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2006

Link to publication

Citation for published version (APA):
Persson, M., & Wilhelmsson, F. (2006). *Assessing the Effects of EU Trade Preferences for Developing Countries*. (Working Papers, Department of Economics, Lund University; No. 4). Department of Economics, Lund University. http://swopec.hhs.se/lunewp/abs/lunewp2006_004.htm

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Assessing the Effects of EU Trade Preferences for Developing Countries

Maria Persson and Fredrik Wilhelmsson*

June 26, 2006

Abstract

Since the 1960s, the EU has offered trade preferences to developing countries in a complex set of systems. Broadly, these systems can be divided into preferences for African, Caribbean and Pacific (ACP) countries, Mediterranean preferences and the Generalised System of Preferences (GSP). A detailed database over these trade preferences is constructed and used to assess whether they have had an effect on developing countries' exports and whether the systems have had different impacts on exports. To this end, an estimation is made of the successive EU enlargements' impact on exports from developing countries. Further a gravity model, taking into account the evolution of developing countries' exports, is estimated on a large sample of EU importers and developing country exporters over the period 1960-2002. The main findings are that certain preference systems have had large effects – the largest are found for the ACP countries, where the preferences increase exports by about 30 %, followed by Mediterranean countries – and that countries joining the EU, *ceteris paribus*, import less from developing countries as they become members.

JEL classification: F13, C23

Keywords: EU trade preferences; Trade; Developing countries; Gravity model

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1 Introduction

The European Union has a long history of granting special trade preferences to developing countries, dating back to the Treaty of Rome in 1957 which gave colonies an associated status.[1] Over time, new systems for preferences have been introduced into an increasingly complex pattern and, today, few developing countries lack preferential access of some form to the EU market.

Among possible beneficial effects of trade preferences are increased export volumes, export diversification and the possibility for exporters to charge higher prices. However, there is a widespread view that traditional non-reciprocal preferences have not been able to achieve at least the former two of these goals—a view shared for instance by the European Commission (1996) concerning preferences granted within the Lomé framework. In this paper, we attempt to see whether this gloomy view of the effects of trade preferences is correct.

More specifically, our goal is to answer two questions: Firstly, have trade preferences affected the value of developing countries' exports to the EU? Secondly, if they have, are there differences between preference systems so that certain groups of developing countries have benefited more than others from EU trade policy? To identify the effects of preferences it is essential to control for the EU enlargements, since they may lead to both trade creation and trade diversion, the latter of which could include decreased exports from developing countries. Therefore, in addition to answering the two main questions, we will also get an estimate of how the effects of preferences have been influenced by the successive EU enlargements.

In order to analyse the trade preferences we construct a detailed database over changes in EU trade preferences. The data is gathered from EU legislations from

[1] For simplicity, this paper will consistently use the term EU even though the formally correct term would at times be EEC or EC. However, no confusion should arise.

the 1960s onwards. To estimate the impact of preferences on exports to the EU we apply a specification of the gravity model incorporating recent developments of the model. In the spirit of Bun and Klaassen (2004), the gravity model is augmented with a time trend for each country pair, controlling for the evolution of market access and exporting country openness over the studied period. This is a methodological novelty in the literature on trade preferences and a key to estimating the effects of preferences purged of other factors affecting the evolution of developing countries' exports.

Compared to previous studies this paper, besides using an improved method, covers a longer period and a wider range of preferences, using the above mentioned detailed database over EU trade preferences. The sample period is 1960–2002 and the effects of African, Caribbean and Pacific (ACP) preferences (within the Yaoundé and Lomé Conventions), preferences for Mediterranean countries, Generalised System of Preferences (GSP) and special regimes within the GSP are analysed. Deeper integration, for example Association Agreements with future EU members, is beyond the scope of this paper.

The paper is organised as follows. In section two the EU trade preference schemes relevant for developing countries are briefly described. Section three comments on the previous literature, while section four includes the empirical methodology and the data. The estimation results are analysed in section five and section six concludes the paper.

2 Trade preferences for developing countries

This section provides a short outline of the rather complex set of trade preferences that the EU has for developing countries. These can broadly be divided into ACP, Mediterranean and GSP preferences. Most of the systems cover much more than trade issues, such as aid and political cooperation, but we will focus strictly on the provisions that are directly trade-related, and particularly on the differences

between the systems. For a list of beneficiaries under each system at different times, see Appendix 1.

ACP Preferences

The origin of special trade preferences for African, Caribbean and Pacific (ACP) countries lies in the Treaty of Rome signed in 1957, which included provisions for the colonies of EU members to form a free trade area with the EU. Following the independence of most colonies in the beginning of the 1960s, these reciprocal preferences were brought over on a bilateral basis into the Yaoundé Conventions signed in 1963 and 1969. [2]

Following Britain's accession to the EU, the first Lomé Convention was signed in 1975. The Convention provided Yaoundé beneficiaries and mainly former non-Asian British colonies with duty free access on a non-reciprocal basis to the European market for most products except those covered by the Common Agricultural Policy, CAP (for these products certain preferences were available though). The subsequent Lomé Conventions of 1979, 1984, 1989 and 1995 retained this basic pattern. Since 2000, the ACP relations have been governed by the Cotonou agreement, where ACP countries will continue to receive, for a transitional period, non-reciprocal trade preferences under a WTO waiver. By 2008, these preferences should have been renegotiated into WTO compatible free trade agreements.[3]

Mediterranean preferences

Countries around the Mediterranean Sea have been involved in different trading arrangements with the EU since the late 1960s and early 1970s, when Tunisia,

[2] For an excellent account of the relations between EU and ACP countries, see Grilli (1993).
[3] Lomé preferences do *not* fulfil the obligations under which the so-called Enabling Clause allows developed countries to grant trade preferences to developing countries (see e.g. Abass 2004). This explains the need to renegotiate the preferences into WTO compatible FTAs.

