

DO UNIDIRECTIONAL TRADE AGREEMENTS INCREASE EXPORTS FROM THE DEVEVELOPING WORLD TO RICHER COUNTRIES?

Salvador Gil-Pareja *

Rafael Llorca-Vivero

José Antonio Martínez-Serrano

University of Valencia

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Abstract

This paper investigates whether and to what extent unidirectional trade agreements have increased developing countries' exports to richer countries. Using traditional estimation techniques and recent developments in the econometric analysis of the gravity equation over the period 1990-2008, we find robust evidence that, on the whole, nonreciprocal preference regimes and GSP schemes have had an economically significant effect on exports. However, the estimation of catch-all dummies masks heterogeneous results for the individual schemes. We find strong evidence that the ACP-EU, EBA as well as GSP schemes of EU, US, Japan, Canada and Turkey have had a large positive effect on developing countries exports to the corresponding developed markets.

Key words: Unidirectional trade agreements; GSP; EBA; AGOA; developing countries..

JEL Classification numbers: F14.

*Facultad de Economía, Departamento de Estructura Económica, Av. de los Naranjos s/n, C.P. 46022, Valencia, Spain. Email: Salvador.Gil-Pareja@uv.es; Rafael.Llorca@uv.es; Jams@uv.es. Tel. 34963828349. Fax 34963828354. We are extremely grateful to Marc Melitz for invaluable help with the implementation of the estimator used in this paper. We also thank Silvano Esteve for valuable comments. This study is part of a research project financed by *Ministerio de Ciencia y Tecnología* (project SEJ2006-07238/ECO) and has been part-funded by the European Regional Development Fund (ERDF). We also thank financial support from the Generalitat Valenciana (GVPROMETEO2009-098). A previous version of this article was published as Working Paper No 440/2009 of FUNCAS.

1. Introduction

The increase of exports from developing countries to industrialized nations' markets has long been considered an essential element to reduce poverty, promote sustainable development and reap the potential benefits of globalization for the developing world. While there has been an intense debate in policy-making circles on how best to accomplish these aims, the prevailing approach has implied that developed countries give support to the integration of developing countries into the world economy through an special and differential treatment (in the form of nonreciprocal tariff preferences) for imports from the developing world. The leading instrument for such trade preferences has been the Generalised System of Preferences, but there exist other Unidirectional Trade Agreements (UTAs) that are part of this approach such as, the Everything But Arms arrangement or the African Growth and Opportunity Act.

The Generalised System of Preferences (GSP) is an exception to the GATT norm of nondiscrimination emerged in the 1960s, through which the developed countries provide preferential access to their markets to a large number developing countries and territories.¹ Australia was the first developed country authorized to establish a GSP for developing countries in 1966, and since the early 1970s other developed countries followed in Australia footsteps (EU's countries, US, Canada or New Zealand, among others).

In addition to the standard GSP schemes, the EU and the US have signed other preference regimes with poor countries. On the one hand, the Cotonou Agreement (also known as ACP-EU Partnership Agreement) is the most comprehensive partnership

¹ According to the WTO provision known as the GSP "Enabling Clause", the developed countries may grant unilateral preferences to developing countries. These unilateral preferences must be generalised and extended to all developing countries. Thus, preferences under the GSP schemes are granted for development reasons and not on a geographical basis or because political or historical links.

agreement between developing countries from Africa, the Caribbean and the Pacific (ACP) and the European Union (EU).² The basic principle of Cotonou Agreement (henceforth ACP-EU) is that, with some exceptions, the ACP countries' industrial exports have duty- and quota- free access to the EU market. Another preference regime, that forms part of the EU's GSP scheme, is the Everything But Arms (EBA) arrangement, which provide Duty-Free, Quota-Free access to the EU market for all products for the 49 Least Developed Countries (LDCs). On the other hand, besides the United States' GSP program (that started in 1976), the US administration also grants other, more recent, nonreciprocal preference regimes including the Caribbean Basin programs, the Andean Trade Preference Act and the African Growth and Opportunity Act (AGOA).

This paper investigates whether and to what extent nonreciprocal preference regimes have increased developing countries' exports. To the best of our knowledge, there are no studies that measure and compare the effect on the developing countries exports of all nonreciprocal preference regimes. Thus, our paper fits within a larger literature that attempts to measure the effect of policies on bilateral trade using gravity equations.³ In our case, the sample covers 182 countries over the period 1990-2008.

² The notion of "ACP States" goes back to the "ACP Group of States", formally established in 1975. Nowadays, the ACP Group of States counts 79 countries. From 1975 until 2000 the ACP-EU relations were governed by the regularly adapted and updated Lomé Conventions. The fourth Lomé Convention expired on 29 February, 2000, and it was succeeded by the Cotonou Agreement.

³ The main branch of that literature examines the effect of trade agreements (see, for example, Carrère, 2006, Baier and Bergstrand, 2007, Gil, Llorca and Martínez-Serrano, 2008a or Lee Park and Shin, 2008). But the gravity model has also been regularly used to estimate the trade effects of currency unions (Rose, 2000, Glick and Rose, 2002; Micco, Stein and Ordoñez, 2003, or Gil, Llorca and Martínez-Serrano, 2008b), exchange rate regimes (Klein and Shambaugh, 2006 or Gil, Llorca and Martínez-Serrano, 2007) GATT/WTO membership (Rose, 2004; Subramanian and Wei, 2007 or Tomz, Goldstein and Rivers, 2007), and even of the physical presence of government officials in the destination markets or the existence of state visits (Rose, 2007; Nitsch, 2007 or Volpe-Martincus and Carballo, 2008)

To preview our results, we find strong evidence the ACP-EU, EBA as well as GSP schemes of EU, US, Japan, Canada and Turkey have had a large positive effect on developing countries exports to the corresponding developed markets. However, we do not find evidence that membership in AGOA has had a positive effect on exports from African countries to the US. The same occurs for membership in the GSP schemes of Australia, New Zealand, Norway, Russia or Switzerland.

The paper is structured as follows. Section 2 presents the methodology. Section 3 describes the data. Section 4 discusses the estimation results. Finally, section 5 concludes the paper.

2. Methodology

The international trade literature provides two kinds of approaches to analysing the effects of preferential trade agreements (PTAs). The *ex-ante* approach, which uses computable general equilibrium (CGE) models, and the *ex post* approach, which measures trade effects by means of regression techniques. One advantage of CGE models is that they can be used to draw direct inferences about consumption, output and welfare. However, one major limitation of these models is that they use restrictive assumptions and very simple characterisations of real-world preferential trade agreements. In contrast, while the econometric studies cannot analyse consumption, output or welfare effects directly, they have three major advantages: implementation simplicity, superior empirical performance and the possibility of examining actual PTAs.

The gravity equation has emerged as the empirical workhorse in international trade for examining the *ex-post* effects of PTAs on bilateral trade flows. Therefore, to estimate the *ex post* effects of the special trade preferences given by developed countries to developing countries on international trade, we rely on the standard gravity

model of trade, which relates bilateral trade flows to economic size, distance and other factors that affect trade barriers.⁴

We estimate the following general equation:

$$\begin{aligned} \ln X_{ijt} = & \beta_0 + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{jt} + \beta_3 \ln D_{ij} + \beta_4 Cont_{ij} + \beta_5 Island_{ij} + \beta_6 Landl_{ij} \\ & + \beta_7 Lang_{ij} + \beta_8 Colony_{ij} + \beta_9 ComCountry_{ij} + \beta_{10} Creligion_{ij} + \beta_{11} CU_{ijt} \\ & + \beta_{12} PTAPlur_{ijt} + \beta_{13} PTABil_{ijt} + \beta_{14} EcoGlob_{it} + \beta_{15} EcoGlob_{jt} + \beta_{16} UTA_{ijt} + u_{ijt} \end{aligned} \quad (2)$$

where i and j denote trading partners, t is time, and the variables are defined as follows:

X_{ijt} are the bilateral export flows from i to j in year t ,

Y denotes Gross Domestic Product,

D denotes the distance between i and j ,

$Cont$ is a dummy variable equal to one when i and j share a land border,

$Island$ is the number of island nations in the pair (0, 1, or 2),

$Landl$ is the number of landlocked areas in the country-pair (0, 1, or 2),

$Lang$ is a dummy variable which is unity if i and j have a common language,

$Colony$ is a binary variable which is unity if i ever colonized j or vice versa,

$ComCountry$ is a binary variable which is unity if i and j were part of a same county in the past,

$Creligion$ is an index of common religion⁵,

CU is a binary variable which is unity if i and j use the same currency at time t ,

$PTAPlur$ ($PTABil$) is a binary variable which is unity if i and j belong to the same plurilateral (bilateral) preferential trade agreement,

$EcoGlob$ is an index of economic globalization

⁴ The initial applications of the gravity equation to international trade lacked theoretical foundation. However, since the end of the 1970's the situation has changed and nowadays the gravity equation is backed up by sound theory. See, among others, Anderson (1979), Bergstrand (1985 and 1989), Deardoff (1998), Evenett and Keller (2002), Eaton and Kortum (2002) and Anderson and van Wincoop (2003).

