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Laurent Didier
*University of Reunion Island*

Justinien Razafindravaosolonirina
*University of Reunion Island*

## Abstract

This article assesses for the first time the impact of non-reciprocal and reciprocal regional trade agreements (RTAs), for four Small Island Developing States (SIDS), on the behavior of exporting firms. These countries are signatories to several trade agreements whose aim is to strengthen their regional integration and their participation to the world economy in order to alleviate their handicaps. Thus, the granting of trade preferences affects in the first place the exporting firms who wish to access these preferential markets. As these aspects are very underexplored by the literature, we rely on data from the World Bank (1997-2014) listing the characteristics of exporters both at the aggregated level and disaggregated by the merchandise trade products. Using panel gravity equations, the results highlighted the significance of RTAs on the behavior of these four SIDS exporting firms. We find mainly that South-South trade agreements (reciprocal and non-reciprocal) affect positively on exporting firms performance at the aggregated level of trade. The same is true for certain North-South (reciprocal) trade agreements for exporting firms in raw materials.

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**Contact:** Laurent Didier - didier.laurent3@hotmail.com, Justinien Razafindravaosolonirina - romain.razafindravaosolorina@univ-reunion.fr.
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# REGIONAL TRADE AGREEMENTS AND EXPORTERS BEHAVIOR: EVIDENCE FROM SOME SMALL ISLANDS DEVELOPING STATES

Laurent Didier
*University of Reunion Island*

Justinien Razafindravaosolonirina
*University of Reunion Island*

## *Abstract*

This article assesses for the first time the impact of non-reciprocal and reciprocal regional trade agreements (RTAs), for four Small Island Developing States (SIDS), on the behavior of exporting firms. These countries are signatories to several trade agreements whose aim is to strengthen their regional integration and their participation to the world economy in order to alleviate their handicaps. Thus, the granting of trade preferences affects in the first place the exporting firms who wish to access these preferential markets. As these aspects are very underexplored by the literature, we rely on data from the World Bank (1997-2014) listing the characteristics of exporters both at the aggregated level and disaggregated by the merchandise trade products. Using panel gravity equations, the results highlighted the significance of RTAs on the behavior of these four SIDS exporting firms. We find mainly that South-South trade agreements (reciprocal and non-reciprocal) affect positively on exporting firms performance at the aggregated level of trade. The same is true for certain North-South (reciprocal) trade agreements for exporting firms in raw materials.

**Submitted:** July 30, 2020.

# 1. Introduction

Openness to international trade is a major shift in firms' life. Within the accelerating pace of globalization, Regional Trade Agreements (RTAs) signature become crucial as a way to enlarge outlets to foreign markets (Zhang et *al.*, 2018) . This is particularly relevant for Small Island Developing States (SIDS) where commercial integration is part of their development schemes. In fact, these states are characterized by an highly concentrated export structure on primary goods (OCDE, 2018), which enhance their exposition to term of trades' fluctuation (Santos-Paulino, 2010). This situation is aggravated when combined to diseconomies of scale and remoteness to the international production network. Therefore, the growing number of RTAs offers opportunities to exporting firms to penetrate concerned markets following preferential dispositions. However, as regards to selection effects between firms (Melitz, 2003) and heterogeneity (Bernard et *al.*, 2003), only a small portion of firms exports (Baccini et *al.*, 2017) and even a smaller part takes advantage of preferential treatments (Kawai et Wignaraja, 2011). Consequently, studies related to a joint analysis of export performance, heterogeneity among RTAs (Kohl et *al.*, 2016) and the specific situation of SIDS are somehow understudied.

