# Small Flows, Compliance Costs and Trade Preferences:
# The Case of EU Imports from African LDCs

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**Abstract**  Previous work has shown that a significant number of preference eligible goods are imported into the EU from developing countries at relatively small values and that the rate of preference utilisation of these imports are low and in many cases zero. This fact is unobserved in the aggregate figures because large flows have high utilisation rates, thereby pushing up the average preference utilisation rate. This paper examines this phenomenon further by using monthly data on EU imports from African LDCs at the lowest level of (publicly) available aggregation thereby coming close to transaction level data. It identifies the average value of preference eligible imports, utilising and not utilising preferences, by country and product category and test their empirical relevance for explaining the African LDCs' preference utilisation rates.

# 1    Introduction

The EU grants preferential access to its market through various free trade agreements (FTAs) and special programmes for developing countries such as the Generalised System of Preferences (GSP). The value and use of these arrangements have been debated off and on for a number of years in various contexts.

Some have argued that the schemes have been ineffective in delivering improved access to the EU market because of too strict rules of origin (RoO) (Brenton, 2003; Brenton and Manchin, 2003, Inama, 2004) and have failed to generate significant trade flows (Brenton and Ikezuki, 2004). Others have computed preferential margin threshold values under which exporters have no incentives to ask for preferences since the costs of obtaining these exceed their benefits (Francois et al (2006), Manchin (2006) and Agostino et al. (2010)).

On the other hand, Persson and Wilhelmsson (2007) found that certain EU preference arrangements have had large effects, in particular the schemes for the ACP countries as did Nilsson (2002). Nilsson and Matsson (2008) concluded that EU trade preferences are important and account for the lion's share of exports from various developing country groupings, including for products for which the preferential margin is relatively low. The results of CARIS (2010) go in the same direction and show that the EU's standard GSP scheme, which provides for a preferential margin of 3.5 percentage points, is in most cases well used.

Nilsson (2011a) showed that preference utilisation rates (defined as the ratio of the value of preferential imports to the value of preference eligible imports) for small trade flows are markedly lower than average utilisation rates. In 2008, more than 90% of the preferential import flows (at 8-digit level) represented together about 10% of the value of EU preferential imports from developing countries.[1] The preference utilization rates of these flows were found to be low. Preferential import flows of less than €10000 were associated with a preference utilisation rate of 1%.

Nilsson (2011b) further examined the issue and demonstrated empirically that EU preference utilisation rates decrease with lower values of preferential imports.

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[1] A preferential import flow is defined as the value of a product preferentially imported into the EU at the 8-digit level from a certain preference beneficiary in a specific year.

On average, evaluated at the mean, he found that a 1% increase in the value of preferential imports is expected to increase the preference utilisation rate by 20% with varying impact between country- and product groups.

This rebuts arguments claiming that the cost of obtaining an RoO certificate is an obstacle to developing country exports as small trade flows – less than €6000 – *do not need* a certificate of origin to enter the EU market under preferences; submitting the invoice is enough. We should rather observe higher rates of preference utilisation for smaller trade flows if RoO are to too strict.

But the result does indicate that there is a fixed cost associated with utilising preferences. It seems profitable to utilise preferences only if the potential value of preference eligible imports is higher than the cost associated with obtaining the preferences. Hence, when analysing the impact of preferential trading schemes, both the preferential margin and the costs to make use of the preferences need to be taken into account.

The preferential margin as an indicator of the cost associated with using preferences can, however, only represent variable cost. If fixed costs are non-negligible, ignoring them would result in an upward bias of the variable cost estimator. Using this cost argument, we attempt to explain the extent to which the potential value of preferences reflects the (foregone) benefits of (not) using preferences.

The paper is structured as follows. The next section defines and discusses some key concepts and data issues, while Section 3 examines the structure of EU preferential imports from African least developed countries (LDCs).[2] Section 4 presents the model used to empirically test the relationship between preference utilisation and the potential value of preferences *(*and other explanatory variables) and discusses the subsequent results. Section 5 summarizes and concludes.

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[2] A list of the African LDCs is provided in Annex Table A8.

## 2        Concepts and Data Issues

### 2.1        The Concept of Potential Value of Preferences

Nilsson's (2011b) findings provide evidence for non-negligible fixed costs associated with using preferences. This suggests that exporters have to exceed a certain export value for them to be profitable to use preferences. Using preferences thus incurs a certain fixed cost. The importance of the preference margin for the decision to use preferences thus decreases in importance as the value of exports increases.[3] To capture this, we introduce the *potential value of preferences (PVOP)* as an approximation of compliance costs.

The PVOP is defined as the product of the (euro) value of monthly preference eligible exports ($X_e$) multiplied by the preference margin ($m$), which is defined as the most favoured nation (MFN) tariffs since all exports from LDCs face zero tariffs on the EU market:

$$PVOP = X_e * m \tag{1}$$

Preferences are only expected to be used if the PVOP is higher than the cost associated with utilising the preferences. The cost is expected to differ across products and countries, due to different RoO, different administrative and customs procedures and red tape.

Information on preference eligibility comes from Eurostat (COMEXT),[4] which matches information on the tariff treatment a product from a certain origin at a specific point in time is eligible for with trade data, see Nilsson (2011c). This dataset can further be used to calculate preferences utilisation rates (PURs) which are defined as the value of imports using preferences divided by the value of imports eligible for preferences.

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[3] Earlier research also acknowledges the existence of fixed costs, but does not appropriately account for them when estimating compliance costs (cf. Manchin, 2006, p.1252; Carrère and de Melo, 2004, p.14). Agostino et al. (2010) find that the impact of the same preferential margin on imports depends on the cost of compliance the imports are associated with.

[4] COMEXT is the Eurostat reference database for external trade. See
http://epp.eurostat.ec.europa.eu/portal/page/portal/international_trade/data/database

## 2.2    Data Issues

Nilsson (2011b) used yearly data and his sample did thus not reflect imports at transaction level. At transaction level, each individual import flow must have a preference utilisation rate of either 0% or 100% since preferences can not apply to a share of a product imported. A preference utilisation rate of between 0% and 100% thus tells us that the registered import flow necessarily consists of more than one transaction where one of the transactions use preferences and the other one does not. However, one should note that the opposite does not hold true. A preference utilisation rate of either 0% or 100% could still imply that more than one transaction is recorded but that all transactions either utilise preferences or not.

Though low utilisation rates of preferences of small trade flows feature in all developing countries, this ought to be a more serious problem for exporters from small and poor developing countries compared to larger and more advanced developing countries. The former export less, have fewer exporters and may therefore also be less informed about the existence of preferences. We therefore examine this phenomenon further using detailed data on EU imports from the African LDCs.

Our sample consists of monthly data for 2010 from COMEXT on EU imports of dutiable products (products associated with a non-zero MFN tariff) from the 34 African LDCs at the 8-digit level of the Combined Nomenclature (CN).[5] These imports are eligible for duty-free entry on the EU market under either the Everything but Arms (EBA) initiative or the (initialled) Economic Partnership Agreements. All EU imports from the African LDCs are thus eligible for preferences.

The vast majority of the observations in our sample have utilisation rates of either 0% or 100%. Only 9% of the observations have utilisation rates in-between. We choose to ignore these 9% of the observations in an attempt to come as close as possible to transaction level data in our analysis thereby gaining a better understanding of why some import flows benefit from preferences and others do not.

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[5] The CN is comprised of the Harmonized System (HS) nomenclature with further subdivisions.