⁵ The index is defined as: (% Protestants in country i * % Protestants in country j) + (% Catholics in country i * % Catholics in country j) + (% Muslims in Country i * % Muslims in country j).

UTA is a binary variable which is unity if i is a beneficiary of an Unidirectional Trade Agreement and j is the corresponding preference-giving country, and u_{ijt} is the standard classical error term.

We estimate the gravity equation (1) in a number of different ways. We begin with conventional ordinary least squares, including a full set of year-specific intercepts and using robust standard errors. Next we run the gravity equation using both country fixed effects (CFE) and country year fixed effects (CYFE). The strategy of using CFE sufficiently addresses multilateral resistance in a cross section but CYFE are required to comprehensively control for multilateral resistance in panel datasets (Anderson and van Wincoop, 2003 and 2004). We additionally employ the two-stage estimation procedure proposed by Helpman, Melitz and Rubinstein (2008), which allows us to correct for selection bias and to account for exporter heterogeneity.

The HMR (2008) estimation procedure consists in two-stages. In the first stage they estimate a probit equation that specifies the probability that country i exports to j conditional on the observable variables. In the second stage, predicted components of this equation are used to estimate the gravity equation. This procedure simultaneously corrects for two types of potential biases: a Heckman selection bias and a bias from potential asymmetries in the trade flows between pairs of countries.

More formally, in a first stage they estimate a probit equation of the type:

$$\Pr ob(T_{ij} = 1 / \text{observed variables}) = \Phi(\chi_i, \lambda_j, X_{ij}, Z_{ij}, \varepsilon_{ij}) \quad (3)$$

where T_{ij} is an indicator variable equal to 1 when country i exports to j and zero when it does not, Φ is the cumulative distribution function of the standard normal distribution, χ_i and λ_j are exporter and importer fixed effects, X_{ij} are variables which affect both the probability and the volume of trade, and Z_{ij} represents variables that are used for the exclusion restriction, that is, those that affect the probability of observing a

positive volume of trade but do not impact the volume of trade if this were to be positive.⁶ Using the probit regression, they construct two variables that are included as regressors in the second stage estimation. One is the inverse of Mills ratio and the other is an expression that controls for firm size heterogeneity. In particular, the second stage consists in the estimation for a given year of the following non-linear equation for all country-pairs with positive trade flows:

$$\ln Trade_{ij} = \beta_0 + \lambda_j + \chi_i - \gamma X_{ij} + \theta \eta_{ij}^* + \ln \left\{ \exp \left[\delta (\hat{z}_{ij}^* + \eta_{ij}^*) \right] - 1 \right\} + \varepsilon_{ij} \quad (4)$$

where η_{ij}^* is the inverse Mills ratio and $\hat{z}_{ij}^* = \Phi^{-1}(\rho_{ij})$ in which ρ_{ij} are the estimates from the probit equation.⁷

3. Data

The trade data for the regressand (export flows from country i to country j) come from the “Direction of Trade” (DoT) dataset built up by the International Monetary Fund (IMF). The data comprise bilateral merchandise trade between 182 countries and territories (see Table A1) for seven years of the period 1990-2008 at three-year intervals (1990, 1993, 1996, 1999, 2002, 2005 and 2008).⁸ The DoT dataset provides FOB exports in US dollars. These series are converted into constant terms using the American GDP deflator taken from the Bureau of Economic Analysis (US Department of Commerce).

⁶ In this set-up, parameter identification requires the existence of a variable that affects the probability of observing a non-zero flow between two countries but not the volume. Alternatively, a variable which affects both decisions in opposite directions would also work.

⁷ Since equation (3) is non-linear in δ , following HMR (2008) we estimate it using maximum likelihood.

⁸ It is noteworthy that not all the areas considered are countries in the conventional sense of the word. We also include some dependencies, territories and overseas departments in the data.

The independent variables come from different sources. GDP data in constant US dollars are taken from the World Development Indicators (World Bank). For location of countries (geographical coordinates), used to calculate Great Circle Distances, and the construction of the dummy variables for physically contiguous neighbours, island and landlocked status, common language, colonial ties, common religion and common country background data are taken from the CIA's World Factbook. The indicators of preferential trade agreements have been built using data from the World Trade Organization, the Preferential Trade Agreements Database (The Faculty of Law at McGill University) and the web site http://ec.europa.eu/trade/issues/bilateral/index_en.htm. The indicators of currency unions are taken from Reinhart and Rogoff (2002), CIA's World Factbook and Masson and Pattillo (2005). The sample includes 192 preferential trade agreements (plurilateral and bilateral) and 17 currency unions.⁹ Data on Economic Globalization come from Dreher, Axel (2007): Does Globalization Affect Growth? Evidence from a New Index of Globalization, *Applied Economics*, 38 10: 1091-1110, updated in Dreher, Axel; Noel Gaston and Pim Martens (2008): *Measuring Globalization - Gauging its Consequences* (New York: Springer). Data on the key variables AGOA and EBA come from the corresponding web pages¹⁰. The list of beneficiaries of the Cotonou Agreement and those of the standard GSP schemes are taken from the United Nations Conference on Trade and Development (2008).

⁹ The list of preferential trade agreements considered appears in Appendix B (Tables B1 and B2). The expression PTAs in this paper refers also to other agreements involving a higher degree of economic integration. In fact, most economic integration agreements considered in the sample are free trade agreements. The list of currency unions appears in Table B3.

¹⁰ See, http://www.agoa.gov/eligibility/country_eligibility.html for AGOA and <http://ec.europa.eu/trade/wider-agenda/development/generalised-system-of-preferences/everything-but-arms>, for EBA. The list of developing countries benefiting from the different nonreciprocal preference schemes appear in Appendix C (Tables C2a and C2b).

4. Empirical results

Our benchmark specification to estimate the effect of Unidirectional Trade Agreements on developing countries exports is Ordinary Least Squares (with a full set of year-specific intercepts added to correct for common shocks and trends). The results are reported in column 1 of Table 1. The gravity equation works well in two senses. First, the equation fits the data well explaining more than two-thirds of the variation of bilateral exports flows. Second, the estimated coefficients are, on the whole, intuitive in sign and size and both economically and statistically significant. The negative effect of a common religion and the insignificant effect of a common currency are the exceptions. Economically larger countries trade more and more distant countries trade less. Landlocked countries trade less, whereas sharing a common border, a common language, or sharing membership in a plurilateral or bilateral preferential trade agreement increase trade. The existence of colonial ties encourages trade, as do being islands or part of the same country in the past. Finally, the degree of economic globalization of both exporter and importer countries also affects positively trade.¹¹ With regard to the variable of interest, we estimate a positive coefficient for *UTA*, that is, we find that Unidirectional Trade Agreements are associated with an increase of exports from developing countries benefiting from these nonreciprocal preference regimes ($[\exp(0.166)-1]*100=18$ percent).

Columns 2 and 3 of Table 1 contains regression results adding country-specific fixed effects (CFE) and country year fixed effects (CYFE) to the benchmark equation.

¹¹ The index of economic globalization used in this paper takes into account measures of actual flows (trade foreign direct investment and portfolio investment, all in percent of GDP) and measures of restrictions on trade and capital (hidden import barriers, mean tariff rates, taxes on international trade and capital account restrictions).

The inclusion of CFE (column 2) controls for the multilateral resistance terms under the assumption that these terms do not vary over time. In almost all cases, the impact goes in the same direction. The exceptions are the estimated coefficients of the variables for common religion (that in this case is positive and statistically significant) and economic globalization index of the destination markets (that loses the statistical significance). The estimated coefficient of the variable *UTA* is once again positive (0.262) and highly statistically significant. Results including time-varying fixed effects for exporters and importers (CYFE) reinforces our findings (column 3). Once we properly account for the fact that multilateral resistance may change over time the variable of interest presents an estimated coefficient that doubles its value from 0.262 to 0.502. Additionally, the coefficient of economic globalization index of the destination markets recovers the statistical significance at the 1 percent level. Thus, the evidence that unidirectional trade agreements boost exports seems robust.