Our article tries to fill this gap by using gravity models to estimate the effects of RTAs on exporting firms' behavior (number of exporters, entrants, exiters, surviving entrants, incumbents and export value per exporter) focusing specifically to four SIDS. Our choice of studied those SIDS (Mauritius, Dominican Republic, Sao-Tome and Principe and Timor-Leste) is dictated by the availability of firms data on the World Bank Database but these economies expose the main insular development models: MiRAB[1] for Sao-Tome and Principe and Timor-Leste, TouRAB[2] for the Dominican Republic and PROFIT[3] for Mauritius. Our contribution stands out with two major points. On the one hand, the use of the Export Dynamics Database (EDD) from the World Bank (1997-2014) relative to exporting firms' performance (Fernandes et *al.*, 2016), allow us to highlight aspects understudied in the literature by performing gravity analyses on the aggregated and disaggregated level, specifically on primary goods level. On the other hand, as far as we know, only the paper of Singh et *al*. (2018) focuses on this topic, treating exclusively effects of RTAs on Fijis' exporting firms. Consequently, our paper tries to provide an in-depth analysis of the impact of RTAs (reciprocal and non-reciprocal), North-South as well as South-South countries, on exporting firms' performance from the four studied economies as regard to their economic development model.

The paper is structured as follows. The section 2 describes the empirical approach followed by commented results on the section 3, when the last section concludes our work.

# 2. Empirical approach : the gravity model

Anderson and van Wincoop (2003) proposed a theoretically founded gravity model taking into account third countries partner impact on bilateral trade relationships. They introduced the notion of multilateral resistance with the following principle: if third countries have trade barriers with a country *i* and *j*, then these last countries tend to trade more between them than

[1] **Mi**gration, **R**emittances, **A**id and **B**ureaucracy : the model of economic development focus on remittances from migrating population et governmental aid (Bertram et Watters, 1985).

[2] **Tou**rism, **R**emittances, **A**id and **B**ureaucracy : a MiRAB model with tourism activities development, nourished by the diasporas' contribution as a support to public transfers (Guthunz et von Krosigk, 1996).

[3] **P**eople, **R**esources, **O**verseas management, **Fi**nance and **T**ransport : model incorporating economic diversification with heavy reliance to upmarket tourism and offshore finance combined with special capabilities accorded to local authorities (Baldacchino et Milne, 2000).

trading with third countries. To properly estimate this idea, a consensus emerges from the literature with the use of fixed effects (Baier and Bergstrand, 2007):

- Exporter-year and Importer-year fixed effects to control for couple of countries' tendency to trade importantly within them relative to their economic weight.
- Country pair fixed effects taking into account non-time-varying trade costs, observable or not. Therefore, traditional control variables such as distance, common language or contiguity are washed out from the estimations with their effects directly integrated via those fixed effects.

Consequently, we adapt our log-linearised gravity model for panel data analysis as follows, perfectly accounting for firms' microeconomic studies; integrating as dependent variable $Exporter_{ijt}$ (Tables 1-2) and as interest variable $RTA\_SIDS_{ijt}$ (Table 3):

$$lnExporter_{ijt} = \alpha_0 + \alpha_1 RTA\_SIDS_{ijt} + \lambda_{it} + \lambda_{jt} + \lambda_{ij} + \varepsilon_{ijt}$$

where $Exporter_{ijt}$ group six variables relative to various characteristics of exporting firms, individually estimated on the aggregated level of trade and disaggregated level of primary goods[4], $RTA\_SIDS_{ijt}$ is a binary variable which takes the value 1 if the exporter (i) which is a SIDS[5] and importer (j) belong to the same RTA (0 otherwise), $\lambda_{i(j)t}$ are exporters (importers) - years fixed effects approximating the previously described multilateral resistance terms, $\lambda_{ij}$ is the country-pair fixed effects controlling for specific characteristics of country pairs and $\varepsilon_{ijt}$ corresponds to the error term.