# 3    Descriptive Analysis of EU Preferential Imports from the African LDCs

## 3.1    Descriptive Analysis by Country

Annex Table A1 provides some basic indicators associated with the utilisation rate of EU imports from the African LDCs. It shows that, overall, preferences are well utilised with a preference utilisation rate close to 95% for all countries taken together. The figure hides a substantial variation between the countries. Eleven countries (Mozambique, Uganda, Malawi, Mauritania, Tanzania, Madagascar, The Gambia, Senegal, Zambia and Comoros) have a preference utilisation rate above 97%, while Chad, Somalia and Djibouti practically do not utilise preferences at all.

Column 2 shows the count of EU import flows (the number of 8-digit products imported into the EU from the preference beneficiaries in the sample in a specific month (aggregated to 2010 in the Annex Tables)) not using preferences. Column 3 indicates how large this count is in proportion to the total number of flows. For example, the preference utilisation rate of Mozambique is 99.9%, but still, almost half of all import flows from Mozambique does not utilise preferences. Similarly, Angola with a preference utilisation rate of 76% is made up of a few flows only since 98% of EU import flows from the country does not utilise preferences. On the other hand, only 15% of the number of EU import flows from Guinea-Bissau does not utilise preferences, but the country's preference utilisation rate is still not higher than some 40%.

Column 4 shows that the average PVOP for preference eligible import flows not utilising preferences is €1100 while the average PVOP for import flows utilising preferences is significantly higher at €16600. These aggregate figures hide a significant difference between the African LDCs. The average PVOP figures for import flows not utilising preferences show that 30 countries have an average PVOP of €1000 or less, four countries display figures between €1000 and €5000, while only Sudan sticks out with an average PVOP of close to €28000 for preference eligible imports into the EU not using preferences.

The average PVOP of import flows utilising preferences ranges from €163000 in the case of Mozambique to as little as €100 for Djibouti and Guinea-Bissau. For 18 of the countries, the average PVOP is less than €5000, but 17 countries show

PVOPs at least five times higher than the average PVOP for preference eligible import flows not using preferences. Hence, higher PVOPs are associated with preference utilisation.

Finally, column 6 shows that the countries with the highest shares of preference eligible imports into the EU (Mozambique, Madagascar, Senegal and Tanzania) all show high rates of preference utilisation (as do some "low share" countries), while there seems to be no particular relationship between the average preferential margin and the preference utilisation rates of the countries. For example, Burundi's rather high preferential margin of 9.2% returns a preference utilisation rate of 55%, while Benin's preferential margin of 6% is associated with a preference utilisation rate of 93.4%.

## 3.2   Analysis by Product Group

Annex Table A2 contains the same information as Annex Table A1 applied to the sections of the *Tarif Douanier Commun* (TDC).[6] The preference utilisation rate is above 95% in eight TDC sections and another two sections have preference utilisation rates above 80%. However, the preference utilisation rates in TDC sections XVI (Machinery and elect. equip), XVII (Transport equip, aircraft, ship) and XVIII (Optic photo cine precision instr.) are at about 5% or below.

The preference utilisation rates of the latter three sections are associated with high shares of flows not utilising preferences, see column 3. However, this is also the case for TDC XV (Iron and steel) which matches a preference utilisation rate of 99.6% with a share of import flows not using preferences of 76.7%. In case of the latter, this points to a great many small import flows not using preferences in this section with a few large import flows pushing up the overall preference utilisation rate.

This is confirmed in column 5, which shows that the average PVOP in TDC XV (Iron and steel) for import flows using preferences is highest among all TDC sections at approximately €181000. One may note relatively high PVOPs for import flows utilising preferences also in TDC sections I (Live animal and animal

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[6] The correspondence between the TDC Sections and the HS Chapters is provided in Annex Table A9.

products) III (Fats and oils) and IV (Prepared foodstuffs, beverages and tobacco) in parallel with high rates of preference utilisation in this sections.

In case of the latter TDC section, there is a relatively high PVOP also for import flows not using preferences. The same holds for TDC section IX (Wood and wood products), which together with TDC XIV (Pearls and precious stones) and TDC XVI (Machinery and elect. equip.) are the only TDC sections with a higher average PVOP for preference eligible import flows not utilising preferences compared to the average PVOP for preference eligible import flows utilising preference. This result could be caused by aggregation of the PVOP from 8-digit level to TDC section level. In order to examine this issue further, one would need to analyse which products are exported under preferences and which are not at the 8-digit level and relate this to the preferential margin.

Reflecting the result at country level, TDC sections representing a high share of preference eligible EU imports (see column 6) are associated with high preference utilisation rates (TDC sections I, IV and XV). Compared to the country level figures, a higher average preferential margin seems to be somewhat more closely linked to a higher preference utilisation rate. For example, the four TDC sections with highest preferential margins (I, II, IV and X) all display preference utilisation rates of 95% or more.

## 3.3  Analysis by Country and Product Group

Annex Table A3 merges the information about the preference utilisation rates from Annex Tables A1 and A2, and presents preference utilisation rates by country and TDC section (product groups). It can be seen that preference utilisation rates differ strongly across country-product groups. Many countries display full preference utilisation in some product groups and zero utilisation in others. Angola, for example, has a 100% preference utilisation rate in TDC I and TDC V, while imports into the EU of all other TDC sections (except for TDC XV) have a preference utilisation rate of 0%.

Among the countries showing a 0% preference utilisation rate in many TDC sections, we find Sudan (16), Angola (14), and Liberia and Mauritania (13 each). Madagascar stands out as the only country having preference utilisation rates above 0% in all TDC section. Senegal and Mali have 0% preference utilisation

rates only in one (TDC V) and two (TDC V and TDC XVII) TDC sections, respectively.

Five TDC sections XVII (Transport equip, aircraft, ship), XVI (Mach, elect. equip), VII (Plastics; rubber), V (Mineral Products) and XVIII (Optic photo cine precision instr.) are subject to 0% preference utilisation rate upon importation into the EU from more than 20 countries in the sample. Three of these sections (TDC XVI-XVIII) also show very low rates of preference utilisation overall. One may note that as far as the TDC sections XVII and XVI are concerned, no country has a preference utilisation rate of 100% in these sections and only six and four countries, respectively, show preference utilisation rates above 1%.

Similarly to Annex Table A3, Annex Table A4 and A5 further merge the information on the average PVOP values that were presented in Annex Tables A1 (by country) and Annex Table A2 (by TDC section). While on average, the PVOPs of import flows using preferences are higher than the PVOPs of import flows not using preferences, it can be seen in Annex Tables A4 and A5 that in many TDC sections, the latter is of similar magnitude or higher than the former.

# 4 The Empirical Model and Regression Results

We assume the exporter uses preferences, if the value of preferences or the benefit of preferences exceeds the unobservable cost (C) associated with using them. Thus the PVOP must be larger than the unobservable cost:

utilisation rate = 1 if $X_e * m - C > 0$

utilisation rate = 0 if $X_e * m - C <= 0$         (2)

We can thus model exporters' decision to either export under preferences or not as a discrete choice model:[7]

y = 1 if PVOP – C > 0

y = 0 if PVOP – C <= 0         (3)

Substituting the difference between the potential value of preferences and the cost function with the latent variable y* we can estimate a probit model:

$P(y = 1) = Pr(y^* > 0|X) = F(Xb)$         (4)

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[7] See Train, K (2009) for an overview of discrete choice methods.