Morocco, Israel and Egypt signed agreements with the EU. These were followed by Cooperation Agreements signed with the Maghreb (1976) and Mashreq (1977) countries.[4] The bilateral Cooperation Agreements included trade preferences that were non-reciprocal, and gave duty free access for most industrial and many agricultural goods. Since 1995, the Cooperation Agreements have been in the process of being replaced with a new generation of Euro-Mediterranean Association Agreements as part of the Barcelona process' attempts to create a Euro-Mediterranean Free Trade Area by 2010. These agreements include provisions for the transition to free trade.

Generalised System of Preferences

The EU has unilaterally granted almost all developing countries non-reciprocal trade preferences under the GSP since 1971. For long, these preferences took the form of duty free quotas and ceilings, but in 1995 all quantitative restrictions were removed, and preferences were instead granted in the form of tariff reductions, the size of which depended on the *sensitivity* of the product.

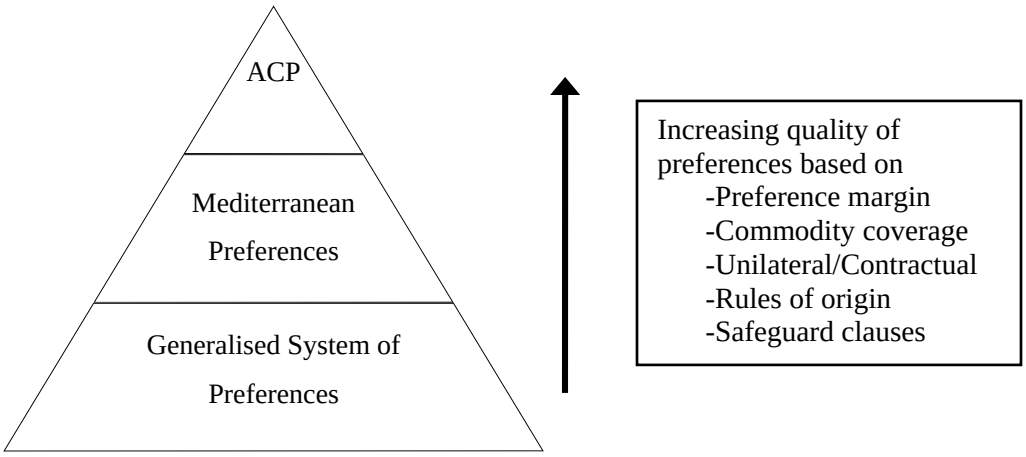
In addition to the general arrangements that cover all developing countries, certain groups of countries have also received better preferences within the GSP regime. The least developed countries (LDCs) have been granted more beneficial market access since 1977 and following the Everything But Arms (EBA) initiative in 2001, may now export all goods except arms and ammunition duty and quota free to the EU. For countries affected by the production and trafficking of illicit drugs, there has been a special arrangement with additional benefits (sometimes called the *drug regime*) since 1991.

[4] Since this paper restricts its attention to preferences available to countries that are not current or probable future members of the EU, the sample of Mediterranean countries contains Algeria, Morocco and Tunisia (Maghreb countries); Egypt, Jordan, Syria and Lebanon (Mashrek countries) and Israel. In practice, Algeria as a major oil exporter disappears from our sample.

Pyramid of privilege

It has been customary in the literature to talk of a "pyramid of privilege" to describe the relationship between the systems in terms of the trade benefits they offer, with ACP countries on top having the most wide-ranging benefits, and countries only able to use the GSP at the bottom, see figure 1.[5]

Figure 1 Pyramid of Privilege



It is worth saying a few words about the relationship between each of the systems. Starting from the top of the pyramid, the main difference regarding trade provisions between the Yaoundé and Lomé Conventions is the fact that the former preferences unlike the latter formally were reciprocal. However, in reality there were strong limitations to the reciprocity that was demanded by the Yaoundé countries (Young 1972). Therefore, even though these systems might have different effects due to, for instance, the time period when they were granted and the number of developing countries involved, it should be valid to compare the other preferential systems with the ACP system as a whole when it comes to the characteristics of the preferences.

[5] See e.g. Grilli (1993).

The trade preferences for Mediterranean countries were designed to be similar to the ACP preferences, but two important exceptions to this were textiles and clothing and agricultural products covered by the CAP, where ACP countries were given better access to the EU market.

Comparing the ACP preferences with those granted under the GSP, a first important difference is that both the preference margin and the commodity coverage are wider for ACP countries. Secondly, ACP preferences are contractual which makes market access more certain.[6] Thirdly, rules of origin are more generous, and allow e.g. full cumulation of origin within the ACP group (Inama 2002).[7] Lastly, Lomé preferences have less restrictive safeguard clauses (McQueen 1998).