Table 1. Database and variables relative to exporting firms' behavior

| | |
|---|---|
| ***Exporter Dynamic Database*** | Sample: exporting firms characteristics for sixty exporting countries and 200 destinations over the year 1997-2014 (Cebeci et *al*., 2012). SIDS are the following: Mauritius, Dominican Republic, Sao-Tome and Principe and Timor-Leste.<br>Source : information requested through custom authorities |
| **Used Variables (*$Exporter_{ijt}$*)** | (1) Number of exporter: every exporting firm for the year t<br>(2) Number of entrants: non-exporting firm on the year t-1 but exporting on the year t<br>(3) Number of exiters: exporting firm on the year t-1 but non-exporting on the year t<br>(4) Number of surviving entrants : non-exporting firm on the year t-1 but exporting on the year t and t+1<br>(5) Number of incumbents: firm exporting on the year t-1 and t<br>(6) Export value per Exporter |

Note : Descriptive statistics of these variables are available on demand. Source: World Bank.

[4] Harmonized System (HS) Nomenclature for primary goods : live animals and animal products, vegetable Products, animal or vegetable fats.

[5] In our case, Mauritius, Dominican Republic, Sao-Tome and Principe, Timor-Leste.

Table 2. RTAs and exporters behavior : some mechanisms

| | |
|---|---|
| **Pro-trade effects** | - Trade liberalization through tariff reduction allows to decrease trade costs and improve firms competitiveness<br>- Improvement of market access with economies of scale and better production network for firms<br>- Higher margins of preferences allow to increase utilisation of preferences by firms |
| **Trade deterioration effects** | - Use of preferential measures increases fixed costs and exacerbates firms selection<br>- RTAs overlapping increases transaction costs and reduces trade facilitation<br>- Restrictive rules of origin impediment the utilisation of trade preferences by firms |

Table 3. Description of RTAs studied

| **RTA_SIDS$_{ijt}$** | **Entry into force** | **Source** |
|---|---|---|
| Cotonou | 2000 | World Trade Organization (WTO) |
| Cariforum-EU | 2008 | |
| CAFTA | 2006 | |
| COMESA | 1994 | |
| SADC | 1996 | |
| GSP EU | 1971 | |
| GSP Kazakhstan | 2010 | |
| GSP Russia | 2010 | |
| Duty-Free treatment for LDCs - China | 2010 | |

Note : Here exporting countries are SIDS in each agreements. EU: European Union; Cariforum: Caribean Forum with ACP countries; CAFTA: Free trade Agreement with Central American states, US and Dominican Republic; COMESA: Common Market of Eastern and Southern Africa; SADC: Southern Africa developing Community; GSP: Generalized Preferential System.

To estimate the robust impact of RTA on SIDS exporting firms' performance, we follow the specialised literature (Santos Silva and Tenreyro, 2006, 2011 ; Head and Mayer, 2015 ; Fally, 2015 ; Baier et *al*., 2019 ; Larch et *al.*, 2019). In fact, the log-linearised gravity equation from the Ordinary Least-Squared (OLS) generally leads to selection bias excluding observations where exports are nil. Besides, this form does not validate the nul conditional expectation to the error term necessary to linear regression. Therefore, regarding these problems and accounting for the large number of zero within our database (on the aggregated and disaggregated level), we estimate a PPML (poisson pseudo-maximum likelihood) model. This estimator corrects the troncation occurring within trade flows and is based on linear exponential law to estimate without bias our interest parameters even with the presence of heteroskedacity. Moreover, recent work on the subject, as in Baier et *al.* (2019) and Larch et *al.* (2019), suggest to include the three previously mentioned fixed effects to ally robustness of results and regression performance in the case of high dimensional samples. Consequently, our estimated gravity equation is as follows:

$$Exporter_{ijt} = exp\left(\alpha_0 + \alpha_1 RTA\_SIDS_{ijt} + \lambda_{it} + \lambda_{jt} + \lambda_{ij}\right) + \varepsilon_{ijt}$$

# 3. Effets of RTAs on exporters behavior

To analyse the obtained results, we will comment the aggregated level followed by the primary goods level and the three types of primary product according the HS classification (live animals and animal products, vegetable products, fat and oil from animals and plants).