The explanatory variables X consist of the PVOP and dummy variables for countries and sectors determining the unobservable costs. We assume that a change in the PVOP affects the decision to use preferences to a greater extent for lower PVOP values compared to higher PVOP values. Thus the *rate of change* in the PVOP affects the decision to use preferences, rather than the existing *level* of PVOP. In order to capture this effect, we take the log of PVOP, which equals the value of the trade flow eligible for preferences ($Xe_{jk}$) from country $j$ in product $k$ multiplied by the preferential margin ($m_{jk}$), and estimate the following latent variable model:

$$P(y = 1) = \alpha + \beta_1 \ln(PVOP_{jk}) + \sum \delta_j (COUNTRY_j) + \sum \phi_p (SECTOR_p) + \varepsilon_{jk} \quad (5)$$

As dependent variable, we use the preference utilisation rate (either 0 or 1). The probability to use preferences depends on the PVOP measured in €1000. We further assume that product and country specific costs differ across countries and products. For example, customs procedures differ across countries and complexity and strictness of RoO differ across products. We introduce country and sector dummies $COUNTRY_j$ and $SECTOR_p$ to account for these differences and any other fixed unobservable country and product specific effects. The sub-index $k$ refers to monthly observations at the 8-digit level of the EU's Combined Nomenclature of imports from country $j$, while the sector dummies $SECTOR_p$ refer to TDC Section dummies. Finally, $\alpha$, $\beta_1$, $\beta_1$, $\delta_j$ and $\phi_p$ are parameters to be estimated.

EU monthly import data is for 2010 and from COMEXT and preferential margins are derived from MacMap, complemented with figures from TRAINS.[8] The import data is heavily skewed and so is the data on the potential value of preferences which has a mean of €10000, with a min value of €0 and a max of €3.5 million. In fact, 99% of the observations have PVOPs lower than €180000 and 95% of the observations have PVOPs lower than €24000. We choose to exclude

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[8] COMEXT is the Eurostat reference database for external trade and the extraction of EU imports statistics was made in August 2011. Market Access Map covers customs tariffs (import duties) and other measures applied by 191 importing countries to products from 239 countries and territories. MFN and preferential applied import tariff rates are shown for products at the most detailed national tariff line level (http://www.macmap.org). UNCTAD-TRAINS is a comprehensive computerized information system at the HS-based tariff line level covering tariff, para-tariff and non-tariff measures as well as import flows by origin for more than 140 countries (http://unctad-trains.org/).

the top percentile of the PVOP observations (125 observations), which we consider as outliers.

Table 1 presents the regression results. Column 1 shows that there is a positive and statistically significant impact of the potential value of preferences on the preference utilisation rate. Evaluated at the mean, the coefficient indicates that a 1% increase in the PVOP would increase the probability that preferences are utilised by 7.2 percentage points.

To examine which of the two components making up PVOP (the size of the preference eligible trade flow from country $j$ in product $k$, $Xe_{jk}$ and the preference margin $m_{jk}$,) is contributing the most to this result, we replace the log of PVOP with the log of its components as in equation (6).

$$P(y=1) = \alpha + \beta_1 \ln(Xe_{jk}) + \beta_2 \ln(m_{jk}) + \sum \delta_j (COUNTRY_j) + \sum \phi_p (SECTOR_p) + \varepsilon_{jk} \qquad (6)$$

The results in Column 2 of Table 1 show that the value of the preference eligible trade flow drives the impact that the potential value of preferences has on the preference utilisation rate. The coefficient of the (log of) the size of preference eligible trade flow ($Xe$) is practically identical to the coefficient of the potential value of preferences (PVOP) in equation (5), while the coefficient of the (log of) the preferential margin is insignificant.

**Interaction Effects**

The impact of the PVOP on the decision to utilise preferences is likely to differ across countries and we therefore interact the PVOP with the country dummies. Column 3 of Table 1 presents the impact of this approach using Senegal as a reference country. The coefficient of the interaction effect for Senegalese exporters can be interpreted as the impact of a 1% increase in the PVOP would increase the probability that preference will be used by trade flows from Senegal by 2.5 percentage points.

Compared to Senegal we see large and statistically significant impacts on the probability to use preferences for most of the countries; see last column of Annex Table A6. The effects range from more than 90 percentage points in the case of Comoros, between some 20-30 percentage points in the case of Angola, Lesotho, Eritrea, Equatorial Guinea and Liberia and between approximately 5 and 15

percentage points for Mauritania, Tanzania, Malawi, Zambia, Ethiopia, Mozambique, Burundi, Niger, Uganda, Gambia and Madagascar.

Only Guinea and Guinea-Bissau are expected to increase their use of preferences less than Senegal when (the log of) PVOP is marginally increased; they display negative and statistically significant estimates of 25 percentage points and 6 percentage points, respectively. This result is in line with our findings above (see section 2) as exports from these countries utilising preferences have a lower PVOP than the countries not utilising preferences.

The impact of the PVOP on the decision to utilise preferences is also likely to differ across sectors and we therefore interact the PVOP with the TDC section dummies. Column 4 of Table 1 presents the impact of this approach using Machinery and electric equipment (TDC XVI) as reference group. The coefficient of (the log of) PVOP should be interpreted as that the impact of a marginal increase in (the log of) PVOP would not increase the probability that preferences will be used by trade flows in Machinery and electric equipment (TDC XVI) since the coefficient in not significant.

Compared to Machinery and electric equipment (TDC XVI), it is estimated that the probability to use preferences would increase by 5-15 percentage points in eight TDC sections (Mineral products (TDC V), Wood and articles of wood; cork (TDC IX), Products of the chemical (TDC VI), Live animals; animal products (TDC I), Textiles and textile articles (TDC XI), Prepared foodstuffs; beverages, tobacco (TDC IV), Raw hides and skins; leather (TDC VIII) and Vegetable products (TDC II)), if the log of PVOP were to be marginally increased, see last column of Annex Table 7. No TDC section interaction effect displays statistically significant negative estimates compared to the reference group.

### Potential Impact of RoO

Next, we test the potential impact of the €6000 threshold under which exporters can submit only the invoice and do not need to obtain a certificate of origin when exporting to the EU under preferences. As argued above, if RoO are strict from a production point of view, one would expect higher rates of preference utilisation for smaller trade flows. However, if there is a fixed cost in obtaining the RoO certificate, one would expect the opposite since the potential value of preferences for small trade flows are lower compared to larger trade flows.

To test the above, we add a dummy variable for EU import flows of less than €6000 to regression 1 (equation 5 above). Column 5 of Table 1 shows that the coefficient of this binary variable is negative and statistically significant. Thus, import flows below the threshold are less likely to use preferences, which may indicate that it is set too low for exporters to make use of it.

*Table 1:* Regression Results of EU Preference Utilisation Rates, Marginal Probit Effects

| Column/regression | Regression | | | | | |
|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| Log of the potential value of preferences (PVOP) | 0.072*** | - | 0.025*** | 0.021 | 0.050*** | 0.072*** |
| Log of value of preference eligible trade flow (Xe) | - | 0.073*** | - | - | - | - |
| Log of preferential margin (m) | - | 0.019 | - | - | - | - |
| Binary variable for flows of less than €6000 | - | - | - | - | -0.177*** | - |
| Binary variable for preferential margins of < 2% | - | - | - | - | - | -0.041 |
| Binary variable for preferential margins of < 4% | | | | | | 0.018 |
| Log of PVOP interaction with: | | | | | | |
|     Country | - | - | Annex Table A6 | - | - | - |
|     TDC | - | - | - | Annex Table A7 | - | - |
| Exporting country dummies | Annex Table A6 | | | | Yes [a] | |
| TDC section dummies | Annex Table A7 | | | | | |
| Pseudo R2 | 0.53 | 0.53 | 0.56 | 0.54 | 0.53 | 0.53 |
| Log-Likelihood | -3944.9 | -3937.5 | -3682.9 | -3859.1 | -3911.7 | -3944.2 |
| Obs. | 12130 | 12130 | 12130 | 12130 | 12130 | 12130 |

*Source:* Own calculations using Stata 12. *Note:* ***p<0.01, based on robust standard errors. Since the table reports marginal effects, there is no constant included. Full regression results are available from the authors. [a] These results are available from the authors upon request.