Columns 1 to 3 report the results for three specifications that include a catch-all *UTA* dummy. Eicher and Henn (2009), in a recent paper on a related strand of the empirical gravity literature (the measurement of the effect of currency unions on trade), show the importance of splitting the catch-all PTA and CU dummies into the individuals PTAs and CU arrangements. According to these authors, if individual PTAs and CUs do not generate identical trade benefits, as a large empirical literature has documented, estimating an average coefficient using a catch-all PTA or CU dummy generates biased results. In line with this argument, it is important to estimate the gravity equation allowing for individual *UTA* effects.¹²

¹² Since AGOA members are also GSP beneficiaries of US, before AGOA got into force the dummy variable *GSPUS* takes the value of 1 for all countries under the US's GSP scheme and after that date only for non-AGOA countries under the US's GSP scheme. The same criterium is followed for the *GSPEU* dummy with respect to the dummies ACP-EU and EBA.

The next step of the estimation process was to run the gravity equation splitting the *UTA* dummy into a catch-all *GSP* dummy and separate dummies for *AGOA*, *EBA* and *ACP-EU*. Columns 4 to 6 present the results using OLS, CFE and CYFE, respectively. We focus in the latter approach since it comprehensively accounts for multilateral resistance and, therefore, it is the only fully in line with the theoretical foundations of the gravity equation. We find that *ACP-EU* and *EBA* increase exports from the developing world, as do GSP schemes. The results for *GSP* are consistent with Rose (2004) and Tomz, Goldstein and Rivers (2007), who find that the GSP extended from the North to developing countries approximately doubles trade.¹³ However, we do not find evidence that membership in the *AGOA* have had a positive effect on African exports to US.

Table 2 repeats the estimations with higher levels of disaggregation of the variables of interest. The first three columns present the results when we split the *GSP* dummy into three dummies *GSPEU*, *GSPUS* and *GSPothers*. The estimated coefficients for these three variables are all positive and statistically significant, once we control for time-varying multilateral resistance terms. In particular, the estimated coefficients for *GSPUS* and *GSPEU* are 1.268 and 0.628, respectively (and they are statistically significant at the 1 percent level).¹⁴ However, the estimated coefficient of the variable that captures the impact of all other GSP schemes altogether is lower 0.210 and statistically significant at the 5 percent level. According to these results, the positive

¹³ Rose (2004) and Tomz, Goldstein and Rivers (2007) treat the average of two-way bilateral trade as the dependent variable. Subramanian and Wei (2007) criticize Rose for averaging imports and exports, though GSP effects should differ according to whether the importer or the exporter was the recipient of the preferences. These authors, using unidirectional trade data, show an estimated effect for the GSP very similar to that reported by Rose (2004). In contrast, Goldstein, Rivers and Tomz (2007), using also a data set comprised of directed dyads, find a negative coefficient for GSP.

¹⁴ In contrast with our results, Özden and Reinhardt (2005) find that US's GSP is not associated with an increase in trade.

effect of being in the standard EU's GSP scheme is similar to that of being in ACP-EU agreement and slightly larger than being in EBA.¹⁵ However, in contrast with the estimates for the impact of the US's GSP scheme, in line with our previous estimates, countries belonging to AGOA do not export more to the US.

Next, we re-estimate the gravity equation including a separate dummy for each individual UTA (columns 4 to 6). It allows us to check that there is a large heterogeneity in the impact of the different GSP schemes. According to the results reported in column 6 (CYFE), the largest estimated coefficients are found for *GSPUS* (1.271) and *GSPJapan* (1.228), followed by *GSPEU* (0.635), *GSPCanada* (0.487) and *GSPTurkey* (0.396). However, our results suggest that GSP schemes of Australia, New Zealand, Norway, Russia, and Switzerland are not associated with an increase in exports. In fact, surprisingly, the dummy variables for New Zealand's and Russia's GSP schemes show a negative and statistically significant coefficient at the 5 percent level.

Column 6 of Table 2 reports the results for a specification that include catch-all PTA or CU dummies. Following Eicher and Henn (2009), we also report the results allowing for individual plurilateral PTAs and individual CUs effects (column 7). The estimated coefficients of these variables and the fixed effects are not reported in the table for ease of presentation.¹⁶ As we can observe, the estimated coefficients do not change in a significant way and, in particular, the coefficients of the variables of interest remain nearly unaltered.

¹⁵ Nilsson (2002), in a comparative analysis of the effects of the EU's Lomé Convention and GSP on exports of developing countries finds positive and statistically significant export effects of both, but concludes that the export impact of the Lomé Convention were greater over the period 1973-1992.

¹⁶ Our sample include more than 200 individual plurilateral PTAs and CUs. For bilateral PTAs we have estimated an average coefficient using a catch-all dummy. The inclusion of individual dummies for bilateral PTAs does not affect the results in any significant way. The list of agreements considered appears in Appendix B.

The problem of all the above estimations is that in those regressions we use the sample of countries with positive trade volumes between them. Disregarding countries that do not trade with each other may produce biased estimates (HMR, 2008). Therefore, now we turn to the analysis of the results using the two stages estimation procedure suggested by HMR (2008). Table 3 reports the results. Since our sample has time dimension we include in this framework country year fixed effects in order to capture the time-varying nature of trade costs in panel data.¹⁷ The results for the probit regression are presented in column 1.¹⁸ Before discussing the empirical results, it is worth noting that the estimation of equation (2) might be subject to the incidental parameter problem and introducing a bias in the coefficients of the rest of variables (X_{ij} and Z_{ij}). However, as pointed out by Fernández-Val (2007), this bias does not affect the estimated marginal effects and, therefore, the predicted values obtained for the dependent variable. These results compared with those found using CYFE in Table 2 clearly show that almost the same variables that impact export volumes in the traditional estimation with CYFE also impact the probability that country i exports to country j . The exceptions are the dummy variables CU and GSP_{Norway} , which affect positively the probability of exports but not the volume of exports (in any of the previous specifications).¹⁹ In particular, the estimated marginal effect of the variables of interest are positive and statistically significant for EBA , $ACP-EU$ and GSP schemes of EU,

¹⁷ HMR (2008) applies their two stages estimation procedure to data from 1986 including in the regression exporting and importing CFE. The working paper version of this article (HMR, 2007) also presented the results for a large sample that covered all the 1980s. However, they also used in these regressions CFE and year fixed effects instead of CYFE.

¹⁸ Following HMR (2008) we also have country pairs whose characteristics are such that their probability of trade is indistinguishable from 1. Therefore, we assign the same \hat{z}_{ij}^* to those country pairs with an estimated $\hat{p}_{ij}^* > 0.9999999$.

¹⁹ The result for the variable CU (currency unions) contrast with the large evidence emerged after the Rose (2000) seminal paper. See Gil, Llorca and Martínez-Serrano (2008b) for a review of the literature about the CU trade effects.

Canada, US, Japan, Norway and Switzerland, suggesting that being members of these initiatives raises the probability of bilateral trade from developing countries to the cited developed countries.

Using the probit regression, as explained before, we construct two variables for correcting sample selection bias and firm heterogeneity. Both the non-linear coefficient δ and the linear coefficient for η_{ij}^* are precisely estimated. The results for the second stage can be seen in column 2 of Table 3. The variable *CU* has been excluded from the estimation for identification reasons.²⁰ The estimated coefficients are in line with those found using OLS including CYFE. At this stage, we once again find a positive and significant coefficient for *GSPUS*, *ACP-EU*, *GSPEU* and *EBA*, as well as for *GSPCanada*, *GSPJapan* and *GSPTurkey* but, once again, not for *AGOA* and the remaining GSP schemes. In particular, the largest estimated coefficients are found for *GSPJapan* (1.082) and *GSPUS* (1.052), which suggests that, other things equal, developing countries benefiting from trade preferences under the Japan and United States GSP schemes exports near three times more to these markets. For the remaining schemes the impact ranges between 61 and 97 percent.

5. Conclusions

This paper investigates whether and to what extent unidirectional trade agreements have increased developing countries' exports to richer countries. Using traditional estimation techniques and recent developments in the econometric analysis of the gravity equation over the period 1990-2008, we find robust evidence that, on the whole, nonreciprocal preference regimes and GSP schemes have had an economically

²⁰ Following HMR (2007, footnote 26), we have also used the variable common religion for this purpose. It yields very similar results (see Table 3bis).

significant effect on exports. However, the estimation of catch-all dummies masks heterogeneous results for the individual schemes. In particular, we find strong evidence that the ACP-EU and GSP schemes have had a large positive effect on developing countries exports to the corresponding developed markets (EU or US). This result also applies to EBA membership and to the GSP schemes of Japan, Canada and Turkey once we control for time-varying multilateral resistance terms or sample selection bias and unobservable firm heterogeneity. However, we do not find evidence neither that membership in the AGOA scheme has had a positive effect on exports from African countries to US nor that the remaining GSP schemes boost exports.

