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Exchange rate regimes, trade in raw materials and exporters behavior: Evidence from some Small Island Developing States (SIDS)

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Abstract

I investigate the effects of de facto exchange rate regimes (ERRs) on exporters behavior in the particular case of two Small Island Developing States (Dominican Republic and Mauritius). We know that exchange rates are an important indicator of competitiveness for firms in international economic relations and the choice of ERR is heavily crucial for SIDS due to their specific situation. Based on a structural gravity model in panel over the period 1997-2014 at the firm-level, I find statistically significant results of de facto ERRs on some exporters behavior for firms specialised in raw materials. The results underline the presence of heterogeneous effects across countries and products on the exporting firms performance.

1.   Introduction

The role of exchange rate policy in strengthening the exporting firms performance merits careful consideration, particularly for Small Island Developing States (SIDS). Indeed, diseconomies of scale and structural distortions are more present for these countries undermining their macroeconomic performance and their economic integration (Blancard and Hoarau, 2016). In the case of international trade for SIDS, fixed costs for exporting firms represent heavily impediments because their economic model is characterised by a high trade openness, a dependence on a single trading partner and a high exposure to terms-of-trade shocks relative to the other countries. Consequently, implement exchange rate adjustment in SIDS is one of the more complex issues that national authorities face (IMF, 2017), where any variability in the exchange rate will translate in higher costs. In this context, the literature is not clear about the effectiveness of exchange rate regimes (ERRs) on international trade. Much less attention has been paid to see whether the nature of ERRs matters for trade performance at the firm level. I try to fill the gap in the empirical literature by analysing the impact of *de facto* ERRs (soft pegs *versus* floating arrangements) on exporters behavior for two SIDS[1]: Dominican Republic and Mauritius. The choice of these economies can be explained by the fact that they have dissimilar development strategies directly affecting their political economies and their economic model: Tourab[2] and Profit[3], respectively.

This paper makes a threefold contribution. First, I investigate the effects of soft pegs and floating arrangements on exporting firms performance, whereas the literature focuses essentially on the effects of hard pegs on trade through currency unions (Rose, 2000 ; Glick and Rose, 2002 ; Glick and Rose, 2016 ; Larch et *al.*, 2019). Second, this is the first study that estimates the impact of the nature of bilateral ERRs on international trade at the firm level with a *de facto* classification[4]. Indeed,

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[1]Only these two SIDS have enough observations in these two databases used to study these effects.

[2]Tourism, Remittances, Aid and Bureaucracy : a MiRAB (Migration, Remittances, Aid and Bureaucracy) model with tourism activities development, nourished by the diasporas contribution as a support to public transfers (Guthunz et von Krosigk, 1996).

[3]People, Resources, Overseas management, Finance and Transport : 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).

[4]The use of *de jure* classification in empirical analysis has been significantly reduced due to inconsistencies between reported and actual policies in many cases. "The profession has concluded

Levy-Yevati and Sturzeneger (2003) show that less flexible exchange rate regimes are associated with slower growth for developing countries, whereas there is not significant impact for developed countries on growth. Klein and Shambaugh (2006) use *de facto* ERRs and they find that fixed exchange rates are statistically signficant, where pegging allows to increase bilateral trade. Then, Qureshi and Tsangarides (2012) find that fixed ERRs enhance African trade because this regime helps to anchor inflation expectations and sustain output growth. Santana-Gallego and Pérez-Rodriguez (2019) find that other intermediate ERRs, beyond CUs and pegs, also improve bilateral trade. Third, few papers assess the export performance at the firm level through micro-behaviors, particularly for SIDS where there is very few research on this. For instance, Fernandes et *al.* (2016) show that exporter characteristics and dynamics vary strongly across countries and the stage of development.

Using disaggregated trade data for raw materials with the Exporter Dynamic Database of World Bank, I estimate the impact of *de facto* ERRs (Harms and Knaze, 2018) on exporters behavior (number of exporters, entrants, exiters, surviving entrants, incumbents and the export value per exporter) over the period 1997-2014. I employ a theory-based and robust structural gravity model in panel with Poisson Pseudo-Maximum Likelihood (PPML) three-way fixed effects (Santos Silva and Tenreyro, 2006 ; Baier et *al.*, 2019 ; Larch et *al.*, 2019).