First, few RTAs, essentially South-South, have significant effect on SIDS exporting firms' behavior at the aggregate level (Table 4). In fact, SIDS belonging to SADC (Mauritius) and preferential treatment from China (Timor-Leste) see the number of exporters expanding on average (Table 4, column 1), in contrast to GSP with Kazakhstan (Mauritius, Dominican Republic, Sao-Tome and Principe, Timor-Leste). Furthermore, the unilateral preferential agreement with China has the highest coefficient, with a 23 %[6] increase in the number of exporter from Timor-Leste to China. Concerning entrant exporters, note a positive effect of Cotonous (Mauritius, Dominican Republic, Sao-Tome and Principe, Timor-Leste), SADC and EU GSP, whereas there is a negative effect for Kazakhstan GSP (Table 4, column 2). This time, the highest coefficient is attributed to SIDS belonging to Cotonou, with a 97 % increase of number of entrants to the EU. For exiting firms (Table 4, column 3), the SADC and the Chinese unilateral treatment increase the number of exiting exporters, when the contrary occurs in the case of COMESA (Mauritius). The results also highlight the positive effect of the SADC and the unilateral preferential treatment with China on surviving entrants opposed to the CAFTA for the Dominican Republic (Table 4, column 4). The same result occurs for incumbents with South-South RTAs, this time a negative effect of the COMESA (Table 4, column 5). Concerning the exported value per exporter (Table 4, column 6), we find a positive effect from the CAFTA, the EU and Kazakhstan GSPs, which is not the case for the Russian GSP (Mauritius, Dominican Republic, Sao-Tome and Principe, Timor-Leste).

On the effects of RTAs on exporting firms' behavior concerning primary goods from SIDS, we remark more significant coefficients from reciprocal North-South RTAs, compared to other RTAs (Table 5). More specifically, our results highlight that the CAFTA and the Cariforum-EPA have often positive effects on exporting firms' behavior. For instance, as member of the CAFTA, the Dominican Republic is seeing the number of primary goods exporter, entrants, exiters, surviving entrants and incumbents increases compared to the Cariforum-EPA. Moreover, results from the SADC are only significant for incumbents (-24%) and exported value per exporter (109%) on primary goods. The unilateral preferential treatment with China affects positively the number of exporters to China. For the Russia GSP, there is a negative effect toward the number of entrants and incumbent exporters to Russia.

Finally, by focusing on the disaggregated level of primary goods, our results confirm a more significant positive effect of North-South reciprocal RTAs relative to the other forms of RTAs (Table 6-7-8). First, firms exporting live animals and animal products, are affected positively by the CAFTA, SADC, Cariforum-EPA and unilateral preferential treatment with China. It is the case for the number of exporters and the value of exported goods per exporter (Table 6). Second, exporters of vegetable products participating to the CAFTA and the Cariforum-EPA have more significant coefficients unlike to Russian GSP (Table 7). Third, for firms exporting fat and oil from animals and plants, results are less significant attributed to the principal characteristics of these products. Then, North-South RTAs are those presenting the most significant coefficients (Table 8).

# 4. Conclusion

Regional Trade Agreements are opportunities for developing countries, particularly for SIDS, to have access to larger markets and networks affecting exporting firms' performance through preferential advantages. However, we must admit the lack of empirical evidence related to the diversity of RTAs and their possible heterogeneous effects on exporting firms' behavior. It is in this way that we investigate in this article the effects of RTAs on various exporting firms

[6] (Exponential(coefficient)-1)X100

behavior from four SIDS (Mauritius, Dominican Republic, Sao-Tome and Principe and Timor-Leste) on the aggregated level of trade and primary goods.