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Table 1. OLS and fixed effects estimations of the gravity equation (1). Sample period 1990, 1993, 1996, 1999, 2002, 2005, 2008.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	CFE	CYFE	OLS	CFE	CYFE
LnY _{it}	1.034 (0.007) ^{***}	1.172 (0.063) ^{***}		1.038 (0.007) ^{***}	1.186 (0.063) ^{***}	
LnY _{jt}	0.841 (0.007) ^{***}	0.925 (0.054) ^{***}		0.842 (0.007) ^{***}	0.896 (0.054) ^{***}	
Ln D _{ij}	-1.043 (0.020) ^{***}	-1.352 (0.022) ^{***}	-1.197 (0.024) ^{***}	-1.046 (0.020) ^{***}	-1.358 (0.022) ^{***}	-1.197 (0.024) ^{***}
Cont _{ij}	1.009 (0.089) ^{***}	0.547 (0.092) ^{***}	0.661 (0.086) ^{***}	1.010 (0.089) ^{***}	0.539 (0.092) ^{***}	0.661 (0.086) ^{***}
Lang _{ij}	0.654 (0.043) ^{***}	0.591 (0.043) ^{***}	0.452 (0.042) ^{***}	0.652 (0.043) ^{***}	0.598 (0.043) ^{***}	0.454 (0.042) ^{***}
Colony _{ij}	0.802 (0.094) ^{***}	0.858 (0.092) ^{***}	1.073 (0.090) ^{***}	0.788 (0.093) ^{***}	0.845 (0.092) ^{***}	1.070 (0.090) ^{***}
ComCount _{ij}	2.404 (0.113) ^{***}	2.659 (0.127) ^{***}	2.577 (0.135) ^{***}	2.406 (0.113) ^{***}	2.648 (0.127) ^{***}	2.579 (0.135) ^{***}
Island _{ij}	0.378 (0.107) ^{***}	0.560 (0.097) ^{***}	0.418 (0.097) ^{***}	0.379 (0.107) ^{***}	0.568 (0.097) ^{***}	0.419 (0.097) ^{***}
Landl _{ij}	-0.430 (0.029) ^{***}	-0.653 (0.073) ^{***}	-0.889 (0.055) ^{***}	-0.425 (0.029) ^{***}	-0.658 (0.073) ^{***}	-0.889 (0.055) ^{***}
CReligion _{ij}	-0.264 (0.054) ^{***}	0.423 (0.052) ^{***}	0.371 (0.054) ^{***}	-0.272 (0.054) ^{***}	0.411 (0.052) ^{***}	0.368 (0.054) ^{***}
CU _{ijt}	0.138 (0.131)	-0.053 (0.125)	-0.131 (0.127)	0.138 (0.131)	-0.045 (0.125)	-0.138 (0.127)
RTAPlur _{ijt}	0.880 (0.056) ^{***}	0.594 (0.054) ^{***}	0.914 (0.058) ^{***}	0.878 (0.056) ^{***}	0.596 (0.054) ^{***}	0.913 (0.058) ^{***}
RTABil _{ijt}	0.106 (0.027) ^{***}	0.244 (0.022) ^{***}	0.504 (0.047) ^{***}	0.088 (0.027) ^{***}	0.236 (0.022) ^{***}	0.503 (0.047) ^{***}
EcoGlob _{it}	0.016 (0.001) ^{***}	0.007 (0.001) ^{***}	0.048 (0.002) ^{***}	0.016 (0.001) ^{***}	0.007 (0.001) ^{***}	0.048 (0.002) ^{***}
EcoGlob _{jt}	0.005 (0.001) ^{***}	0.000 (0.001)	0.027 (0.002) ^{***}	0.005 (0.001) ^{***}	-0.001 (0.001)	0.027 (0.002) ^{***}
UTA _{ijt}	0.166 (0.046) ^{***}	0.262 (0.046) ^{***}	0.502 (0.056) ^{***}			
GSP _{ij}				0.118 (0.049) ^{**}	0.225 (0.048) ^{***}	0.503 (0.059) ^{***}
AGO _{ijt}				0.410 (0.364)	-0.273 (0.346)	-0.203 (0.370)
EBA _{ijt}				-0.146 (0.101)	0.030 (0.093)	0.408 (0.111) ^{***}
ACP-EU _{ij}				0.489 (0.089) ^{***}	0.560 (0.082) ^{***}	0.542 (0.088) ^{***}
Time dummies	Yes	Yes	No	Yes	Yes	No
No observat.	74,463	74,463	76,938	74,463	74,463	76,938
Adj-R ²	0.69	0.76	0.71	0.69	0.76	0.71

Notes: Regressand: log of real bilateral exports. Robust standard errors (clustered by country-pairs) are in parentheses.* significant at 10%; ** significant at 5%; *** significant at 1%. The complete list of PTAs and CUs considered appears in Appendix B.

Table 2. OLS and fixed effects estimations of the gravity equation (1). Sample period 1990, 1993, 1996, 1999, 2002, 2005, 2008.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	CFE	CYFE	OLS	CFE	CYFE	CYFE
LnY _{it}	1.037 (0.007)***	1.183 (0.063)***		1.037 (0.007)***	1.183 (0.063)***		
LnY _{jt}	0.839 (0.007)***	0.896 (0.054)***		0.838 (0.007)***	0.896 (0.054)***		
Ln D _{ij}	-1.046 (0.020)***	-1.361 (0.022)***	-1.200 (0.024)***	-1.046 (0.020)***	-1.368 (0.022)***	-1.206 (0.024)***	-1.198 (0.024)***
Cont _{ij}	1.015 (0.089)***	0.531 (0.093)***	0.653 (0.087)***	1.016 (0.089)***	0.515 (0.092)***	0.636 (0.087)***	0.647 (0.089)***
Lang _{ij}	0.652 (0.043)***	0.596 (0.043)***	0.452 (0.042)***	0.647 (0.043)***	0.593 (0.043)***	0.454 (0.042)***	0.410 (0.043)***
Colony _{ij}	0.781 (0.093)***	0.840 (0.092)***	1.058 (0.090)***	0.781 (0.093)***	0.842 (0.092)***	1.058 (0.090)***	1.080 (0.090)***
ComCount _{ij}	2.399 (0.113)***	2.641 (0.127)***	2.569 (0.134)***	2.402 (0.113)***	2.596 (0.127)***	2.522 (0.135)***	2.612 (0.170)***
Island _{ij}	0.397 (0.107)***	0.565 (0.096)***	0.422 (0.097)***	0.398 (0.108)***	0.569 (0.096)***	0.428 (0.097)***	0.394 (0.098)***
Land _{ij}	-0.424 (0.029)***	-0.659 (0.073)***	-0.886 (0.055)***	-0.434 (0.029)***	-0.652 (0.073)***	-0.887 (0.055)***	-0.870 (0.055)***
CReligion _{ij}	-0.280 (0.054)***	0.413 (0.052)***	0.370 (0.054)***	-0.278 (0.054)***	0.411 (0.052)***	0.367 (0.054)***	0.364 (0.055)***
CU _{ijt}	0.126 (0.131)	-0.033 (0.125)	-0.127 (0.127)	0.126 (0.131)	-0.040 (0.125)	-0.121 (0.127)	
RTAP _{lurijt}	0.880 (0.056)***	0.602 (0.054)***	0.922 (0.059)***	0.883 (0.056)***	0.610 (0.054)***	0.917 (0.059)***	
RTA _{bilijt}	0.073 (0.026)***	0.226 (0.021)***	0.476 (0.047)***	0.073 (0.026)***	0.226 (0.021)***	0.476 (0.047)***	0.509 (0.048)***
EcoGlob _{it}	0.016 (0.001)***	0.007 (0.001)***	0.048 (0.002)***	0.016 (0.001)***	0.007 (0.001)***	0.049 (0.002)***	0.047 (0.002)***
EcoGlob _{jt}	0.005 (0.001)***	-0.001 (0.001)	0.027 (0.002)***	0.005 (0.001)***	-0.001 (0.001)	0.027 (0.002)***	0.026 (0.002)***
AGOA _{ijt}	0.415 (0.386)	-0.178 (0.386)	0.116 (0.409)	0.420 (0.366)	-0.173 (0.386)	0.116 (0.409)	0.135 (0.407)
EBA _{ijt}	-0.139 (0.102)	0.062 (0.094)	0.460 (0.113)***	-0.136 (0.102)	0.070 (0.094)	0.459 (0.113)***	0.458 (0.116)***
ACP-EU _{ij}	0.499 (0.089)***	0.595 (0.082)***	0.588 (0.089)***	0.501 (0.089)***	0.606 (0.082)***	0.593 (0.089)***	0.597 (0.091)***
GSPEU _{ij}	0.188 (0.057)***	0.311 (0.056)***	0.628 (0.070)***	0.190 (0.057)***	0.321 (0.056)***	0.635 (0.070)***	0.641 (0.074)***
GSPUS _{ij}	0.883 (0.169)***	0.426 (0.198)**	1.268 (0.235)***	0.887 (0.169)***	0.427 (0.198)***	1.271 (0.234)***	1.265 (0.237)***
GSPOthers _{ij}	-0.053 (0.074)	0.052 (0.085)	0.211 (0.090)**				
GSPAustralia _{ij}				-0.211 (0.352)	-0.278 (0.310)	-0.271 (0.307)	-0.344 (0.310)
GSPCanana _{ij}				-0.045 (0.151)	0.193 (0.176)	0.487 (0.203)**	0.495 (0.203)**
GSPJapan _{ij}				-0.071 (0.180)	0.372 (0.216)*	1.228 (0.236)***	1.211 (0.236)***
GSPNZ _{ij}				-0.064 (0.230)	-0.526 (0.241)**	-0.514 (0.235)**	-0.480 (0.234)**
GSPNorway _{ij}				-0.638 (0.202)***	0.337 (0.230)	0.003 (0.239)	0.010 (0.240)
GSPRussia _{ij}				0.215 (0.215)	0.600 (0.272)**	-0.664 (0.288)**	-0.661 (0.289)**
GSPSwitzerland _{ij}				0.251 (0.166)	0.523 (0.236)**	0.307 (0.219)	0.321 (0.220)
GSPTurkey _{ij}				-0.074 (0.172)	0.087 (0.188)	0.396 (0.211)*	0.394 (0.210)*
Time dummies	Yes	Yes	Yes	Yes	Yes	No	No
No observat.	74,463	74,463	76,938	74,463	74,463	76,938	76,938
Adj-R ²	0.69	0.76	0.71	0.69	0.76	0.71	0.71