Several authors estimated computed preferential margin threshold values under which exporters have no incentives to ask for preferences since the costs of obtaining these exceed their benefits. To test the extent to which these thresholds hold in the presence of the potential value of preferences and the importance of the value of the preference eligible imports flows we have witnessed, we add two dummy variables to regression 1 (equation 5 above); one for preferential margins less than 2% and one for preferential margins of less than 4%.

The results are displayed in the last column of Table 1 and show that none of the coefficients of the two binary variables are statistically significant. Hence, one cannot say that compared to import flows of preferential margins higher than 4%, flows with lower preferential margin are associated with less probability to use preferences.

## 5    Summary and Conclusions

This paper demonstrates that EU preference utilisation rates generally increase with higher potential values of preferential imports (PVOP). We find the effect of the PVOP on the exporter's decision to use preferences differs strongly across countries and products. The differences across countries cannot be explained by differences in the preferential margin or by RoO since they are the same across countries.

While differences across products may be explained by RoO, the origin rules cannot explain why imports from country X in product Y utilise preferences while imports of product Y from country Z do not. However, exports from some countries may find it easier to meet RoO requirements than exports from other countries, reflecting a varying quality of national institutions.

It seems reasonable to believe that explanations to this phenomenon should be looked at also on the side of the exporting countries. Exploring the empirical material further in terms of disaggregating the TDC Sections to product level may shed enough light for qualitative research on institutional matters at country level to be carried out. Finally, an analysis of the duration and importance of trade, analysing possible sunk cost, may shed some further light on this issue.

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# APPENDIX

*Table A1*: Overview of EU Preferential Imports from the African LDCs, 2010
(€1000, % and count)

| Country | PUR (%) | Count of flows not using prefs. | Share of total # of flows (%) | Average PVOP of flows not using prefs. (€1000) | Average PVOP of flows using prefs. (€1000) | Share of pref. eligible exports to the EU | Average pref. margin (%) and standard dev. in ( ) |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Angola | 76.1 | 729 | 98.1 | 0.6 | 77.0 | 3.0 | 3.8 (2.9) |
| Benin | 93.4 | 141 | 75.8 | 0.1 | 1.2 | 0.3 | 6.0 (4.1) |
| Burkina F. | 78.5 | 199 | 58.9 | 0.2 | 1.8 | 0.2 | 6.0 (4.0) |
| Burundi | 55.1 | 42 | 27.1 | 0.2 | 0.3 | 0.0 | 9.2 (5.9) |
| Central A. R. | 21.6 | 50 | 94.3 | 0.2 | 0.8 | 0.0 | 5.0 (3.1) |
| Chad | 0.0 | 85 | 100.0 | 0.4 | - | 0.0 | 5.0 (3.1) |
| Comoros | 97.4 | 22 | 59.5 | 0.2 | 12.9 | 0.2 | 6.0 (2.7) |
| Congo, RDC | 9.9 | 260 | 53.9 | 4.5 | 1.7 | 2.0 | 7.5 (5.8) |
| Djibouti | 0.4 | 72 | 98.6 | 0.4 | 0.1 | 0.0 | 7.7 (10.9) |
| Eq. Guinea | 57.3 | 136 | 77.3 | 0.8 | 13.5 | 1.0 | 3.7 (2.0) |
| Eritrea | 93.9 | 40 | 41.2 | 0.1 | 1.9 | 0.1 | 6.8 (4.1) |
| Ethiopia | 84.2 | 357 | 50.8 | 0.9 | 4.6 | 1.4 | 7.7 (4.3) |
| Gambia | 97.9 | 88 | 50.9 | 0.3 | 12.0 | 0.6 | 9.9 (6.5) |
| Guinea | 11.7 | 212 | 81.2 | 1.3 | 0.5 | 0.2 | 6.9 (4.9) |
| Guinea-B. | 43.2 | 19 | 15.3 | 0.3 | 0.1 | 0.0 | 8.1 (4.8) |
| Lesotho | 82.7 | 88 | 52.4 | 0.2 | 2.5 | 0.1 | 12.6 (8.0) |
| Liberia | 45.5 | 103 | 98.1 | 0.5 | 31.3 | 0.1 | 4.4 (3.4) |
| Madagascar | 98.7 | 524 | 18.5 | 0.3 | 10.5 | 10.8 | 9.1 (6.6) |

*Table A1* Continued

| Country | PUR (%) | Count of flows not using prefs. | Share of total # of flows (%) | Average PVOP of flows not using prefs. (€1000) | Average PVOP of flows using prefs. (€1000) | Share of pref. eligible exports to the EU | Average pref. margin (%) and standard dev. in ( ) |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **Malawi** | 99.2 | 77 | 47.5 | 0.5 | 82.0 | 2.3 | 13.1 (16.9) |
| **Mali** | 64.8 | 144 | 44.7 | 0.2 | 0.3 | 0.1 | 6.9 (5.7) |
| **Mauritania** | 99.0 | 133 | 29.4 | 0.2 | 17.9 | 2.9 | 9.7 (4.9) |
| **Mozambique** | 99.9 | 189 | 49.2 | 0.4 | 162.6 | 48.4 | 8.4 (7.7) |
| **Niger** | 59.5 | 144 | 86.7 | 0.2 | 1.7 | 0.1 | 4.1 (2.7) |
| **Rwanda** | 64.6 | 59 | 51.3 | 0.1 | 0.3 | 0.0 | 8.4 (6.4) |
| **Sao T.& P.** | 49.3 | 38 | 43.7 | 0.4 | 0.4 | 0.0 | 7.7 (15.1) |
| **Senegal** | 97.7 | 527 | 32.5 | 0.3 | 14.6 | 7.9 | 9.0 (6.6) |
| **Sierra Leone** | 29.0 | 133 | 91.7 | 1.2 | 3.6 | 0.5 | 5.8 (3.9) |
| **Somalia** | 0.0 | 78 | 100.0 | 0.1 | - | 0.0 | 10.0 (4.0) |
| **Sudan** | 40.9 | 110 | 99.1 | 27.7 | 0.0 | 1.0 | 5.2 (7.8) |
| **Tanzania** | 98.9 | 320 | 43.3 | 0.2 | 26.1 | 6.9 | 7.4 (7.1) |
| **Togo** | 69.3 | 169 | 39.4 | 0.2 | 0.8 | 0.1 | 8.1 (5.5) |
| **Uganda** | 99.3 | 278 | 39.3 | 0.1 | 23.9 | 6.0 | 8.5 (7.1) |
| **Zambia** | 97.5 | 193 | 57.8 | 0.5 | 14.8 | 2.3 | 8.0 (9.9) |
| **Total** | **94.6** | **5817** | **45.7** | **1.1** | **16.6** | **100** | **8.0 (6.7)** |

*Source:* COMEXT and own calculations. *Note:* PUR denotes the preference utilisation rate. PVOP denotes value of preferences and is defined as the product of the preferential margin and preference eligible imports. A flow is defined as an 8-digit product imported into the EU from the preference beneficiaries in the sample in a specific month. The figures in the table have been aggregated to provide result for 2010.