Our estimates from gravity models highlight two important results. *Primo*, at the aggregated level of trade, SIDS participations to RTAs impact significantly firms' behavior, especially when it's South-South RTA. By comparison, we highlight that firms' performance is particularly enhanced for Mauritius with its participation to the SADC. The same is found for the unilateral preferential treatment with China toward LDCs, acting positively upon the number of exporter from Timor-Leste. *Secundo*, on the primary goods level, we find that non-reciprocal North-South RTA, such as the CAFTA and the Cariforum-EPA (Dominican Republic), are more supportive to firms' performance (number of exporters, surviving firms and incumbents ) than other RTAs. Hence, these first results insist on the fact that trade policies' analysis should include studies on exporting firms' behavior, which are the first to be impacted by preferential disposition on RTAs. Moreover, two types of insular economies stand out from signing reciprocal RTAs concerning exporting firms' performance: Mauritius (on economic diversification) and the Dominican Republic (on tourism, public and external transfers).

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Table 4. Exporting firms' behavior and RTA (aggregated data)

| | (1) Number of exporters | (2) Number of entrants | (3) Number of exiters | (4) Number of surviving entrants | (5) Number of incumbents | (6) Export value per exporter |
|---|---|---|---|---|---|---|
| Cotonou_SIDS$_{ijt}$ | 0.25 | 0.68*** | 0.31 | -0.27 | 0.61 | 0.27 |
| | (0.17) | (0.19) | (0.34) | (0.43) | (0.39) | (0.49) |
| CAFTA_SIDS $_{ijt}$ | -0.04 | 0.006 | -0.09 | -0.27*** | -0.02 | -0.43*** |
| | (0.05) | (0.08) | (0.08) | (0.09) | (0.06) | (0.15) |
| EPA_Caraïbes_SIDS $_{ijt}$ | -0.03 | 0.02 | 0.08 | -0.13 | -0.04 | 0.09 |
| | (0.05) | (0.08) | (0.08) | (0.09) | (0.06) | (0.15) |
| COMESA_SIDS $_{ijt}$ | -0.30 | -0.06 | -0.50* | 0.42 | -1.08** | -0.64 |
| | (0.27) | (0.33) | (0.27) | (0.79) | (0.56) | (0.52) |
| SADC_SIDS $_{ijt}$ | 0.17*** | 0.22*** | 0.26*** | 0.21* | 0.14** | 0.02 |
| | (0.06) | (0.07) | (0.09) | (0.12) | (0.06) | (0.16) |
| GSP_EU_SIDS $_{ijt}$ | | 0.46** | 0.01 | | -0.07 | -1.49*** |
| | | (0.21) | (0.41) | | (0.18) | (0.43) |
| GSP_Kazakhstan_SIDS $_{ijt}$ | -0.82** | -0.99*** | -0.49 | 0.004 | -0.32 | -1.51*** |
| | (0.33) | (0.37) | (0.40) | (0.85) | (0.63) | (0.42) |
| GSP_Russia_SIDS $_{ijt}$ | -0.08 | -0.29 | -0.04 | -0.25 | 0.14 | 0.65*** |
| | (0.12) | (0.19) | (0.23) | (0.24) | (0.10) | (0.22) |
| LDC_China_SIDS $_{ijt}$ | 0.21*** | | 0.28*** | 0.22* | 0.23*** | 0.52 |
| | (0.06) | | (0.05) | (0.12) | (0.03) | (0.50) |
| Number of observations | 92166 | 81393 | 74299 | 59117 | 72684 | 73204 |
| $R^2$ | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |

In parenthesis, the robust standard errors corrected from heteroskedasticity and adjusted to the clustered effect of country-pair. ***, **, * indicate respectively significant coefficient at 1 %, 5 % et 10 %. Exporter-year, Importer-year and country-pair fixed effects are included in our PPML estimations. Blanks mean non-estimated variables due to the lack of observations. The studied SIDS are: Mauritius, the Dominican Republic, Sao-Tome and Principe and Timor-Leste.