Notes: Regressand: log of real bilateral exports. Robust standard errors (clustered by country-pairs) are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The regression reported in column 7 includes individual dummies for all plurilateral PTAs and CUs. The complete list of PTAs and CUs considered appears in Appendix B.

Table 3. HMR two-stage estimation with CYFE. Sample period 1990, 1994, 1998, 2002, 2006.

Variables	HMR two-stage estimation with CYFE	
	(1)	(2)
	Probit coefficient	Marginal effects
		ML
Ln Dist _{ij}	-0.647 (0.017) ^{***}	-1.148 (0.025) ^{***}
Cont _{ij}	0.337 (0.122) ^{***}	0.578 (0.084) ^{***}
Lang _{ij}	0.462 (0.028) ^{***}	0.455 (0.042) ^{***}
Colony _{ij}	1.482 (0.285) ^{***}	0.791 (0.087) ^{***}
ComCount _{ij}	1.189 (0.235) ^{***}	2.356 (0.133) ^{***}
Island _{ij}	0.166 (0.057) ^{***}	0.407 (0.095) ^{***}
Land _{ij}	-0.366 (0.028) ^{***}	-0.877 (0.054) ^{***}
CReligion _{ij}	0.248 (0.039) ^{***}	
CU _{ijt}	0.337 (0.159) ^{**}	0.009 (0.121)
RTAPlur _{ijt}	0.401 (0.059) ^{***}	0.870 (0.058) ^{***}
RTABil _{ijt}	0.418 (0.104) ^{***}	0.306 (0.047) ^{***}
EcoGlob _{it}	0.025 (0.001) ^{***}	0.051 (0.002) ^{***}
EcoGlob _{jt}	0.008 (0.001) ^{***}	0.028 (0.002) ^{***}
AGO _{ijt}	0.755 (0.643)	-0.012 (0.406)
EBA _{ijt}	0.522 (0.083) ^{***}	0.528 (0.114) ^{***}
ACP-EU _{ij}	0.724 (0.055) ^{***}	0.669 (0.092) ^{***}
GSPEU _{ij}	0.840 (0.061) ^{***}	0.565 (0.072) ^{***}
GSPUSA _{ij}	1.596 (0.231) ^{***}	1.003 (0.232) ^{***}
GSPAustralia _{ij}	-0.171 (0.174)	0.165 (0.293)
GSPCanana _{ij}	0.846 (0.164) ^{***}	0.433 (0.197) ^{**}
GSPJapan _{ij}	1.907 (0.146) ^{***}	1.026 (0.238) ^{***}
GSPNZ _{ij}	0.074 (0.125)	-0.515 (0.226) ^{**}
GSPNorway _{ij}	0.752 (0.155) ^{***}	-0.004 (0.235)
GSPRussia _{ij}	0.355 (0.337)	-0.594 (0.284) ^{**}
GSPSwitzerland _{ij}	0.998 (0.167) ^{***}	0.272 (0.219)
GSPTurkey _{ij}	-0.002 (0.151)	0.589 (0.209) ^{***}
ETA		1.193 (0.050) ^{***}
DELTA		0.060 (0.029) ^{***}
No observat.	101,582	76,938
Pseudo-R ²	0.45	

Notes: Robust standard errors (clustered by country-pairs) are in parentheses.* significant at 10%; ** significant at 5%; *** significant at 1%. The complete list of PTAs and CUs considered appears in Appendix B.

Table 3bis. HMR two-stage estimation with CYFE. Sample period 1990, 1994, 1998, 2002, 2006.

Variables	HMR two-stage estimation with CYFE	
	(1)	(2)
	Probit coefficient	Marginal effects
		ML
Ln Dist _{ij}	-0.647 (0.017) ^{***}	-1.147 (0.024) ^{***}
Cont _{ij}	0.337 (0.122) ^{***}	0.560 (0.085) ^{***}
Lang _{ij}	0.462 (0.028) ^{***}	0.424 (0.043) ^{***}
Colony _{ij}	1.482 (0.285) ^{***}	0.797 (0.088) ^{***}
ComCount _{ij}	1.189 (0.235) ^{***}	2.383 (0.136) ^{***}
Island _{ij}	0.166 (0.057) ^{***}	0.414 (0.095) ^{***}
Land _{ij}	-0.366 (0.028) ^{***}	-0.883 (0.054) ^{***}
CReligion _{ij}	0.248 (0.039) ^{***}	0.353 (0.053) ^{***}
CU _{ijt}	0.337 (0.159) ^{**}	
RTAPlur _{ijt}	0.401 (0.059) ^{***}	0.854 (0.058) ^{***}
RTABil _{ijt}	0.418 (0.104) ^{***}	0.329 (0.047) ^{***}
EcoGlob _{it}	0.025 (0.001) ^{***}	0.051 (0.002) ^{***}
EcoGlob _{jt}	0.008 (0.001) ^{***}	0.028 (0.002) ^{***}
AGO _{ijt}	0.755 (0.643)	0.041 (0.403)
EBA _{ijt}	0.522 (0.083) ^{***}	0.576 (0.113) ^{***}
ACP-EU _{ij}	0.724 (0.055) ^{***}	0.679 (0.092) ^{***}
GSPEU _{ij}	0.840 (0.061) ^{***}	0.591 (0.071) ^{***}
GSPUSA _{ij}	1.596 (0.231) ^{***}	1.052 (0.234) ^{***}
GSPAustralia _{ij}	-0.171 (0.174)	-0.137 (0.295)
GSPCanana _{ij}	0.846 (0.164) ^{***}	0.477 (0.196) ^{**}
GSPJapan _{ij}	1.907 (0.146) ^{***}	1.082 (0.239) ^{***}
GSPNZ _{ij}	0.074 (0.125)	-0.475 (0.227) ^{**}
GSPNorway _{ij}	0.752 (0.155) ^{***}	0.029 (0.234)
GSPRussia _{ij}	0.355 (0.337)	-0.590 (0.285) ^{**}
GSPSwitzerland _{ij}	0.998 (0.167) ^{***}	0.308 (0.217)
GSPTurkey _{ij}	-0.002 (0.151)	0.510 (0.210) ^{**}
ETA		1.223 (0.050) ^{***}
DELTA		0.034 (0.029) ^{***}
No observat.	101,582	76,938
Pseudo-R ²	0.45	

Notes: Robust standard errors (clustered by country-pairs) are in parentheses.* significant at 10%; ** significant at 5%; *** significant at 1%. The complete list of PTAs and CUs considered appears in Appendix B.