*Table A2*: Overview of EU Preferential Imports from the African LDCs by TDC Section, 2010 (€1000, % and count)

| TDC Section | PUR (%) | Count of flows not using prefs. | Share of total # of flows (%) | Average PVOP of flows not using prefs. (€1000) | Average PVOP of flows using prefs. (€1000) | Share of pref. eligible exports to the EU | Average pref. margin (%) and standard dev. in ( ) |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **I Live animals** | 99.4 | 82 | 5.8 | 3.1 | 30.9 | 21.2 | 12.3 (5.8) |
| **II Vegetable products** | 99.4 | 221 | 12.4 | 0.2 | 6.8 | 6.9 | 10.0 (7.5) |
| **III Fats, oils** | 97.4 | 58 | 33.7 | 1.6 | 20.9 | 2.4 | 7.6 (3.4) |
| **IV Foodstfs; bev., tob.** | 95.9 | 213 | 22.7 | 16.3 | 39.7 | 14.6 | 15.9 (13.6) |
| **V Mineral products** | 91.4 | 124 | 63.3 | 0.3 | 4.5 | 0.4 | 5.0 (1.2) |
| **VI Chemical** | 47.8 | 232 | 79.7 | 0.2 | 0.8 | 0.1 | 5.9 (1.7) |
| **VII Plastics; rubber** | 97.3 | 148 | 39.5 | 0.1 | 1.3 | 0.6 | 3.9 (1.3) |
| **VIII Hides and skins** | 97.4 | 115 | 34.5 | 0.1 | 2.4 | 0.6 | 3.5 (1.8) |
| **IX Wood** | 46.8 | 100 | 82.0 | 11.5 | 10.8 | 4.0 | 3.1 (1.0) |
| **XI Textiles** | 96.7 | 854 | 32.0 | 0.3 | 4.9 | 4.7 | 10.7 (2.4) |
| **XII Footwear** | 79.6 | 136 | 44.2 | 0.3 | 0.6 | 0.2 | 5.9 (5.1) |
| **XIII Plaster cement** | 90.4 | 125 | 57.6 | 0.1 | 1.2 | 0.1 | 4.9 (2.9) |
| **XIV Pearls; stones** | 27.3 | 165 | 66.0 | 0.2 | 0.1 | 0.1 | 3.6 (0.7) |
| **XV Iron and steel** | 99.6 | 405 | 76.7 | 0.2 | 180.9 | 41.9 | 3.5 (1.4) |
| **XVI Machin., elect. Eq.** | 5.4 | 1819 | 98.0 | 0.3 | 0.7 | 1.1 | 3.1 (2.1) |
| **XVII Transp. equip** | 2.6 | 335 | 96.3 | 1.9 | 1.7 | 0.6 | 5.3 (3.3) |
| **XVIII Optic photo** | 4.8 | 504 | 91.1 | 0.2 | 0.1 | 0.2 | 3.1 (1.0) |
| **XX Misc. manufac.** | 85.9 | 181 | 48.7 | 0.2 | 0.8 | 0.3 | 3.4 (1.0) |
| **Total** | **94.6** | **5817** | **45.7** | **1.1** | **16.6** | **100** | **8.0 (6.7)** |

*Source:* COMEXT and own calculations. *Note:* PUR denotes the preference utilisation rate. PVOP denotes value of preferences and is defined as the product of the preferential margin and preference eligible imports. A flow is defined as an 8-digit product imported into the EU from the preference beneficiaries in the sample in a specific month. The figures in the table have been aggregated to provide result for 2010.

*Table A3*: Preference Utilisation Rate of African LDCs' by TDC Section (%)

| Partner | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angola | 100.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 76.1 |
| Benin | 97.0 | 98.0 | 90.2 | 99.9 | 0.0 | 0.0 | 0.0 | 11.9 | 0.0 | 28.1 | 45.8 | 0.3 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 7.6 | 93.4 |
| Burkina Faso | | 99.3 | 88.3 | 0.1 | 0.0 | 45.6 | 0.0 | 89.2 | 47.7 | 33.2 | 25.8 | 57.1 | 39.8 | 4.9 | 0.3 | 0.0 | 6.6 | 60.4 | 78.5 |
| Burundi | 0.0 | 100.0 | | 100.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 55.1 |
| Central A. R. | 0.0 | 0.0 | | 0.0 | 0.0 | 22.2 | | | 100.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.6 |
| Chad | | | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Comoros | | 100.0 | | | | 84.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 97.4 |
| Congo, RDC | 0.0 | 96.6 | 100.0 | 96.4 | 0.5 | 97.8 | 3.6 | 30.6 | 92.5 | 17.3 | 0.0 | 7.8 | 0.0 | 6.4 | 0.0 | 0.0 | 1.4 | 0.0 | 9.9 |
| Djibouti | | 0.0 | | 0.0 | 41.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.4 |
| Eq. Guinea | | | | | 0.0 | 99.9 | 0.0 | | 98.4 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 57.3 |
| Eritrea | 78.4 | 91.7 | | 100.0 | 0.0 | 0.0 | 99.1 | 24.8 | 0.0 | 100.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 58.3 | 0.0 | 0.0 | 93.9 |
| Ethiopia | 100.0 | 99.7 | | 98.9 | 0.0 | 12.1 | 0.0 | 98.0 | 56.1 | 96.7 | 86.3 | 57.0 | 0.9 | 0.1 | 0.0 | 0.0 | 0.1 | 57.6 | 84.2 |
| Gambia | 97.4 | 79.8 | 100.0 | 26.7 | | 0.0 | 0.0 | 100.0 | 0.0 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 97.9 |
| Guinea | 0.0 | 83.7 | 39.4 | 15.1 | 0.0 | 0.0 | 100.0 | 94.6 | 93.2 | 1.6 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 3.3 | 0.0 | 11.7 |
| Guinea-B. | 100.0 | 98.9 | 13.8 | 100.0 | | 0.0 | 0.0 | | 0.5 | 100.0 | 100.0 | | | 0.2 | 5.2 | 0.1 | 0.5 | 100.0 | 43.2 |
| Lesotho | | 100.0 | | | | | | 0.0 | 0.0 | 90.8 | 0.0 | | | 0.0 | 0.0 | | | | 82.7 |
| Liberia | | 0.0 | 0.0 | 0.0 | 0.0 | 99.5 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 | 0.0 | 45.5 |
| Madagascar | 100.0 | 98.6 | 36.2 | 100.0 | 85.9 | 97.7 | 97.5 | 99.8 | 99.8 | 99.1 | 87.7 | 47.0 | 61.8 | 68.2 | 57.5 | 24.5 | 9.9 | 98.5 | 98.7 |
| Malawi | | 95.4 | 100.0 | 99.8 | | 99.3 | 0.0 | 0.0 | 89.6 | 87.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 99.2 |