Finally, looking at the differences between Mediterranean and GSP preferences one may note that Mediterranean countries, like ACP countries, have the advantage that their preferences are not only contractual, but also wider in scope and depth than those of the GSP.

So, to summarise, for at least a long time the ACP countries had the best access to the EU market of the developing countries in our sample, followed by Mediterranean countries, and only those countries that did not have any other preferential access could be expected to actually use their GSP preferences.[8] In the 1990s, the pyramid became harder to define since the Mediterranean countries started to sign free trade agreements with the EU, at the same time as preferences for especially the least developed countries improved within the GSP system. Hence, over time, as the trade provisions changed, the pyramid changed with them, and it is not so obvious today where different systems should be placed.

---

[6] Note though that preferences for LDCs under Everything But Arms are granted for an unlimited time period, which makes this difference smaller (see e.g. Brenton 2003).

[7] This may in fact be one of the major explanations why LDCs, that are eligible for duty free access under the EBA, continue using otherwise less beneficial Lomé style preferences under the Cotonou agreement (Brenton 2003).

[8] Note that certain preference systems overlap: see figure 2 below.

As an overall assessment of the quality of preferences under different systems, figure 1 continues to be valid though. Hence, we expect the effects to be biggest for ACP preferences, smaller for Mediterranean preferences and more modest for GSP preferences. Special sub regimes for LDCs and drug producing countries within the GSP system are expected to have a larger effect than having only general GSP preferences, but it is not entirely straightforward to make hypotheses about the size of these effects compared with those of the ACP and Mediterranean preferences.

3 Previous studies

Though quite a lot has been written about the EU's system of trade preferences for developing countries, there have not been many *ex post* studies.[9] One of the first in the gravity tradition is Sapir (1981) that uses yearly cross-sectional OLS regressions of a gravity model for 1967-1978 to estimate the effect of the GSP regime, where the reference is north-north trade. He finds a significant and positive effect for 1973 and 1974, corresponding to 48% gross trade creation. Oguledo and MacPhee (1994) use a similar method for 1976, and find a statistically significant effect for GSP, Mediterranean and Lomé preferences. The Lomé effect is larger than the Mediterranean effect, which in turn exceeds that of the GSP. Also using the gravity model, but estimated with OLS on three-year-averages for 1973-1992, Nilsson (2002) finds a significant and positive effect for most though not all years for GSP and Lomé, and that the effect of the latter is larger. The Mediterranean preferences are mostly insignificant.

None of these studies seem to have used an appropriate method, since cross-sectional regressions of the gravity model do not fully control for country

[9] There are more *ex ante* studies using various forms of partial or general equilibrium models to simulate the effects of preferences: see e.g. Baldwin and Murray (1977), Karsenty and Laird (1987), Ianchovichina *et al* (2002), Cernat *et al* (2003) and Yu and Jensen (2005).

heterogeneity, which leads to biased estimates due to omitted variables. The cross-section or pooled cross section is, in fact, a restricted version of the more general panel model and these restrictions should be tested before implementation (Mátyás 1997).

An example of a study that does incorporate the recent developments in the gravity literature is Péridy (2005) that estimates the effect of Mediterranean preferences for 1975-2001 in a sample of OECD and some developing countries, with various panel data methods and OLS for comparison. The Mediterranean dummy is highly significant in all cases, and with similar magnitudes in all specifications (except OLS). The corresponding gross trade creation is 20-27% of actual exports. Carrère (2004) studies the effects of regional trade agreements in Africa with a proper panel specification, and even though she does not explicitly discuss the effects of EU trade preferences to developing countries, she includes a dummy variable to control for ACP preferences. The results indicate that these preferences have had a significant and very large effect on ACP exports.[10] The sample used stretches from 1962 to 1996 and includes basically all available countries. Finally, concerning EU imports Soloaga and Winters (2001) find, using a gravity model, evidence of significant trade diversion occurring between 1980-82 and 1995-96, i.e. during a period when the EU experienced three rounds of enlargements.

4 Empirical methodology and data

Methodological considerations

In order to estimate the effect of EU preferences on exports from developing countries at the same time as controlling for EU enlargements, we use a

[10] Carrère's (2004) estimates indicate that the increase in ACP countries' exports resulting from the preferences is 129 % or 62 % depending on which variables are included in the regression.

formulation of the gravity model including time trends as in Bun and Klaassen (2004). The gravity model has frequently been used to estimate the effects of preferential trade agreements but without the inclusion of time trends.[11] The latter provide an instrument to control for country-pair specific factors that vary over time, for example transportation costs. Other factors that are not specific to country-pairs but rather to exporting countries, and that are controlled for by the time trends are variations in competitiveness and supply capacity.[12] Besides these factors, the time trends capture some of the variations in exporting countries' market access, which may vary among importing countries. Preferences are, indeed, intended to increase market access, but there are several other important factors besides tariffs that affect market access that should not be ascribed to the preferences. Mayer and Zignago (2005) find that the market access has changed significantly over time as a result of factors other than tariff liberalisation; hence failing to control for the evolution of exporting countries' market access might bias the results.

One drawback of including country-pair time trends is that they could pick up parts of the effects of preferential liberalisation if these effects are gradual. Since it has been argued that traditional fixed effects estimation only measures short-run effects of trade liberalisations (see Egger 2004), this should not be a serious problem. Some authors (for example, Carrère 2006) include real exchange rate to control for the evolution of competitiveness over time, but we have opted not to do so due to the large number of missing observations.