Appendix A

Table A1: Sample of countries.

Albania	Dominica	Lebanon	Senegal
Algeria	Dominican Republic	Lesotho	Serbia and Montenegro
Angola	Ecuador	Liberia	Seychelles
Antigua and Barbuda	Egypt	Libya	Sierra Leone
Argentina	El Salvador	Lithuania	Singapore
Armenia	Equatorial Guinea	Macedonia	Slovak Republic
Australia	Eritrea	Madagascar	Slovenia
Austria	Estonia	Malawi	Solomon Islands
Azerbaijan	Ethiopia	Malaysia	Somalia
Bahamas	Fiji	Maldives	South Africa
Bahrain	Finland	Mali	Spain
Bangladesh	France	Malta	Sri Lanka
Barbados	French Polynesia	Mauritania	St. Kitts and Nevis
Belarus	Gabon	Mauritius	Sta. Lucia
Belgium-Luxembourg	Gambia	Mexico	St. Tome and Principe
Benin	Georgia	Moldova	St. Vincent and Gr.
Bermudas	Germany	Mongolia	Sudan
Bhutan	Ghana	Morocco	Suriname
Bolivia	Greece	Mozambique	Swaziland
Bosnia and Herzegovina	Grenada	Myanmar	Sweden
Botswana	Guatemala	Namibia	Switzerland
Brazil	Guinea	Nepal	Syria
Bulgaria	Guinea Bissau	Netherlands	Tajikistan
Burkina Faso	Guyana	Netherlands Antilles	Tanzania
Burundi	Haiti	New Caledonia	Thailand
Cambodia	Honduras	New Zealand	Togo
Cameroon	Hungary	Nicaragua	Tonga
Canada	Iceland	Niger	Trinidad and Tobago
Cape Verde	India	Nigeria	Tunisia
Central African Republic	Indonesia	Norway	Turkey
Chad	Iran	Oman	Turkmenistan
Chile	Iraq	Pakistan	Uganda
China - Mainland	Ireland	Panama	Ukraine
China – Hong Kong	Israel	Papua New Guinea	United Arab Emirates
China – Macao	Italy	Paraguay	United Kingdom
Colombia	Jamaica	Peru	United States of America
Comoros	Japan	Philippines	Uruguay
Congo, D.R.	Jordan	Poland	Uzbekistan
Congo, Republic of	Kazakhstan	Portugal	Vanuatu
Costa Rica	Kenya	Qatar	Venezuela
Croatia	Kiribati	Reunion	Vietnam
Cyprus	Korea	Romania	Yemen
Czech Republic	Kuwait	Russia	Zambia
Côte d'Ivoire	Kyrgyz Republic	Rwanda	Zimbabwe
Denmark	Laos	Samoa	
Djibouti	Latvia	Saudi Arabia	

Appendix B

Table B1: Plurilateral Preferential Trade Agreements

Abbreviation	Name of PTA	Stars/ends	Member countries
AGADIR	Agadir Agreement	2005	Egypt, Jordan, Morocco, Tunisia.
AMU	Arab Maghreb Union	1989	Algeria, Libya, Mauritania, Morocco, Tunisia.
ANZERTA	Australia-New Zealand Closer Economic Relations Trade Agreement	1983	Australia and New Zealand.
ASEAN	Association of South East Asian Nations	1992	Brunei, Cambodia (joined 1999), Indonesia, Laos (joined 1997) Myanmar (joined 1997) Malaysia, Philippines, Singapore, Vietnam (joined 1995), Thailand.
BANGKOK_AG	Agreement (Formely Known) Asia Pacific Trade Agreement (APTA)	1976	Bangladesh, India, Laos, China (joined 2002), South Korea, Sri Lanka.
CAN	Andean Community	1969	Bolivia, Chile (left 1976), Colombia, Ecuador, Peru, Venezuela (1973-2005).
CAN_Mercosur	Andean Community - Mercosur	2004	
CARIFTA	Caribbean Free Trade Agreement	1968	Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago.
CARICOM	Caribbean Community and Common Market	1973	Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Haiti (suspended 2004-2006), Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago.
CAFTA-DR	Central American Free Trade Agreement	2006	Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, US.
CACM	Central American Common Market	1961	Costa Rica (joined in 1966), Guatemala, El Salvador, Honduras (joined in 1966), Nicaragua.
CACM2	Central American Common Market	1990	Costa Rica, Guatemala, El Salvador, Honduras, Nicaragua.
CBI	Cross Border Initiative	1993	Burundi, Comoros, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Namibia, Reunion, Rwanda, Swaziland, South Africa (in observer status),

			Tanzania, Uganda, Zambia, Zimbabwe.
CIS	Commonwealth of Independent States	1994	Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyz Rep., Moldova, Russia, Tajikistan, Turkmenistan (left 2005), Uzbekistan (joined 2000), Ukraine.
COMESA	Common Market for Eastern and Southern Africa	1983	Angola, Burundi, Comoros, Congo Dem. Rep., Djibouti, Egypt(joined 1999), Eritrea Ethiopia, Kenya, Lesotho (left 1997), Libya (joined 2005), Madagascar, Malawi, Mauritius, Mozambique(left 1997), Namibia (left 2004), Rwanda, Seychelles (joined 2001), Sudan, Swaziland, Tanzania (left 2000), Uganda, Zambia, Zimbabwe.
CUSFTA/ NAFTA	Canada-US FTA/ North American Free Trade Agreement	1989/ 1994	Canada, US/ Canada, Mexico, US.
EAC	East African Community	2000	Kenya, Tanzania, Uganda.
EAEC	Eurasian Economic Community	1997	Belarus, Kazakhstan, Kyrgyz Rep., Russia, Tajikistan, Uzbekistan (joined 2006).
ECCAS	Economic Community of Central African States	1992	Burundi, Congo Dem. Rep., Cameroon, Central African Republic, Chad, Rep. of the Congo, Equatorial Guinea, Gabon, Rwanda, Sao Tome and Principe.
ECOWAS	Economic Community of West African States	1975	Benin, Burkina Faso, Cape Verde, Cotê d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, (Mauritania (left in 2000), Nigeria, Senegal, Sierra Leone, Togo.
EFTA	European Free Trade Association	1960	Austria, Denmark, Norway, Portugal, Sweden, Switzerland, UK, Iceland (joined 1970), Denmark (left 1972), UK (left 1972), Portugal (left 1985), Finland (joined 1986), Austria (left 1995), Finland (left 1995), Sweden (left 1995).
EU	European Union	1958	Belgium, France, Germany, Italy, Luxembourg, and Netherlands, Denmark (joined 1973), Ireland (joined 1973), UK (joined 1973), Greece (joined 1981), Portugal (joined 1986) and Spain (joined 1986), Austria (joined 1995), Finland (joined 1995), Sweden (joined 1995), Cyprus (joined 2004), Czech Republic (joined 2004), Estonia (joined 2004), Latvia (joined 2004), Lithuania (joined 2004), Hungary (joined 2004), Malta (joined 2004), Poland (joined 2004), Slovakia (joined

			2004), Slovenia (joined 2004).
EUEFTA / EEA	EU-EFTA Free Trade Agreement/ European Economic Area	1973/ 1994	Varies by countries. Varies by countries.
GAFTA	Great Arab Free Trade Area	1998	Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen
GCC	Gulf Cooperation Council	1981	Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates
GROUPOF3	Group of Three	1995	Colombia, Mexico, Venezuela.
MELANESIAN (MSG)	Melanesian Spearhead Group	1994	Fiji, Papua New Guinea, Solomon Islands, Vanuatu.
MERCOSUR	Mercado Común del Sur	1991	Argentina, Brasil, Paraguay, Uruguay.
MRU	Mano River Union	1977	Sierra Leone, Liberia and Guinea (joined 1981).
NT	Northern Triangle	2001	El Salvador, Guatemala, Honduras.
PATCRA	Australia-Papua New Guinea	1977	
SACU	South African Customs Union	1970	Botswana, Lesotho, Namibia, South Africa, Swaziland.
SADC	Southern African Development Community	1980	Angola, Botswana, Congo Dem. Rep.(joined 1998), Lesotho, Madagascar (joined 2006), Malawi, Mauritius (joined 1996), Mozambique, Namibia (joined 1990), Seychelles, South Africa (joined (1995), Swaziland, Tanzania, Zambia, Zimbabwe.
SAFTA	SAFTA	1996	Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka.
UDEAC	Union Douanière et Économique de l'Afrique Centrale	1966-1998	Cameroon, Central African Rep., Chad, Congo, Equatorial Guinea, Gabon.

