us to control for macro-economic factors that may have occurred over our sample period

Variables (1 / 2)

- ▶ M are the exports of products l from country j to country i at time t
- ▶ GDP represents the economic size of country i to country j at time t
- ▶ POP measures the population of the two countries at time t
- ▶ DIST is the distance between the locations measured from capital to capital
- ▶ COMMON_LANG is a dummy that takes value 1 if countries i and j speak the same language, and 0 if otherwise
- ▶ COLONY is a dummy that takes value 1 if colonial links exist (or have existed) between countries i and j , and 0 if otherwise
- ▶ BORDER is a binary variable assuming the value 1 if countries i and j share a common land border, and 0 if otherwise

Variables (2/2)

- ▶ PM GSP is the preferential margin for countries benefiting from the ordinary GSP
- ▶ PM GSP DRUG is the preferential margin for countries benefiting from GSP DRUG
- ▶ PM EBA is the preferential margin for countries benefiting from EBA special initiative
- ▶ PM ACP is the preferential margin for countries benefiting from the Cotonou Agreement
- ▶ PM MED is the preferential margin for countries benefiting from EUROMED agreement

Methods

- ▶ The issue of zero-trade flows has been widely addressed in the literature on gravity empirics (Martinez-Zarzoso et al., 2007; Martin and Pham, 2008; Santos Silva and Tenreyro, 2006)
- ▶ Santos Silva and Tenreyro (2006) contribute to the discussion as to which estimator provides the most reliable results by assessing the potential bias of elasticities in a log linearised regression. They show that the consistency of an OLS estimator depends on a restrictive assumption regarding the error terms and suggest that the gravity equation could be estimated in its multiplicative form by using the Pseudo Quasi Maximum Likelihood Method (PQML) based on a Poisson Model
- ▶ Moreover since the standard Poisson model is vulnerable to problems such as over-dispersion and excess zero flows, we have used other estimation techniques as in Burger, van Oort, and Linders (2009)

Preferential margin

- ▶ This measure allows us to take into account the size of the actual tariff preference for a particular product
- ▶ The HS6 average tariffs faced by the beneficiaries of the GSP have been computed using a simple average of the AVEs calculated at the NC10 level. When a line was excluded from preferences, the MFN AVE has been used for the computation. When the tariff evolved during the year (due to seasonal changes, for example), a simple average over the year has been used

Preferential margin

- ▶ The overlapping of preferences has been solved by taking for a given trade flow the maximum margin of preference as that which has been used by the beneficiary country. For instance, if a country is eligible for preferential treatment under both the GSP and the Cotonou agreement, and the preferential margins are, respectively, 3% and 5%, we assume that country will export under the Cotonou agreement and set the GSP preferences equal zero

Preferential Margin

$$\text{PreferentialMargin}_{ijt}^l = \frac{\text{MFN}_{ijt}^l - \text{PREF_TARIFF}_{ijt}^l}{\text{MFN}_{ijt}^l}$$

or

$$PM_{ijt}^l = \max(GSP, GSPDRUG, EBA, ACP, MED)$$

All products: Results

Table 8 EU-15 Agricultural Imports and the impact of the EU GSP scheme. Estimates of a gravity equation when using the LSDV and the ZIP methods (2001-2004).