[11] See Greenaway and Milner (2002) for a discussion on the application of the gravity model to preferential trade agreements.

[12] A more flexible definition in the importer*time and exporter*time dimension including country by time fixed effects in line with Baltagi *et al* (2003) is possible, but as argued by Bun and Klaassen (2004), the present model is more flexible in the cross-section dimension.

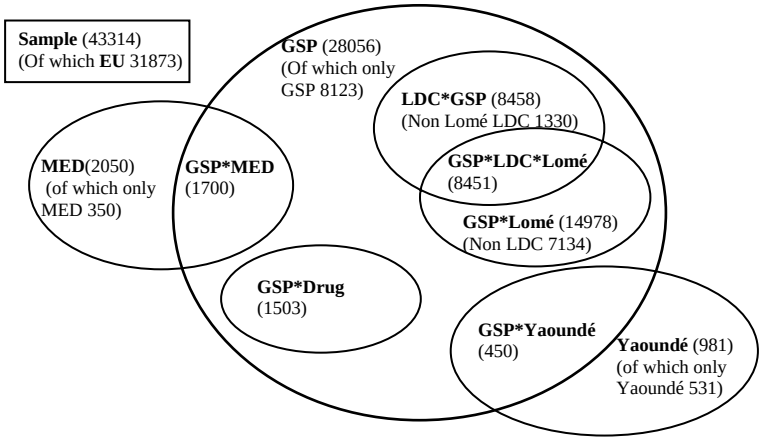
To avoid bias resulting from country heterogeneity we include country-pair fixed effects, as well as time effects to control for factors common to all country-pairs that vary over time. Thus, the estimated model is:

$$
\begin{aligned}
&\ln M_{ijt} = \alpha + \beta \mathbf{X}_{ijt} + \gamma_1 EU_{it} + \gamma_2 EU_{it} * GSP_{jt} + \gamma_3 EU_{it} * Yaounde_{jt} + \gamma_4 EU_{it} * MED_{jt} + \\
&\gamma_5 EU_{it} * GSP_{jt} * Yaounde_{jt} + \gamma_6 EU_{it} * GSP_{jt} * Lome_{jt} + \gamma_7 EU_{it} * GSP_{jt} * Lome_{jt} * LDC_{jt} + \\
&\gamma_8 EU_{it} * GSP_{jt} * LDC_{jt} + \gamma_9 EU_{it} * GSP_{jt} * Drug_{jt} + \gamma_{10} EU_{it} * GSP_{jt} * MED_{jt} + \mu_{ij} * t + u_{ijt} \\
&\mathrm{i} \in \mathrm{EU}_{15}
\end{aligned} \tag{1}
$$

where the error term u_{ijt} can be decomposed into country pair and time fixed effects and a normally distributed error term; $u_{ijt} = \mu_{ij} + \lambda_t + \varepsilon_{ijt}$. M_{ijt} is imports to European country *i* from exporting developing country *j* at time *t*, and the vector **X** includes the main explanatory variables real GDP and population of both countries in natural logarithms. $\mu_{ij} * t$ is a set of country-pair time trends; *EU* is a dummy variable equal to one if country *i* is a member of the EU at time *t* and *Yaoundé*, *Lomé*, *GSP*, *LDC*, *Drug* and *MED* are dummy variables taking the value one if country *j* is granted preferential access to the EU market under the given preference scheme (described above) at time *t*. Since some preference groups are overlapping, we also include all possible interactions of the main preference dummy variables in order to distinguish the impact of preferences on various country groups. In cases where, for all observations, all countries within a preference system also have preferences under the GSP, the relevant dummies are only included as interactions—this applies to Lomé, Drug and LDC countries. Finally, all preference dummies are interacted with the EU dummy to make sure that the preference effect is measured only when country *i* is actually a member of the EU at time *t*. This also implies that the residual reference group consists of countries that are not members of the EU and countries not receiving any preferences at time *t*.

Figure 2 illustrates the relationship between the dummy variables and the number of observations for each group. To simplify the picture the EU dummy variable has been omitted.

Figure 2. Preference systems in the regression sample



Notes: Number of observations in the regression sample in parentheses.

Data

The focus of this study is on exports to the EU from developing countries. Therefore, the sample of countries is limited to EU15 countries and developing countries over the period 1960–2002. The panel is unbalanced with 43 314 bilateral observations. The sample of 109 developing country exporters excludes countries with a deeper form of integration with the EU[13], formerly planned economies in Central and Eastern Europe and major oil exporting countries[14]. Trade in the formerly planned economies has gone through a major reorientation as a result of the transition to market economy and incorporation into the EU, so, in the absence of appropriate variables to correct for these changes in trade they are excluded to reduce the risk of omitted variable bias. The reason for excluding major oil exporters is that the structure of their trade is likely to differ from that of

[13] Countries that became members of the EU 2004, and Bulgaria, Romania, and Turkey.
[14] As defined in Direction of Trade Statistics (DOTS) by the IMF (2005)

other developing countries and that they are less influenced by EU trade policies. A comprehensive list of the included countries and preferences granted to them by the EU is found in Appendix 1.