Note: Countries listed in agreements only include those in our sample of 182 countries listed in Table A1.

Table B2. Bilateral Preferential Trade Agreements

Albania-Bosnia and Herzegovina (2004)	Croatia-FYROM (2002)	Guatemala-Mexico (2001)
Albania-Croatia (2003)	Croatia-Moldova (2004)	Guatemala-Panama (1975)
Albania-FYROM (2004)	Croatia-Turkey (2003)	Honduras-Mexico (2001)
Albania-Moldova (2004)	Czech Rep-Turkey (1998)	Hungary-Israel (1996)
Albania-Serbia Montenegro (2004)	Czech-Israel (1996)	Hungary-Turkey (1998)
Armenia-Canada (1997)	Dom. Rep.-Panama (1987)	India-Nepal (1991)
Armenia-Cyprus (1996)	EFTA-Chile (2004)	India-Singapore (2005)
Armenia-Estonia (2002)	EFTA-Croatia (2002)	India-Sri Lanka (2001)
Armenia-Georgia (1998)	EFTA-FYROM (2002)	India-Thailand (2004)
Armenia-Iran (1997)	EFTA-Israel (1993)	Israel-Mexico (2000)
Armenia-Kazakhstan (2002)	EFTA-Jordan (2002)	Israel-Poland (1997)
Armenia-Kyrgyz Rep. (1995)	EFTA-Mexico (2001)	Israel-Romania (2001)
Armenia-Moldova (1995)	EFTA-Morocco (1999)	Israel-Slovak Rep (1996)
Armenia-Russia (1993)	EFTA-Singapore (2003)	Israel-Slovenia (1997)
Armenia-Switzerland (2000)	EFTA-Tunisia (2005)	Israel-Turkey (1997)
Armenia-Turkmenistan (1996)	EFTA-Turkey (1992)	Israel-US (1985)
Armenia-Ukraine (1996)	Egypt-Libya (1990)	Japan-Mexico (2005)
ASEAN-China (2003)	Egypt-Morocco (1999)	Japan-Singapore (2002)
Australia-Singapore (2003)	Egypt-Tunisia (1998)	Jordan-Morocco (1998)
Australia-Thailand TAFTA (2005)	El Salvador-Mexico (2001)	Jordan-Singapore (2005)
Australia-US (2005)	Estonia-Turkey (1998)	Jordan-Syria (2001)
Azerbaijan-Georgia (1996)	EU-Algeria (2005)	Jordan-US (2001)
Bangladesh-India (1980)	EU-Bulgaria (1995)	Kazakhstan-Kyrgyz Rep. (1995)
Bhutan-India (2005)	EU-Chile (2003)	Korea-Singapore (2006)
Bolivia-Mexico (1995)	EU-Croatia (2002)	Kuwait-Jordan (2001)
Bosnia Herzegovina-Bulgaria (2004)	EU-Czech Rep (1995)	Kyrgyz Rep.- Russia (1993)
Bosnia Herzegovina-Croatia (2005)	EU-Egypt (2004)	Kyrgyz Rep.-Moldova (1996)
Bosnia Herzegovina-FYROM (2002)	EU-Estonia (1995)	Kyrgyz Rep.-Ukraine (1998)
Bosnia Herzegovina-Moldova (2004)	EU-FYROM (2001)	Kyrgyz Rep.-Uzbekistan (1998)
Bosnia Herzegovina-Romania (2004)	EU-Hungary (1994)	Laos-Thailand (1991)
Bosnia Herz.-Serbia Montenegro (2002)	EU-Israel (2000)	Latvia-Turkey (2000)
Bosnia Herzegovina-Turkey (2003)	EU-Jordan (2002)	Lithuania-Turkey (1998)
Bulgaria-FYROM (2000)	EU-Latvia (1995)	Mercosur-Bolivia (1997)
Bulgaria-Israel (2002)	EU-Lebanon (2003)	Mercosur-Chile (1996)
Bulgaria-Moldova (2005)	EU-Lithuania (1995)	Mercosur-India (2004)
Bulgaria-Serbia Montenegro (2003)	EU-Mexico (2000)	Mercosur-SACU (2002)
CACM-Chile (1999)	EU-Moldova (1998)	Mexico-Nicaragua (1998)
Canada-Chile (1997)	EU-Morocco (2000)	Mexico-Uruguay (2004)
Canada-Costa Rica (2002)	EU-Poland (1994)	Moldova-Rumania (1994)
Canada-Israel (1997)	EU-Romania (1995)	Moldova-Serbia Montenegro (2004)
CARICOM-Colombia (1994)	EU-Slovakia (1995)	Morocco-Tunisia (1999)
CARICOM-Costa Rica (2004)	EU-Slovenia (1999)	Morocco-US (2006)
CARICOM-Dominican Republic (1998)	EU-South Africa (2000)	New Zealand-Singapore (2001)
CARICOM-Venezuela (1993)	EU-Syria (1977)	New Zealand-Thailand (2005)
Chile-Costa Rica (2002)	EU-Tunisia (1998)	Northern Triangle-Mexico(2001)
Chile-El Salvador (2002)	EU-Turkey (1963)	Pakistan-Sri Lanka (2005)
Chile-Korea (2004)	FYROM-Moldova (2005)	Poland-Turkey (2000)
Chile-Mexico (1998)	FYROM-Romania (2004)	Romania-Turkey (1998)
Chile-US (2004)	FYROM-Turkey (2000)	Singapore-US (2004)
China-Hong Kong (2004)	Georgia-Kazakhstan (1999)	Slovak Rep.-Turkey (1998)
China-Macao (2004)	Georgia-Russia (1994)	Slovenia-Turkey (2000)
Colombia-Costa Rica (1985)	Georgia-Turkmenistan (2000)	South Africa-US (2000)
Costa Rica-Mexico (1995)	Georgia-Ukraine (1996)	Tunisia-Turkey (2005)

Note: The date they entered into force appears in parentheses.

Table B3. Currency Unions

Multilateral CUs			
Abbreviation	Name of CU	Stars/ends	Member countries
EURO	European Monetary Union	1999	Austria, Belgium-Luxembourg, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Greece (joined 2001).
WAEMU/UEMOA	West African Economic and Monetary Union	1962	Benin (joined 1984), Burkina Faso, Cotê d'Ivoire, Guinea-Bissau (joined 1996), Mali, Niger, Senegal, Mauritania (left 1995), Togo (joined 1996).
CEMAC/CAEMC (former UDEAC)	Economic and Monetary Union of Central Africa	1999	Cameroon, Central African Republic, Chad (left 1967, joined again 1984), Rep. of the Congo, Equatorial Guinea (joined 1984) and Gabon.
CMA	Common Monetary Area	1960	Bostwana (left 1973), Lesotho, Namibia, Swaziland, South Africa.
EASTCARIBEAN	East Caribbean Dollar	1965	Antigua and Barbuda, Barbados (left 1974), Dominica, Grenada, Guyana (left 1972), St. Kitts and Nevis, Sta. Lucia, St. Vincent, Trinidad and Tobago (left 1976).
Bilateral CUs			
Abbreviation		Stars/ends	Member countries
ARU_NA		1960-1993	Aruba and Netherland Antilles
ARG_US		1992-2001	Argentina and United States
AUL_KIR		1980	Australia and Kiribati
AUL_TON		1960-1990	Australia and Tonga
AUL_SOL		1978	Australia and Solomon Islands
BAH_US		1966	Bahamas and United States
BER_US		1970	Bermuda and United States
ECU_US		2001	Ecuador and United States
HK_US		1984	Hong Kong and United States
IND_BHU		1991	India and Bhutan
PAN_US		1904	Panama and United States
QAT_UAE		1981	Qatar and United Arab Emirates

Appendix C

Table C1a: List of developing countries beneficiaries of AGOA, EBA, ACP-EU GSPUS and GSPEU.