The paper is structured as follows. Section 2 presents the empirical approach applied. Section 3 analyzes the results and Section 4 concludes.

2. Empirical approach

2.1. Data

The dependent variables comes from the Exporter Dynamic Database of World Bank[5] covering the micro-characteristics (Table 1) of the exporter sector in both developed and developing countries from 1997 to 2014 (Table 2). The data are established by the export-level customs data based on annual exporter transactions and they are available at the country-year level, country-product-year, country-destination-year and country-product-destination-year. In this paper, I will use samples at the country-product-destination-year in raw materials (Tables 3 and 4). There are some reasons to believe that exchange rate regimes affect differently international

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that *de facto* classifications make a lot more sense than *de jure* ones" (Rose, 2011).

[5]More details about the database are provided in Cebeci et *al.* (2012). `https://datacatalog.worldbank.org/dataset/exporter-dynamics-database`

trade across products, particularly agricultural and raw materials exchanges. For instance, there is a strong possibility that these types of products are more responsive to exchange rate volatility affecting prices and exporters behavior. Due to the restricted sample of countries in the Exporter Dynamic Database, only two SIDS have sufficient observations to estimate the coefficients: Dominican Republic and Mauritius.

The key variables about *de facto* ERRs come from Harms and Knaze (2018), where the data on bilateral ERRs is based on information provided by Ilzetzki et al. (2019). The *de facto* ERRs (Table 5) range from 1 (no separate legal tender or currency union) to 13 (freely floating), where they may differ from countries' officially announced arrangements (*de jure* ERRs[6]).

2.2. A structural gravity model

I will follow the usual practice by estimating expected bilateral trade flows using specifications based on the gravity model. I perform then a theory-consistent structural gravity model by taking into account multilateral resistance terms (Anderson and van Wincoop, 2003 ; Head and Mayer, 2014). Equations 1-2 are based on Anderson and van Wincoop (2003) who refined the work of Anderson (1979) by delivering the following structural gravity system of trade:

$$X_{ijt} = \frac{Y_{it}}{\Omega_{it}} \frac{X_{jt}}{\Phi_{jt}} \phi_{ijt}, \tag{1}$$

where $Y_i = \sum_j X_{ij}$ is the value of total production, $X_j = \sum_i X_{ij}$ is the value of expenditure, and Ω_{it} and Φ_{jt} the multilateral resistance terms defined as

$$\Phi_{jt} = \sum_l \frac{\phi_{jtl} Y_l}{\Omega_{lt}} \qquad \text{and} \qquad \Omega_{it} = \sum_l \frac{\phi_{lit} X_l}{\Phi_{lt}}. \tag{2}$$

Here, bilateral trade X_{ijt} is a function of supply, demand, and bilateral frictions. The supplier term in the structural gravity equation $S_{it} = \frac{Y_{it}}{\Omega_{it}}$ weights total production Y_{it} by the exporter's multilateral resistance Ω_{it}, and the demand term $M_{jt} = \frac{X_{jt}}{\Phi_{jt}}$ weights total expenditure X_j by the importer's multilateral resistance Φ_{jt}. More precisely, Ω_{it} and Φ_{jt} are structural terms developed by Anderson and van Wincoop (2003) as the inward and the outward multilateral resistances, respectively.

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[6]The *de jure* ERRs are published in the AREAER (Annual Report on Exchange Arrangements and Exchange Restrictions) of IMF. See Rose (2011) for more details about the preference to use *de facto* ERRs rather than *de jure* ERRs.

One of the important application of the gravity model is to estimate the effect of bilateral trade determinants. Most trade models express bilateral accessibility through $0 < \phi_{ij} = \tau_{ij}^\theta < 1$, in which θ is the elasticity of trade flows to trade costs, and trade costs τ_{ij} contain the bilateral elements[7] defining the level of frictions to trade between the two partners.