When it comes to the actual data, the variables of main interest, i.e. the dummy variables for different preferences, come from a database over preferential trade agreements created for this paper. The database is based on the original legal texts in the *Official Journal of the European Communities*, and great care has been taken to ensure that each country is listed as a beneficiary under a certain arrangement only for those years that it has actually been able to use these arrangements (the starting year is hence e.g. not the date of the formal signing of the agreements but rather the actual entry into force of the agreement, or in some cases the premature entry into force of the trade provisions). Unlike what has been usual in the literature, the database also covers a wide range of preferences, including sub regimes within the GSP.

The data on the other gravity variables is extracted from the following sources: Nominal imports in US$ from DOTS (IMF 2002 and IMF 2005a); population, real GDP in constant 2000 US$ and US GDP-deflator from World Development Indicators (World Bank 2005).[15] The nominal imports have been converted to real imports using the GDP deflator of the US.

5 Results

This section will start with some preliminary observations regarding the data. The estimation results are then analysed, where after the aggregate effects for country groups are calculated and commented on.

[15] GDP data for Germany is taken from IMF (2005b).

Preference receiving countries' exports to the EU

Table 1 contains some basic data on exports to the EU from the main preference groups. Despite an increasing number of positive trade flows from developing countries to the EU over the studied time period, the share of preference receiving countries of total EU (15) imports has decreased. This alone cannot be taken as evidence that preferences have had little or no effect. Nevertheless, it indicates that developing countries' exports to the EU have increased less than could be expected given the general evolution of EU imports. Real exports to the EU from most preference groups have increased though, as has the number of *observed* trade flows.

Table 1 EU imports from selected groups of developing countries

Country group*	Variable (3 year average)	1960-1962	1971-1973	1981-1983	1991-1993	2000-2002
ACP	Real exports (million US$)	9 687	17 333	14 867	17 333	22 333
	Share of EU imports (%)	3.15	2.21	1.76	1.06	0.94
	No of observations (3 years)	486	1 110	1 782	2 391	2 386
GSP	Real exports (million US$)	34 300	55 900	55 500	111 000	206 333
	Share of EU imports (%)	11.14	7.11	6.57	6.85	8.73
	No of observations (3 years)	1 371	2 217	3 110	4 018	4 053
MED	Real exports (million US$)	4 780	7 047	11 400	17 600	27 967
	Share of EU imports (%)	1.54	0.90	1.35	1.09	1.19
	No of observations (3 years)	181	205	241	294	294
Drug	Real exports (million US$)	3 727	5 530	4 580	6 317	8 377
	Share of EU imports (%)	1.21	0.71	0.54	0.39	0.35
	No of observations (3 years)	306	389	412	417	420
LDC	Real exports (million US$)	4 233	8 743	5 483	7 480	11 800
	Share of EU imports (%)	1.38	1.11	0.65	0.46	0.50
	No of observations (3 years)	229	607	997	1475	1539

Notes: *Defined as countries receiving preferences in 2000 and in our regression sample.
EU defined as EU members as of 2000. Imports to (West) Germany are not included before 1971.
GSP includes ACP, MED, Drug and LDC countries. Note that imports from other EU countries form part of the total imports to an EU country.

If the decrease in the EU import shares is attributable to some factors not controlled for by the explanatory variables (GDP and population) in the

regression, this downward trend will bias our estimates of the preferences. This reinforces the justification for including bilateral time trends in our regression.

Estimation results

The results of the estimation of equation 1 above are shown in table 2. Since the method of including bilateral time trends is new in this literature, we include the results of regressions both with and without bilateral time trends. The GDP coefficients for the importing and exporting countries are positive and highly significant in both specifications. However, including the time trends reduces the coefficients, which is what we would expect if the GDP variable partly explains the trends in a country's trading relations. The population of the exporting country has no significant effect on trade in the time trend specification, but a significantly positive effect in the specification without time trends. In contrast, EU countries with a large population import significantly *less* from developing countries in both specifications.

Comparing the two specifications with and without time trends in table 2, it is obvious that inclusion of the time trends has a large impact on the estimates and the decomposition of the trade effects of preferences. The included time trends are important to control for country pair factors not constant over the rather long period studied (1960–2002), since failing to control for factors affecting trade might bias the results. On the other hand, time trends can capture some of the effects of trade preferences if the effect is gradual. Hence, the model with time trends is likely to underestimate the true effect of preferences, while failure to control for the time trends would bias the results in an unknown direction. Therefore, we prefer a conservative estimation strategy implying a possible downward bias of our estimates.

Table 2 Gravity model estimates

Dependent variable ln(real imports)	(1) With time trend		(2) Without time trend	
Variables	Coeff.	P-value	Coeff.	P-value
GDP(i)	0.643	0.000	1.272	0.000
POP(i)	-1.527	0.000	-0.660	0.027
GDP(j)	1.230	0.000	1.420	0.000
POP(j)	-0.549	0.300	0.613	0.000
EU	-0.239	0.000	-0.295	0.000
EU*GSP	0.035	0.323	0.344	0.000
EU*Yaoundé	-0.035	0.471	-0.142	0.007
EU*GSP*LDC	0.155	0.039	0.348	0.000
EU*GSP*Drug	-0.025	0.561	0.185	0.000
EU*MED	-0.083	0.188	0.435	0.000
EU*GSP*Yaoundé	0.254	0.000	0.108	0.104
EU*GSP*Lomé	0.231	0.000	-0.088	0.013
EU*GSP*LDC*Lomé	-0.139	0.094	-0.688	0.000
EU*GSP*MED	0.182	0.029	-0.408	0.000
Country pair time trend	Yes		No	
Country pair fixed effect	Yes		Yes	
Time fixed effect	Yes		Yes	
Observations	43314		43314	
Country pairs	1520		1520	

Notes: Natural logarithms of real GDP and population. P-values are based on robust standard errors, since diagnostic tests indicate that both heteroskedasticity and autocorrelation are present in the data.