*Table A3 continued*

| Partner | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mali | 97.8 | 81.1 | 100.0 | 98.9 | 0.0 | 4.1 | 65.0 | 77.6 | 93.0 | 73.5 | 11.0 | 99.6 | 46.1 | 63.9 | 31.7 | 0.0 | 66.7 | 99.3 | 64.8 |
| Mauritania | 100.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 82.3 | 99.0 |
| Mozambique | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 14.5 | 0.0 | 0.0 | 89.8 | 95.4 | 0.0 | 0.0 | 38.4 | 100.0 | 0.0 | 0.0 | 5.8 | 0.0 | 99.9 |
| Niger | | 100.0 | | 0.0 | 0.0 | 0.0 | 73.5 | 6.0 | | 75.4 | 0.0 | 0.0 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 78.2 | 59.5 |
| Rwanda | | 73.1 | | 65.9 | 0.0 | 99.9 | 0.5 | 20.4 | 61.7 | 62.7 | 100.0 | 0.0 | 26.6 | 1.1 | 53.7 | 0.0 | 93.7 | 55.0 | 64.6 |
| Sao T.& P. | 0.0 | 97.4 | 100.0 | 100.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 49.3 |
| Senegal | 100.0 | 99.9 | 100.0 | 94.1 | 0.0 | 3.2 | 17.2 | 74.4 | 94.6 | 69.1 | 94.8 | 43.7 | 94.6 | 10.5 | 0.1 | 18.3 | 34.0 | 21.6 | 97.7 |
| Sierra Leone | 0.0 | 62.8 | 0.0 | 99.9 | 0.0 | 0.0 | 82.5 | 0.0 | 0.0 | 14.4 | 0.0 | 0.0 | 34.0 | 0.2 | 0.0 | 0.0 | 0.0 | 95.6 | 29.0 |
| Somalia | | 0.0 | | | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Sudan | 0.0 | 0.0 | | 42.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.9 |
| Tanzania | 100.0 | 99.5 | 100.0 | 99.9 | 0.0 | 0.0 | 74.4 | 84.6 | 6.5 | 97.1 | 0.0 | 99.9 | 8.4 | 3.0 | 11.9 | 0.0 | 1.6 | 2.8 | 98.9 |
| Togo | 0.0 | 98.3 | 31.5 | 47.5 | 100.0 | | 1.5 | 91.8 | 69.7 | 28.3 | 35.1 | 33.8 | 73.2 | 3.9 | 0.0 | 0.0 | 11.2 | 22.7 | 69.3 |
| Uganda | 100.0 | 100.0 | 100.0 | 99.7 | 0.0 | 88.7 | 0.0 | 11.6 | 0.0 | 46.7 | 16.7 | 14.1 | 8.2 | 0.0 | 0.0 | 0.0 | 0.0 | 55.9 | 99.3 |
| Zambia | 100.0 | 99.8 | 100.0 | 99.2 | 0.0 | 87.7 | 0.0 | 67.6 | 0.0 | 85.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 97.5 |
| Grand Total | 99.4 | 99.4 | 97.4 | 95.9 | 46.8 | 91.4 | 47.8 | 97.3 | 97.4 | 96.7 | 79.6 | 90.4 | 27.3 | 99.6 | 5.4 | 2.6 | 4.8 | 85.9 | 94.6 |

Source: Own calculations

*Table A4*: Average Potential Value of Preferences (PVOP), Utilised, by TDC Section, (€1000)

| Partner | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angola | 93.9 | | | | 57.5 | | | | | | | | | 2.7 | | | | | 77.0 |
| Benin | 1.1 | 4.9 | 0.7 | 0.0 | | | | 0.0 | | 0.1 | 0.1 | 0.0 | 0.0 | | | | | 0.0 | 1.2 |
| Burkina Faso | | 4.6 | 3.7 | 0.0 | | 0.0 | | 0.5 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 1.8 |
| Burundi | | 0.4 | | 0.2 | | | | | | | | | | | | | | 0.0 | 0.3 |
| Central A. R. | | | | | | 0.0 | | | 1.3 | | | | | | | | | | 0.8 |
| Comoros | | 13.7 | | | | 2.0 | | | | | | | | | | | | | 12.9 |
| Congo, RDC | | 0.3 | 0.0 | 3.8 | 2.7 | 7.8 | 0.0 | 0.0 | 1.6 | 0.1 | | 0.0 | | 0.1 | | | 0.1 | | 1.7 |
| Djibouti | | | | | 0.1 | | | | | | | | | | | | | | 0.1 |
| Eq. Guinea | | | | | | 47.2 | | | 10.8 | | | | | | | | | | 13.5 |
| Eritrea | 0.1 | 0.7 | | 0.0 | | | 3.8 | 0.1 | | 2.2 | 0.4 | | | | | 1.6 | | | 1.9 |
| Ethiopia | 9.8 | 8.0 | | 0.4 | | 0.5 | | 2.8 | 0.0 | 3.9 | 2.1 | 0.1 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.1 | 4.6 |
| Gambia | 7.9 | 0.3 | 122.7 | 0.1 | | | | 0.0 | | 0.1 | | | | | | | | | 12.0 |
| Guinea | | 0.4 | 0.6 | 0.3 | | | 0.0 | 0.2 | 2.3 | 0.0 | 0.0 | | | | 0.0 | | 0.1 | | 0.5 |
| Guinea-B. | 0.0 | 0.2 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Lesotho | | 7.5 | | | | | | | | 1.8 | | | | | | | | | 2.5 |
| Liberia | | | | | | 61.4 | | | | | | | | 1.2 | | | | | 31.3 |
| Madagascar | 33.6 | 2.4 | 0.2 | 44.5 | 0.1 | 0.7 | 1.2 | 2.3 | 0.9 | 6.9 | 0.2 | 0.0 | 0.2 | 0.1 | 1.6 | 0.4 | 0.0 | 1.1 | 10.5 |
| Malawi | | 2.4 | 0.4 | 190.7 | | 0.8 | | | 1.1 | 1.5 | | | | | | | | | 82.0 |
| Mali | 1.6 | 0.5 | 1.3 | 0.4 | | 0.0 | 0.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.3 | 0.0 | 0.1 | 0.6 | | 0.4 | 0.0 | 0.3 |

*Table A4 continued*

| Partner | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mauritania | 18.2 | | | 9.9 | | | | | | | | | | | | | | 0.7 | 17.9 |
| Mozambique | 74.8 | 4.7 | | 107.3 | | 1.4 | | | 0.1 | 3.4 | | | 0.0 | 1852.8 | | | 0.0 | | 162.6 |
| Niger | | 3.9 | | | | | 0.2 | 0.0 | | 1.0 | | | 0.1 | | | | | 0.1 | 1.7 |
| Rwanda | | 0.3 | | 0.1 | | 3.3 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | | 0.1 | 0.0 | 0.7 | | 0.0 | 0.1 | 0.3 |
| Sao T.& P. | | 0.7 | 0.6 | 0.1 | | | | | | | | | | | | | | | 0.4 |
| Senegal | 25.2 | 16.5 | 64.4 | 7.5 | | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.8 | 0.0 | 0.2 | 0.1 | 0.0 | 8.8 | 0.2 | 0.0 | 14.6 |
| Sierra Leone | | 0.6 | | 9.3 | | | 0.6 | | | 1.8 | | | 0.2 | 0.0 | | | | 0.3 | 3.6 |
| Tanzania | 49.5 | 12.2 | 2.5 | 65.4 | | | 2.7 | 0.1 | 0.0 | 2.9 | | 6.5 | 0.0 | 0.0 | 0.5 | | 0.0 | 0.1 | 26.1 |
| Togo | | 1.5 | 0.0 | 0.2 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.1 | 0.4 | 0.0 | 0.1 | 0.0 | | | 0.2 | 0.1 | 0.8 |
| Uganda | 55.8 | 12.7 | 0.1 | 34.6 | | 0.0 | | 0.0 | | 0.4 | 0.0 | 0.1 | 0.1 | | | | | 0.5 | 23.9 |
| Zambia | 24.5 | 9.0 | 0.3 | 37.7 | | 0.4 | | 0.6 | | 0.2 | | | | | | | 0.0 | | 14.8 |
| Grand Total | 30.9 | 6.8 | 20.9 | 39.7 | 10.8 | 4.5 | 0.8 | 1.3 | 2.4 | 4.9 | 0.6 | 1.2 | 0.1 | 180.9 | 0.7 | 1.7 | 0.1 | 0.8 | 16.6 |

*Source:* Own calculations. *Note:* PVOP denotes value of preferences and is defined as the product of the preferential margin and preference eligible imports.