AGOA (starts-ends)	EBA	ACP-EU	GSP US	GSP EU
Angola (2004)	Angola	Antigua and Barbuda	Albania	Algeria
Benin (2001)	Bangladesh	Bahamas	Algeria	Argentina
Botswana(2001)	Benin	Barbados	Argentina	Armenia
Burkina Faso (2005)	Bhutan	Botswana	Armenia	Azerbaijan
Burundi (2006)	Burkina Faso	Cameroon	Bangladesh	Bahrain
Cameroon (2001)	Burundi	Congo Rep.	Bhutan	Belarus
Cape Verde (2001)	Cambodia	Cote d'Ivoire	Bolivia	Bermuda
Central African Rep. (2001-2003)	Cape Verde	Dominican Republic	Bosnia-Herzegovina	Bolivia
Chad (2001)	Central African Rep.	Fiji	Brazil	Brazil
Comoros (2008)	Chad	Gabon	Cambodia	Chile
Congo Republic of (2001)	Comoros	Ghana	Colombia	China-Macao
Congo D. R. (2003)	Congo D.R.	Grenada	Comoros	Colombia
Cotê d'Ivoire (2002-2004)	Djibouti	Guyana	Costa Rica	Costa Rica
Djibouti (2001)	Equatorial Guinea	Jamaica	Croatia	Cyprus
Ethiopia(2001)	Eritrea	Kenya	Dominica	Ecuador
Eritrea (2001-2003)	Ethiopia	Mauritius	Dominican Republic	Egypt
Gabon (2001)	Gambia	Namibia	Ecuador	El Salvador
Gambia (2003)	Guinea Bissau	Nigeria	Egypt	French Polynesia
Ghana (2001)	Guinea	Papua New Guinea	Equatorial Guinea	Georgia
Guinea (2001)	Haiti	Seychelles	Fiji	Guatemala
Guinea Bissau(2001)	Kiribati	San Kitts and Nevis	Georgia	Honduras
Kenya (2001)	Lao	St. Lucia	Grenada	India
Lesotho (2001)	Lesotho	St. Vincent	Guyana	Indonesia
Liberia (2007)	Liberia	Suriname	India	Iran
Madagascar (2001)	Madagascar	Swaziland	Indonesia	Iraq
Malawi (2001)	Malawi	Tonga	Iraq	Jordan
Mali (2001)	Maldives	Trinidad and Tobago	Jamaica	Kazakhstan
Mauritania (join 2001, left 2006, join 2007)	Mali	Zimbabwe	Jordan	Kuwait
Mauritius (2001)	Mauritania		Kazakhstan	Kyrgyz
Mozambique (2001)	Mozambique		Kiribati	Lebanon
Namibia (2001)	Myanmar		Kyrgyz	Libya
Niger (2001)	Nepal		Lebanon	Malaysia
Nigeria (2001)	Niger		Macedonia	Mexico
Rwanda (2001)	Rwanda		Moldova	Moldova
Sao Tome (2001)	Samoa		Mongolia	Mongolia
Senegal (2001)	Sao Tome		Nepal	Morocco
Seychelles (2001)	Senegal		Oman	New Caledonia
Sierra Leone (2001)	Sierra Leone		Pakistan	Nicaragua
South Africa (2001)	Solomon Islands		Panama	Netherlands Antilles
Swaziland (2001)	Somalia		Paraguay	Oman
Tanzania (2001)	Sudan		Peru	Pakistan
Togo (2008)	Tanzania		Russia	Panama
Uganda (2001)	Togo		Samoa	Paraguay
Zambia (2001)	Uganda		Serbia y Montenegro	Peru
	Vanuatu		Solomon Islands	Philippines
	Yemen		Somalia	Qatar
	Zambia		Sri Lanka	Russia
			St. Kitts and Nevis	Saudi Arabia
			St. Lucia	South Africa
			St. Vincent	Sri Lanka
			Suriname	Syrian Arab Republic
			Thailand	Tajikistan
			Togo	Thailand
			Tonga	Tunisia
			Trinidad and Tobago	Turkmenistan
			Tunisia	United Arab Emirates
			Ukraine	Ukraine
			Uruguay	Uruguay
			Uzbekistan	Uzbekistan
			Vanuatu	Venezuela
			Venezuela	Vietnam
			Yemen	
			Zimbabwe	

Note: The list of beneficiaries of ACP-EU, GSP_EU and GSP_US are taken from United Nations Conference on Trade and Development (2008)

Table C1b:

Angola (2004)	Angola	Antigua and Barbuda	Albania	Algeria
Benin (2001)	Bangladesh	Bahamas	Algeria	Argentina
Botswana(2001)	Benin	Barbados	Argentina	Armenia
Burkina Faso (2005)	Bhutan	Botswana	Armenia	Azerbaijan
Burundi (2006)	Burkina Faso	Cameroon	Bangladesh	Bahrain
Cameroon (2001)	Burundi	Congo Rep.	Bhutan	Belarus
Cape Verde (2001)	Cambodia	Cote d'Ivoire	Bolivia	Bermuda
Central African Rep. (2001-2003)	Cape Verde	Dominican Republic	Bosnia-Herzegovina	Bolivia
Chad (2001)	Central African Rep.	Fiji	Brazil	Brazil
Comoros (2008)	Chad	Gabon	Cambodia	Chile
Congo Republic of (2001)	Comoros	Ghana	Colombia	China-Macao
Congo D. R. (2003)	Congo D.R.	Grenada	Comoros	Colombia
Cotê d'Ivoire (2002-2004)	Djibouti	Guyana	Costa Rica	Costa Rica
Djibouti (2001)	Equatorial Guinea	Jamaica	Croatia	Cyprus
Ethiopia(2001)	Eritrea	Kenya	Dominica	Ecuador
Eritrea (2001-2003)	Ethiopia	Mauritius	Dominican Republic	Egypt
Gabon (2001)	Gambia	Namibia	Ecuador	El Salvador
Gambia (2003)	Guinea Bissau	Nigeria	Egypt	French Polynesia
Ghana (2001)	Guinea	Papua New Guinea	Equatorial Guinea	Georgia
Guinea (2001)	Haiti	Seychelles	Fiji	Guatemala
Guinea Bissau(2001)	Kiribati	San Kitts and Nevis	Georgia	Honduras
Kenya (2001)	Lao	St. Lucia	Grenada	India
Lesotho (2001)	Lesotho	St. Vincent	Guyana	Indonesia
Liberia (2007)	Liberia	Suriname	India	Iran
Madagascar (2001)	Madagascar	Swaziland	Indonesia	Iraq
Malawi (2001)	Malawi	Tonga	Iraq	Jordan
Mali (2001)	Maldives	Trinidad and Tobago	Jamaica	Kazakhstan
Mauritania (join 2001, left 2006, join 2007)	Mali	Zimbabwe	Jordan	Kuwait
Mauritius (2001)	Mauritania		Kazakhstan	Kyrgyz
Mozambique (2001)	Mozambique		Kiribati	Lebanon
Namibia (2001)	Myanmar		Kyrgyz	Libya
Niger (2001)	Nepal		Lebanon	Malaysia
Nigeria (2001)	Niger		Macedonia	Mexico
Rwanda (2001)	Rwanda		Moldova	Moldova
Sao Tome (2001)	Samoa		Mongolia	Mongolia
Senegal (2001)	Sao Tome		Nepal	Morocco
Seychelles (2001)	Senegal		Oman	New Caledonia
Sierra Leone (2001)	Sierra Leone		Pakistan	Nicaragua
South Africa (2001)	Solomon Islands		Panama	Netherlands Antilles
Swaziland (2001)	Somalia		Paraguay	Oman
Tanzania (2001)	Sudan		Peru	Pakistan
Togo (2008)	Tanzania		Russia	Panama
Uganda (2001)	Togo		Samoa	Paraguay
Zambia (2001)	Uganda		Serbia y Montenegro	Peru
	Vanuatu		Solomon Islands	Philippines
	Yemen		Somalia	Qatar
	Zambia		Sri Lanka	Russia
			St. Kitts and Nevis	Saudi Arabia
			St. Lucia	South Africa
			St. Vincent	Sri Lanka
			Suriname	Syrian Arab Republic
			Thailand	Tajikistan
			Togo	Thailand
			Tonga	Tunisia
			Trinidad and Tobago	Turkmenistan
			Tunisia	United Arab Emirates
			Ukraine	Ukraine
			Uruguay	Uruguay
			Uzbekistan	Uzbekistan
			Vanuatu	Venezuela
			Venezuela	Vietnam
			Yemen	
			Zimbabwe	

Note: The list of beneficiaries are taken from United Nations Conference on Trade and Development (2008)