A common result in both models is that countries joining the EU, *ceteris paribus*, experience a fall in imports from developing countries. However, the conclusions that can be drawn about the coefficients of EU*GSP, EU*Yaoundé and EU*MED differ greatly depending on whether time trends are included or not. Hence, it is not possible to compare the other coefficients of the specifications directly since they are only included as interactions. Our preferred specification is the one with bilateral time trends, so we will focus on the results from that.

Looking at the results, one can start by noting that having only GSP preferences does not significantly increase exports, and neither does having only Yaoundé or Mediterranean preferences. This means that preferences granted in the 1960s and beginning of the 1970s did not increase the receiving countries' exports. Countries that are granted additional preferences under the drug regime

do not have an extra effect above the GSP effect, but for countries that have GSP, also getting Yaoundé, LDC, Lomé or Mediterranean preferences *does* have a significant extra effect.[16] Strictly speaking, the Yaoundé and some Mediterranean countries first have preferences under their respective schemes, and then receive GSP preferences. Consequently, the correct interpretation regarding these countries is presumably that preferences only start to have an effect later in the period (i.e.1972 when the GSP dummy starts being 1) or in the case of Mediterranean preferences that it is the more recent Cooperation Agreements that actually have an effect. For countries with GSP and LDC preferences there is a non-significantly smaller effect of also being in the Lomé Convention.[17]

Lastly, as mentioned above, the negative EU dummy shows that joining the EU has a negative effect on imports from developing countries, but since new EU members also implement EU trade preferences, which may have a positive impact on imports from developing countries, the total effect of EU enlargements should be analysed using the EU dummy in combination with the relevant preference dummy variables.

Effects on specific country groups

While the estimation results above are interesting in their own right, what we really want to be able to say something about is the aggregate effect of preferences and EU enlargements on different groups of developing countries based on what preference regimes they are a party to. Such an aggregation is shown in table 3. Note that this table does not include the *EU effect*, and that it is based on the time trend specification.

[16]The relevant dummies are EU*GSP*Drug, EU*GSP*Yaoundé, EU*GSP*LDC, EU*GSP*Lomé and EU*GSP*MED.
[17] The relevant dummy is EU*GSP*Lomé*LDC.

Table 3 Estimated aggregate effects of preferences

Preferences received	Coeff.	P*	%**	Definition
GSP	0.035	0.323	3.56	GSP
GSP & Yaoundé	0.254	0.000	28.92	GSP + Yaoundé + GSP*Yaoundé
GSP & LDC but not Lomé	0.190	0.019	20.92	GSP + GSP*LDC
GSP & Drug	0.010	0.857	1.01	GSP + GSP*Drug
GSP & MED	0.134	0.058	14.34	GSP + MED + GSP*MED
GSP & Lomé but not LDC	0.266	0.000	30.47	GSP + GSP*Lomé
GSP & LDC & Lomé	0.282	0.000	32.58	GSP + GSP*Lomé + GSP*LDC + GSP*LDC*Lomé

Notes: *P-values from a Wald test that the sum of the coefficients indicated in the last column equal zero. **The percentage increase of exports (gross trade creation) is calculated using the formula $(e^{coef}-1)*100$. To save space "EU" has been omitted, but all variables are interacted with the EU dummy.

The key conclusion from table 3 is that all country groups, with the exception of countries exporting to the EU under the drug regime or under the general arrangements of the GSP, have benefited significantly from getting preferences. For example, countries with GSP and Yaoundé preferences have experienced an export increase corresponding to almost 29 percent of actual exports. On the other hand, countries with GSP and Mediterranean preferences have had gross trade creation of over 14 percent of actual exports, even though the effect strictly speaking is not significant on the 5 % level since the p-value is 0.058.

So, in most cases, *ceteris paribus*, getting preferences has increased developing countries' exports. What can be said about the magnitudes of the effects? Generally, these follow the expectations very nicely. Groups of countries that have some form of ACP preferences, and hence are at the top of the pyramid of privilege, do have the largest positive effects: Lomé countries appear somewhat more favoured than Yaoundé countries. As expected, the positive effects for Mediterranean countries are smaller, but still significant, while for countries that only enjoy GSP status there are no significant effects.

Looking more closely at the results, one interesting conclusion is that those countries that cannot use Lomé preferences, but can use the special preferences for least developed countries within the GSP, have actually had a larger effect than

Mediterranean countries. This may seem surprising, but it does fit the comment, made in part two above, that it is difficult to correctly place LDC preferences in the pyramid of privilege since these preferences change over time—as do Mediterranean preferences. Specifically, the possibly larger effects of the Barcelona process are not captured by the EU*GSP*MED dummy since it is coded as 1 from the 1970s.