Table A5: Average Potential Value of Preferences (PVOP), not Utilised, by TDC Section, (€1000)

| Partner | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Angola | | 0.0 | | 1.4 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.2 | 0.3 | 0.7 | 2.0 | 0.6 | 0.6 | 0.6 |
| Benin | 0.0 | 0.4 | 0.1 | 0.5 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.0 | 0.4 | 0.2 | 0.0 | 0.1 |
| Burkina Faso | | 0.1 | 0.8 | 0.5 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.5 | 0.1 | 0.0 | 0.2 |
| Burundi | 0.2 | 0.0 | | | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.5 | 0.0 | 0.1 | | 0.2 |
| Central A. R. | 4.7 | 0.2 | | 0.0 | 0.0 | 0.0 | | | | 0.2 | 0.0 | | | 0.2 | 0.1 | 0.3 | 0.0 | 0.1 | 0.2 |
| Chad | | | | 0.0 | 0.0 | | 1.0 | 0.4 | | 2.0 | | | 0.1 | 0.1 | 0.1 | 0.5 | 0.3 | | 0.4 |
| Comoros | | | | | | 0.1 | 0.0 | 0.0 | | 0.3 | 0.2 | | | | 0.0 | 0.9 | 0.0 | 0.0 | 0.2 |
| Congo, RDC | 0.6 | 0.1 | | 0.7 | 368.7 | 0.3 | 0.1 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.5 | 0.2 | 0.2 | 4.5 |
| Djibouti | | 2.6 | | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 1.0 | | | 0.2 | 0.3 | 1.7 | 0.2 | | 0.4 |
| Eq. Guinea | | | | | 8.3 | 0.0 | 0.2 | | 1.5 | 0.1 | 0.0 | 0.6 | | 0.4 | 0.5 | 1.4 | 0.3 | 0.0 | 0.8 |
| Eritrea | 0.1 | 0.0 | | | 0.1 | 0.3 | 0.0 | 0.3 | 0.0 | 0.0 | | | 0.0 | 0.1 | 0.0 | 0.6 | 0.1 | 0.2 | 0.1 |
| Ethiopia | 0.0 | 0.1 | | 0.0 | 0.0 | 1.3 | 0.1 | 0.2 | 0.1 | 0.1 | 0.3 | 0.1 | 0.2 | 0.4 | 0.1 | 27.2 | 0.1 | 0.0 | 0.9 |
| Gambia | 2.8 | 0.1 | | 0.3 | | 0.2 | 0.0 | | 0.1 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.3 |
| Guinea | 5.3 | 0.1 | 1.1 | 2.3 | 0.0 | 0.3 | | 0.0 | 0.1 | 0.1 | 0.2 | 0.0 | 0.1 | 0.4 | 0.1 | 2.5 | 0.1 | 3.7 | 1.3 |
| Guinea-B. | | 0.1 | 0.5 | | | 0.5 | 0.0 | | 0.1 | | | | | 0.2 | 0.1 | 0.5 | 0.1 | | 0.3 |
| Lesotho | | | | | | | | 0.0 | 0.0 | 0.2 | 0.0 | | | 0.0 | 0.5 | | | | 0.2 |
| Liberia | | 0.0 | 1.6 | 0.6 | 0.7 | 0.1 | 0.0 | | 0.0 | 0.1 | 0.0 | | 0.0 | 0.0 | 0.8 | 0.2 | 0.2 | 0.0 | 0.5 |
| Madagascar | 0.1 | 0.2 | 2.5 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.4 | 4.2 | 0.2 | 0.4 | 0.1 | 0.1 | 1.2 | 0.1 | 0.1 | 0.3 |
| Malawi | | 0.8 | | 1.3 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.1 | 0.0 | 0.5 |
| Mali | 0.1 | 0.8 | | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.1 | 0.1 | 0.0 | 0.2 |

_Table A5 continued_

| Partner | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mauritani**a | 0.8 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | | 0.4 | | 0.0 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 |
| **Mozambique** | | | 3.4 | 0.0 | 0.0 | 2.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.5 | 0.0 | 0.0 | 0.3 | 0.1 | 0.4 | 0.0 | 0.1 | 0.4 |
| **Niger** | | | | | 0.0 | 0.2 | 0.0 | 0.0 | | 0.3 | 0.0 | 0.1 | 0.5 | 0.1 | 0.1 | 0.8 | 0.3 | 0.0 | 0.2 |
| **Rwanda** | | 0.1 | | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | | 0.3 | 0.4 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 |
| **Sao T.& P.** | 5.8 | 0.1 | | | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.3 | 0.0 | 0.5 | 0.0 | 0.4 |
| **Senegal** | 0.2 | 0.1 | 0.3 | 1.2 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.3 | 0.2 | 0.8 | 0.1 | 0.1 | 0.3 |
| **Sierra Leone** | 0.0 | 0.4 | 0.3 | 0.1 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 1.2 | 0.0 | 0.0 | 0.2 | 0.1 | 1.1 | 9.5 | 0.2 | 0.0 | 1.2 |
| **Somalia** | | 0.9 | | | | 0.0 | 0.0 | | | 0.1 | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 |
| **Sudan** | 0.1 | 0.0 | | 505.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.5 | 0.0 | 0.0 | 27.7 |
| **Tanzania** | 0.1 | 0.3 | | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.1 | 0.4 | 0.1 | 0.3 | 0.2 |
| **Togo** | 0.0 | 0.1 | 0.3 | 0.3 | | | 0.1 | 0.0 | 0.0 | 0.5 | 0.8 | 0.1 | 0.0 | 0.0 | 0.1 | 0.3 | 0.2 | 0.2 | 0.2 |
| **Uganda** | | 0.3 | | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Zambia** | | 0.3 | | 4.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.5 |
| **Grand Total** | 3.1 | 0.2 | 1.6 | 16.3 | 11.5 | 0.3 | 0.2 | 0.1 | 0.1 | 0.3 | 0.3 | 0.1 | 0.2 | 0.2 | 0.3 | 1.9 | 0.2 | 0.2 | 1.1 |

_Source:_ Own calculations. _Note:_ PVOP denotes value of preferences and is defined as the product of the preferential margin and preference eligible imports.