	LSDV	ZIP	LSDV	ZIP
GDP IMPORTER	0.07 [0.444]	1.372** [0.476]	0.097 [0.365]	0.787* [0.337]
GDP EXPORTER	0.092 [0.061]	0.136* [0.078]	0.043 [0.051]	0.058 [0.066]
POP IMPORTER	-7.307** [1.937]	-2.914 [2.041]	-9.430** [1.591]	-3.656** [1.127]
POP EXPORTER	0.354 [0.668]	2.35 [1.765]	0.537 [0.567]	2.432* [0.992]
DISTANCE	-0.418** [0.026]	-0.323* [0.175]	-0.357** [0.021]	-0.219* [0.112]
BORDER	0.349** [0.042]	0.483** [0.137]	0.330** [0.035]	0.554** [0.102]
LANGUAGE	-0.052 [0.030]	0.028 [0.132]	-0.061* [0.026]	0.116 [0.121]
COLONY	0.086** [0.029]	0.112 [0.131]	0.062* [0.024]	0.151 [0.111]
GSP	0.108** [0.006]	0.265* [0.119]		
DRUG	0.050** [0.012]	0.062 [0.063]		
EBA	-0.025 [0.051]	0.239 [0.248]		
ACP	0.387** [0.045]	0.033 [0.254]		
MED	0.009 [0.009]	-0.011 [0.020]		
MAXPREF			1,510.215** [220.454]	-160.509 [1,960.601]
RESET TEST (p-value)	0.0010	0.6999	0.0050	0.5667
COUNTRY PAIRS & TIME FE	yes	yes	yes	yes
Observations	140,948	2,889,954	206,686	4,989,410
R-squared	0.094		0.092	

Standard errors in brackets **p<0.01, *p<0.05

Group of products: Results (1/2)

	LIVE ANIMAL	FISHERIES	LIVE TREES	FRUITS	LAC & GUMS	OILS & FATS	SUGAR
GSP	0.315*** [0.121]	4.326*** [1.425]	0.119 [0.000]	1.585*** [0.453]	0.42 [0.000]	1.984*** [0.740]	0.704 [0.000]
GSP DRUG	0.741*** [0.158]	-0.179 [0.199]	0.147 [0.000]	31.596 [34.520]	1.423 [0.000]	-0.603*** [0.198]	
EBA	0.002 [0.242]			0.512 [1.155]		0.604 [5.643]	1.225 [0.000]
ACP	12.740*** [3.113]			0.139 [0.352]		7.247*** [2.290]	2.848 [0.000]
MED	0.128 [0.080]	-0.003 [0.080]	-0.226 [0.000]	-0.006 [0.053]	-0.003 [0.000]	0.044 [0.125]	

Robust standard errors in brackets * significant at 10%; ** significant at 5%; *** significant at 1%

Group of products: Results (2/2)

	DAIRY PODUCTS	TROPICAL FRUITS	VEGETABLES	SPIRIT & VINEGAR	RESIDUES FROM F.I.	TOBACCO
GSP	0.318*** [0.108]	0.166 [0.122]	0.092 [0.000]	0.424 [0.460]	-0.083 [0.000]	7.819 [0.000]
GSP DRUG	0.595 [1.150]		-0.116 [0.000]			
EBA	-0.21 [1.053]	0.403 [0.369]	0.432 [0.000]		0.62 [0.000]	
ACP	3.668 [4.509]	3.156*** [0.940]	0.949 [0.000]	6.560*** [0.164]	0.784 [0.000]	
MED	-0.001 [0.059]	0.045 [0.034]	1.023 [0.000]			

Robust standard errors in brackets * significant at 10%; ** significant at 5%; *** significant at 1%

Some final remarks

- ▶ The main findings of our analysis may be summarised as follows: there is evidence that the EU GSP has a positive and significant impact on the agricultural exports of preferred countries. This evidence is quite robust, being confirmed in all the regressions we estimated by pooling data of agricultural exports and using very different techniques
- ▶ The impact of GSP-Drug and ACP is positive, while the findings on the role of EBA and EURO-Med is puzzling
- ▶ The evidence at sectoral level is much more mixed: the impact of the ordinary GSP is positive for many agricultural sectors suggesting that, for a large proportion of DCs, the EU trade preferences actually help beneficiary countries to increase their exports

Some policy conclusion

- ▶ The Commission is reflecting on the development of EU's trade policy in particular on how modify and how maintain it as tool of development
- ▶ Perhaps a revision of protection, the reduction of the costs of meeting eligibility criteria and the simplification of rules of origins could help DCs and LDCs to be able to reap the full potential benefits from this preferential treatment
- ▶ Non Tariff Barriers may be considered