All in all, however, our results do seem to confirm not only that preferences can have an export increasing effect, but also that the magnitude of these effects are consistent with the quality of the preferences that are available. In other words, ACP preferences (Lomé or Yaoundé) have the largest effects, Mediterranean preferences have smaller but still significant effects, but those countries that only get a preference margin in relation to developed countries (without preferential trade agreements with the EU), i.e. countries only having GSP, have not been able to use these preferences to increase exports significantly.

Compared with results obtained earlier in the literature, our conclusions are similar to those in Oguledo and MacPhee (1994), even though they find much larger effects than we do. Our results also confirm Nilsson's (2002) conclusion that ACP preferences have had the largest effects, but unlike him we cannot find a significant effect of the general GSP, while we do find that Mediterranean preferences have increased these countries' exports. Note that we find a significant and quite large effect of the special regime for LDCs within the GSP, which might explain why Nilsson, who does not differentiate between different regimes in the GSP, finds a positive GSP effect. Again, Nilsson's effects are larger than ours.

Concerning Mediterranean preferences, our results are very much in line with those of Péridy (2005), who uses a method more similar to ours: he finds that preferences have led to a gross trade creation of 20-27% of actual exports, while our figure is somewhat lower at around 14%. Considering that we include Mediterranean preferences from the end of the 1960s and onwards, while Péridy's study only starts at 1975, this difference seems reasonable.

On the other hand, our estimates of the effects of ACP preferences are much smaller than those in Carrère (2004). The main differences between our study and Carrère's are the country sample and the estimation technique. We are only concerned with exports to EU countries, while she uses a much larger sample including South-South and North-North trade. Also, our study applies standard fixed effects while she uses a Hausman and Taylor (1981) approach.

Besides showing that preferences can and do have large effects that differ between countries, another interesting result of our estimations is the negative and highly significant coefficient for the EU dummy. As noted above, the correct interpretation of this is that countries *joining* the EU, all else equal, decrease their imports from developing countries, i.e. there is evidence of significant trade diversion. With our method, we cannot say whether countries that are already EU members decrease their imports from developing countries when the union is enlarged, since dummy variables in the fixed effects model will capture the effect of changing status. So, what we capture is the effect of enlargement on *new* members' imports. Our result of a negative effect supports the findings by Soloaga and Winters (2001).

To evaluate the full impact of the EU and its trade policy on developing countries' exports the estimated coefficient of the EU dummy variable should be added to the results in table 3. If this is done, the joint effect of EU enlargements and trade preferences will be insignificant for all preference systems, except GSP and *Drug* for which the effect is negative, since the negative effect of EU-enlargements dominates the effect of preferences. As stated above, the EU dummy variable indicates the effect of accession to the EU on average over the studied period and should not be confused with the effects of preferences, shown in table 3, that are conditioned on the size of the EU.

6 Conclusions

We have estimated a gravity model on a large sample of EU and developing countries over the period 1960 to 2002 to assess the effects of trade preferences offered by the EU, while taking into account the potential effect of EU enlargements. Using a new database of EU trade preferences created for this paper, and incorporating recent methodological developments in the gravity literature, we have been able to show that not only can trade preferences in general increase exports from developing countries, but the size of the gross trade creation is also in line with expectations. ACP countries that have benefited under the Lomé and Yaoundé Conventions, and which have been described as being on top of the "pyramid of privilege", have actually seen the largest export increasing effects, with levels of gross trade creation around 30% of actual exports. Mediterranean countries, theoretically somewhat less preferred than ACP countries, have had smaller but still substantial effects: increases of around 14% of exports. Countries at the bottom of the pyramid of privilege, those only having access to the GSP, have not had any significant increases of their exports, even though the group of least developed countries that receive additional benefits within the GSP have seen substantial effects. Besides the effects for least developed countries, which as far as we know have not been estimated *ex post* elsewhere, these results are in line with more recent contributions to the literature on trade preferences. Our estimated effects are generally smaller than those that have been estimated in a cross-sectional setting, but similar to those obtained by panel data methods.

In addition to the positive effect of getting preferences, our estimations also show that countries *becoming* members of the EU start to import less from developing countries. This is an effect that has not been looked at much before, even though there are earlier studies suggesting that the EU does have a trade diverting effect.

To offer some comments on these results, a first important point to make is that preferences have actually had an effect, even though many commentators, looking mostly at shares of EU imports, have concluded that they are of little value. To reconcile these different views, it is crucial to understand that our results say that when taking a lot of other factors that influence trade into account, including the negative impact of EU enlargements, trade preferences have had a positive effect, even though these other factors have had large and negative effects. For instance, the correct interpretation for ACP countries and LDCs for whom EU import shares certainly have declined, is that their disappointing trade record would have been *even worse* without preferences.

The second point to make is that our method does not allow us to see, for example, whether ACP countries gain their positive effects at the expense of other developing countries, i.e. whether the effects are due to trade diversion. Certainly, this would seem plausible.

Thirdly, our study offers evidence on the effects of preferences and EU enlargements seen over the whole period. It is likely that the effects of preferences have diminished over time, considering the general dismantling of trade barriers that have taken place and that would erode the preference margin. Further research on this development, as well as on the evolution of the enlargement effect over time, would be interesting.