Table 5. Exporting firms' behavior and RTA (primary goods)

| | (1) Number of exporters | (2) Number of entrants | (3) Number of exiters | (4) Number of surviving entrants | (5) Number of incumbents | (6) Export value per exporter |
|---|---|---|---|---|---|---|
| CAFTA_SIDS $_{ijkt}$ | 0.28*** | 0.37*** | 0.27*** | 0.46*** | 0.41*** | 0.08 |
| | (0.04) | (0.06) | (0.06) | (0.11) | (0.05) | (0.16) |
| EPA_Caraïbes_SIDS $_{ijkt}$ | 0.14*** | 0.07 | 0.19*** | 0.31*** | 0.35*** | 0.36** |
| | (0.04) | (0.06) | (0.05) | (0.10) | (0.06) | (0.15) |
| SADC_SIDS $_{ijkt}$ | 0.02 | 0.06 | 0.008 | -0.02 | -0.28** | 0.74* |
| | (0.07) | (0.011) | (0.11) | (0.27) | (0.13) | (0.41) |
| GSP_Russia_SIDS $_{ijkt}$ | -0.61*** | -0.39* | 0.14 | | -0.73** | 0.40 |
| | (0.16) | (0.22) | (0.23) | | (0.34) | (0.43) |
| LDC_China_SIDS $_{ijkt}$ | 0.16 | 0.15 | 0.01 | 0.48 | 0.34 | 0.25 |
| | (0.14) | (0.21) | (0.20) | (0.38) | (0.25) | (0.47) |
| Number of obs | 241049 | 208594 | 175190 | 117384 | 167467 | 121969 |
| $R^2$ | 0.99 | 0.98 | 0.98 | 0.97 | 0.99 | 0.97 |

In parenthesis, the robust standard errors corrected from heteroskedasticity and adjusted to the clustered effect of country-pair. ***, **, * indicate respectively significant coefficient at 1 %, 5 % et 10 %. Exporter-year, Importer-year and country-pair fixed effects are included in our PPML estimations. Blanks mean non-estimated variables due to the lack of observations. The studied SIDS are: Mauritius, the Dominican Republic, Sao-Tome and Principe and Timor-Leste.

Table 6. Exporting firms' behavior and RTA (primary goods – live animals and animal products)

| | (1) Number of exporters | (2) Number of entrants | (3) Number of exiters | (4) Number of surviving entrants | (5) Number of incumbents | (6) Export value per exporter |
|---|---|---|---|---|---|---|
| CAFTA_SIDS $_{ijkt}$ | 0.44*** | 0.35* | 0.30 | 0.24 | 0.87*** | 0.42 |
| | (0.11) | (0.19) | (0.19) | (0.50) | (0.20) | (0.37) |
| EPA_Caraïbes_SIDS $_{ijkt}$ | -0.29* | -0.32 | -0.19 | 1.01 | 0.09 | 1.37** |
| | (0.15) | (0.22) | (0.27) | (1.17) | (0.26) | (0.54) |
| SADC_SIDS $_{ijkt}$ | 0.26** | 0.26 | 0.16 | 1.07** | 0.09 | 1.67*** |
| | (0.12) | (0.22) | (0.21) | (0.49) | (0.20) | (0.51) |
| GSP_Russia_SIDS $_{ijkt}$ | -0.16 | 0.21 | -0.02 | | | |
| | (0.42) | (0.54) | (0.29) | | | |
| LDC_China_SIDS $_{ijkt}$ | 0.64 | 0.50 | -0.60 | | | 1.70*** |
| | (0.39) | (0.40) | (0.47) | | | (0.49) |
| Number of observations | 74389 | 64831 | 54169 | 36210 | 51603 | 36165 |
| $R^2$ | 0.99 | 0.98 | 0.98 | 0.97 | 0.99 | 0.97 |

In parenthesis, the robust standard errors corrected from heteroskedasticity and adjusted to the clustered effect of country-pair. ***, **, * indicate respectively significant coefficient at 1 %, 5 % et 10 %. Exporter-year, Importer-year and country-pair fixed effects are included in our PPML estimations. Blanks mean non-estimated variables due to the lack of observations. The studied SIDS are: Mauritius, the Dominican Republic, Sao-Tome and Principe and Timor-Leste.