*Table A6*: Regression Results, Marginal Effects by Country

| Country | Marginal effects | | | | Interaction with PVOP |
|---|---|---|---|---|---|
| | **Reg. (1)** | **Reg. (2)** | **Reg. (3)** | **Reg. (4)** | **Reg. (3)** |
| **Angola** | -0.137 | -0.365*** | -0.035 | -0.137 | 0.291*** |
| **Benin** | 0.294* | 0.066 | 0.445** | 0.316** | 0.009 |
| **Burkina Faso** | 0.405*** | 0.235*** | 0.528*** | 0.414*** | 0.013 |
| **Burundi** | 0.445*** | 0.329*** | 0.572*** | 0.446*** | 0.086*** |
| **Central A. R.** | Dropped | -0.246 | 0.197 | 0.257 | 0.007 |
| **Chad** | Dropped | Dropped | Dropped | Dropped | Dropped |
| **Comoros** | 0.250 | Dropped | 0.447* | 0.418*** | 0.918*** |
| **Congo, RDC** | 0.416*** | 0.254*** | 0.547*** | -0.124 | 0.021* |
| **Djibouti** | -0.182 | -0.369* | Dropped | Dropped | -0.006 |
| **Equatorial G.** | 0.287* | 0.055 | 0.45** | 0.187 | 0.231*** |
| **Eritrea** | 0.431*** | 0.293*** | 0.573*** | 0.426*** | 0.262*** |
| **Ethiopia** | 0.389*** | 0.199** | 0.59*** | 0.398*** | 0.087*** |
| **Gambia** | 0.286* | 0.061 | 0.486** | 0.307* | 0.05*** |
| **Guinea** | -0.022 | -0.268*** | 0.08 | -0.015 | -0.057*** |
| **Guinea-B.** | 0.503*** | 0.497*** | 0.306 | 0.492*** | -0.248*** |
| **Lesotho** | 0.343** | 0.145* | 0.569*** | 0.342** | 0.287*** |
| **Liberia** | -0.024 | -0.265 | 0.326 | 0.011 | 0.219*** |
| **Madagascar** | 0.648*** | 0.526*** | 0.789*** | 0.648*** | 0.042*** |
| **Malawi** | 0.263* | 0.026 | 0.495** | 0.272* | 0.103*** |
| **Mali** | 0.472*** | 0.376*** | 0.564*** | 0.469*** | 0.004 |
| **Mauritania** | 0.372*** | 0.174** | 0.557*** | 0.38*** | 0.135*** |
| **Mozambique** | 0.327** | 0.109 | 0.532*** | 0.339** | 0.088*** |
| **Niger** | 0.219 | -0.039 | 0.483** | 0.251 | 0.069*** |
| **Rwanda** | 0.405*** | 0.253*** | 0.453* | 0.409*** | -0.037 |
| **Sao T. and P.** | 0.411*** | 0.261*** | 0.539*** | 0.417*** | 0.029 |
| **Senegal** | 0.527*** | 0.398*** | 0.639*** | 0.534*** | CONTROL |
| **Sierra Leone** | 0.037 | -0.222** | 0.327 | 0.047 | 0.044 |
| **Somalia** | Dropped | Dropped | Dropped | Dropped | Dropped |
| **Sudan** | Dropped | Dropped | Dropped | Dropped | Dropped |
| **Tanzania** | 0.389*** | 0.188** | 0.599*** | 0.400*** | 0.128*** |
| **Togo** | 0.458*** | 0.337*** | 0.535*** | 0.456*** | -0.013 |
| **Uganda** | 0.408*** | 0.227*** | 0.582*** | 0.415*** | 0.06*** |
| **Zambia** | 0.333** | 0.119 | 0.543*** | 0.341** | 0.09*** |

*Source:* Own calculations using Stata 12. *Note:* ***, ** and * denote p<0.01, 0.05 and 0.10, respectively, based on robust standard errors. Dummy variables for Chad, Somalia and Sudan are dropped in all regressions because the model predicts perfect failure. Central African Republic and Comoros dummies are dropped in regressions 1 and 2 because of perfect collinearity. The same holds for Djibouti in regressions 3 and 4. Senegal makes out the reference group in the last column.

*Table A7*: Regression Results, Marginal Effects by TDC Section

| TDC Section | Marginal effects | | | | Interaction with TDC |
|---|---|---|---|---|---|
| | Reg. (1) | Reg. (2) | Reg. (3) | Reg. (4) | Reg. (3) |
| TDC1 | 0.507*** | 0.535*** | 0.409*** | 0.371*** | 0.076*** |
| TDC2 | 0.513*** | 0.540*** | 0.358*** | 0.361*** | 0.051*** |
| TDC3 | 0.24*** | 0.287*** | Dropped | -0.067 | -0.002 |
| TDC4 | 0.362*** | 0.414*** | 0.130** | 0.180* | 0.063*** |
| TDC5 | Dropped | Dropped | -0.308*** | Dropped | 0.142*** |
| TDC6 | 0.103 | 0.137* | -0.160** | -0.064 | 0.080*** |
| TDC7 | -0.034 | 0.015 | -0.290*** | -0.378*** | 0.008 |
| TDC8 | 0.309*** | 0.326*** | 0.040 | 0.101 | 0.055*** |
| TDC9 | 0.306*** | 0.319*** | 0.050 | 0.273** | 0.117*** |
| TDC10 | No EU imports | | | | |
| TDC11 | 0.254*** | 0.320*** | -0.035 | 0.062 | 0.075*** |
| TDC12 | 0.252*** | 0.280*** | -0.038 | -0.040 | 0.035* |
| TDC13 | 0.202*** | 0.230*** | -0.100* | -0.108 | 0.035 |
| TDC14 | 0.010 | 0.120* | -0.178*** | -0.228* | 0.029 |
| TDC15 | -0.034 | -0.014 | -0.265*** | -0.438*** | -0.019 |
| TDC16 | -0.489*** | -0.486*** | -0.552*** | -0.645*** | CONTROL |
| TDC17 | -0.474*** | -0.460*** | -0.456*** | -0.540*** | -0.010 |
| TDC18 | -0.227*** | -0.215*** | -0.374*** | -0.514*** | -0.022 |
| TDC20 | 0.182*** | 0.198*** | -0.107* | -0.193* | 0.017 |
| TDC21 | No EU imports | | | | |

*Source:* Own calculations using Stata 12. *Note:* ***, ** and * denote p<0.01, 0.05 and 0.10, respectively, based on robust standard errors. TDC3 is dropped in regressions1, 2 and 4 because of collinearity, while the same holds for TDC3 in regression 3. TDC16 makes out the reference group in the last column.

*Table A8*: List of African LDCs

Angola, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Democratic Republic of Congo (Kinshasa), Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Equatorial Guinea, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda, Zambia.

_Table A9_: Correspondence between TDC Sections and HS Chapters

| TDC Section | Description | HS Chapters |
|---|---|---|
| I | Live animals; animal products | 01 – 05 |
| II | Vegetable products | 06 – 14 |
| III | Animal or vegetable fats and oils | 15 |
| IV | Prep foodstuffs; beverages, tobacco | 16 – 24 |
| V | Mineral Products | 25 – 27 |
| VI | Products of the chemical | 28 – 38 |
| VII | Plastics; rubber | 39 – 40 |
| VIII | Raw hides and skins, leather | 41 – 43 |
| IX | Wood and articles of wood; cork | 44 – 46 |
| X | Paper or paperboard | 47 – 49 |
| XI | Textiles and textile articles | 50 – 63 |
| XII | Footwear | 64 – 67 |
| XIII | Art of stone plaster cement | 68 – 70 |
| XIV | Pearls; precious stones and metals | 71 |
| XV | Iron and steel, base metals and art | 72 – 83 |
| XVI | Mach, elect.equip | 84 – 85 |
| XVII | Transport equip, aircraft, ship | 86 – 89 |
| XVIII | Optic photo cine precision instr | 90 – 92 |
| XIX | Arms and ammunition | 93 |
| XX | Miscellaneous manufactured articles | 94 – 96 |
| XXI | Works of art, collectors' pieces | 97 |

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