A fourth and final comment, and perhaps the most important one from a policy perspective, is that our results suggest that developing countries may suffer large drawbacks every time the EU is enlarged. Since the end of this study's time period, ten new countries have become members of the EU, and more are waiting to enter the union in the near future. If all of these show the same decline when it comes to importing goods from developing countries, the resulting trade diversion, reducing developing countries exports, could be large, and it may not be enough to just offer preferences to balance these negative effects.

7 References

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Appendix 1

Table A1 Beneficiary countries under preferential trading regimes.

Country	**GSP**			**MED**	**ACP**	
	General	*LDC*	*Drug*		*Yaoundé*	*Lomé*
Albania	1992-2000					
Angola	1972	1997				1987
Argentina	1972					
Bahamas	1972					1976
Bahrain	1972					
Bangladesh	1973	1977				
Barbados	1972					1976
Belize	1972					1982
Benin	1972	1977			1964-1975	1976
Bhutan	1973	1977				
Bolivia	1972		1991			
Botswana	1972	1977-1997				1976
Brazil	1972					
Burkina Faso	1972	1977			1964-1975	1976
Burundi	1972	1977			1965-1975	1976
Cambodia	1972	1993				
Cameroon	1972				1964-1975	1976
Cape Verde	1972	1981				1977
Central African Republic	1972	1977			1964-1975	1976
Chad	1972	1977			1964-1975	1976
Chile	1972					
China	1980					
Colombia	1972		1991			
Comoros	1972	1981				1977
Congo, Dem. Rep.	1972	1993			1964-1975	1976
Congo, Rep.	1972				1965-1975	1976
Costa Rica	1972		1992			
Cote d'Ivoire	1972				1964-1975	1976
Djibouti	1972	1981				1978
Dominica	1972					1979
Dominican Republic	1972					1992
Ecuador	1972		1991			
Egypt	1972			1974		
El Salvador	1972		1992			
Equatorial Guinea	1972	1981				1976
Eritrea	1995	1995				1993
Ethiopia	1972	1977				1976
Fiji	1973					1976
French Polynesia	1972					
Gabon	1972				1964-1975	1976
Gambia	1972	1977				1976

Country	**GSP**			**MED**	**ACP**	
	General	*LDC*	*Drug*		*Yaoundé*	*Lomé*
Ghana	1972					1976
Grenada	1972					1976
Guatemala	1972		1992			
Guinea	1972	1977				1976
Guinea-Bissau	1972	1981				1976
Guyana	1972					1976
Haiti	1972	1977				1992
Honduras	1972		1992			
India	1972					
Israel				1971		
Jamaica	1972					1976
Jordan	1972			1978		
Kenya	1972				1971-1975	1976
Kiribati	1980	1988				1980
Laos	1972	1977				
Lebanon	1972			1978		
Lesotho	1972	1977				1976
Liberia	1972	1993				1976
Macao, China	1972					
Madagascar	1972	1993			1964-1975	1976
Malawi	1972	1977				1976
Malaysia	1972					
Maldives	1972	1977				
Mali	1972	1977			1964-1975	1976
Mauritius	1972				1972-1975	1976
Mongolia	1991					
Morocco	1972			1970		
Mozambique	1972	1990				1986
Namibia	1991					1990
Nepal	1972	1977				
New Caledonia	1972					
Nicaragua	1972		1992			
Niger	1972	1977			1964-1975	1976
Pakistan	1972		2002			
Panama	1972		1992			
Papua New Guinea	1972					1977
Paraguay	1972					
Peru	1972		1991			
Philippines	1972					
Rwanda	1972	1977			1964-1975	1976
Samoa	1973	1977				1976
Sao Tome and Principe	1972	1981				1977
Senegal	1972	2002			1964-1975	1976
Seychelles	1972	1981-1989				1977
Sierra Leone	1972	1983				1976
Singapore	1972-1999					
Solomon Islands	1979	1993				1979

Country	**GSP**			**MED**	**ACP**	
	General	*LDC*	*Drug*		*Yaoundé*	*Lomé*
Sri Lanka	1972					
St. Kitts and Nevis	1972					1984
St. Lucia	1972					1979
St. Vincent and the Grenadines	1972					1980
Sudan	1972	1977				1976
Suriname	1972					1977
Swaziland	1972					1976
Syria	1972			1978		
Tanzania	1972	1977			1971-1975	1976
Thailand	1972					
Togo	1972	1983			1964-1975	1976
Tonga	1973	1981-1997				1976
Trinidad and Tobago	1972					1976
Tunisia	1972			1970		
Uganda	1972	1977			1971-1975	1976
Uruguay	1972					
Vanuatu	1980	1993				1981
Vietnam	1972					
Yemen	1991	1991				
Zambia	1972	1993				1976
Zimbabwe	1981					1981

Notes: The years indicate the *actual* entry into force of accession to the various systems; this may differ substantially from the formal date of signing (and in some cases from the actual entry into force of the whole system: e.g. within the frameworks of ACP and Mediterranean Preferences, trade provisions often start to apply before the rest of the agreements). When two dates are included, the second signifies the last year of receiving preferences. Consistently, a date of entry into force from January 1 to June 30 is translated into the same year, while a date of entry into force from July 1 to December 31 is counted from the next year. Since the preferences under the Arusha Agreement were quite similar to the ones in the Yaoundé Convention, countries benefiting from this (Kenya, Tanzania and Uganda) are listed as Yaoundé countries.
Source: Various issues of the *Official Journal of the European Communities* 1964-2002.