Table 7. Exporting firms' behavior and RTA (primary goods – vegetable products)

| | (1) Number of exporters | (2) Number of entrants | (3) Number of exiters | (4) Number of surviving entrants | (5) Number of incumbents | (6) Export value per exporter |
|---|---|---|---|---|---|---|
| CAFTA_SIDS $_{ijkt}$ | 0.28*** | 0.38*** | 0.29*** | 0.46*** | 0.41*** | -0.05 |
| | (0.04) | (0.06) | (0.06) | (0.11) | (0.06) | (0.19) |
| EPA_Caraïbes_SIDS $_{ijkt}$ | 0.16*** | 0.09 | 0.21*** | 0.30*** | 0.37*** | 0.29* |
| | (0.04) | (0.06) | (0.06) | (0.10) | (0.06) | (0.15) |
| SADC_SIDS $_{ijkt}$ | -0.02 | 0.06 | -0.004 | -0.64* | -0.47*** | -0.44 |
| | (0.10) | (0.15) | (0.15) | (0.35) | (0.18) | (0.50) |
| GSP_Russia_SIDS $_{ijkt}$ | -0.66*** | -0.42* | 0.16 | | -0.84** | 0.37 |
| | (0.18) | (0.24) | (0.26) | | (0.36) | (0.42) |
| LDC_China_SIDS $_{ijkt}$ | 0.05 | 0.03 | 0.17 | 0.38 | 0.27 | -0.36 |
| | (0.14) | (0.24) | (0.22) | (0.40) | (0.26) | (0.40) |
| Number of observations | 147854 | 127458 | 107260 | 71462 | 102019 | 76585 |
| $R^2$ | 0.99 | 0.97 | 0.98 | 0.97 | 0.99 | 0.98 |

In parenthesis, the robust standard errors corrected from heteroskedasticity and adjusted to the clustered effect of country-pair. ***, **, * indicate respectively significant coefficient at 1 %, 5 % et 10 %. Exporter-year, Importer-year and country-pair fixed effects are included in our PPML estimations. Blanks mean non-estimated variables due to the lack of observations. The studied SIDS are: Mauritius, the Dominican Republic, Sao-Tome and Principe and Timor-Leste.

Table 8. Exporting firms' behavior and RTA (primary goods – fats and oil from plants and animals)

| | (1) Number of exporters | (2) Number of entrants | (3) Number of exiters | (4) Number of surviving entrants | (5) Number of incumbents | (6) Export value per exporter |
|---|---|---|---|---|---|---|
| CAFTA_SIDS $_{ijkt}$ | -0.21 | -0.11 | -0.32 | 0.96* | -0.33 | 1.05** |
| | (0.14) | (0.26) | (0.23) | (0.52) | (0.26) | (0.52) |
| EPA_Caraïbes_SIDS $_{ijkt}$ | -0.46** | -0.32 | -0.35 | 0.25 | -0.53 | 1.52* |
| | (0.18) | (0.33) | (0.31) | (0.74) | (0.33) | (0.83) |
| SADC_SIDS $_{ijkt}$ | -0.18 | -0.28 | -0.16 | 0.24 | -0.26 | 2.72*** |
| | (0.18) | (0.27) | (0.28) | (0.81) | (0.38) | (0.61) |
| GSP_Russia_SIDS $_{ijkt}$ | -0.73* | -1.28 | | | | |
| | (0.39) | (0.78) | | | | |
| Number of observations | 18806 | 16305 | 13761 | 9711 | 13845 | 9219 |
| $R^2$ | 0.99 | 0.96 | 0.96 | 0.95 | 0.99 | 0.96 |

In parenthesis, the robust standard errors corrected from heteroskedasticity and adjusted to the clustered effect of country-pair. ***, **, * indicate respectively significant coefficient at 1 %, 5 % et 10 %. Exporter-year, Importer-year and country-pair fixed effects are included in our PPML estimations. Blanks mean non-estimated variables due to the lack of observations. The studied SIDS are: Mauritius, the Dominican Republic, Sao-Tome and Principe and Timor-Leste.