I employ PPML with fixed effects developed by Santos Silva and Tenreyro (2006) and Fally (2015). The log-linear form is unable to handle zero trade flows because the logarithm of zero is undefined. In this respect, PPML is the empirical method most often employed because of its robustness[8] compared with the other estimators which have large biases (Santos Silva and Tenreyro, 2011). Indeed, according to their Monte Carlo simulation, they show that the PPML-estimator is well-behaved and performs well when the data can exhibit over-dispersion and also have excess zeros. Furthermore, in our case I use PPML with three-way fixed effects as suggested by Baier et al., (2019) and Larch et al. (2019). They address computational issues with the three-way fixed effects currently recommended in the gravity literature with an iterative PPML estimation procedure facilitating their inclusion. The estimation equation is as follows:

$$Exporter_{ijt} = exp(\beta_1 SoftPegs_{ijt} + \beta_2 Floating_{ijt} + F_{it} + F_{jt} + F_{ij})\eta_{ijt} \qquad (3)$$

where $Exporter_{ijt}$ is exporter micro characteristics of country i from the country j at year t. More precisely, this variable has two sets of data allowing us to assess the main exporters behavior in international trade. First, the mean exports per exporter. Second, the number of exporters, entrants, exiters, surviving entrants and incumbents. The variables $SoftPegs_{ijt}$ and $Floating_{ijt}$ allow to better distinguish soft pegs[9] and floating arrangements[10] (Table 5). We know that fixed exchange rates are more suitable to insulate the economy against nominal shocks while floating exchange rates are better in absorbing real shocks. The effectiveness with changes in terms of trade shocks depends on the nature of the ERR. Each variable is estimated separately due to the dissimilar development strategy of these SIDS, i.e. the Dominican Republic and Mauritius (Tables 7-8-9). For instance, $SoftPegsDOM$ equals 1 if the

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[7]Among which geographical distance, common language, shared border, currency, and common history.

[8]"... when there is evidence of heteroskedasticity, the Poisson pseudo-maximum-likelihood estimator should be used as a substitute for the standard log linear model (Santos Silva and Tenreyro, 2006).

[9]Exchange rates that are currently fixed in value (or a narrow range of values) to some other currency or basket of currencies.

[10]De facto moving band +/-5% managed floating or freely floating.

Dominican Republic (i) applies soft pegs arrangement to its trading partners (j) at the year t (0 otherwise), and so on. In our case, there are not SIDS concerned by hard pegs in our samples. SIDS are interesting countries to study because any variability in the exchange rate will translate in higher costs relative to the other countries (Table 6). Moreover, SIDS have limited access to international markets and the adverse effects of volatility have more pronounced effects on their macroeconomic variables.

Following Baldwin and Taglioni (2006), Baier and Bergstrand (2007), Head and Mayer (2014), I also include three sets of fixed effects commonly practiced in the economic literature to have robust[11] results. Unilateral time-variant (GDP, population, GDP per capita) and bilateral time-invariant (distance, common language, contiguity) determinants of trade are absorbed in specifications using these fixed effects due to the collinearity issue between them. Indeed, exporter-time and importer-time fixed effects (F_{it} and F_{jt}) take into account changes in multilateral resistance over time (Equation 2). This approach captures other trade costs across other export and import markets through relative price effects. The exclusion of these terms leads to an omission bias with more unobserved trade barriers. Country-pair fixed effects (F_{ij}) correct the omitted variable bias because the unobserved variables could be correlated with the bilateral characteristics of the dyadic variables.

3. Results

3.1. *De facto* ERRs and exporters behavior for raw materials trade

Table 10 reports the results concerning the impact of *de facto* ERRs on exporters behavior for raw materials[12]. I find dissimilar effects of these bilateral ERRs between the Dominican Republic and Mauritius. Indeed, soft pegs and float arrangements negatively affect the exporting firms performance for the first (number of exporters, exiters, incumbents, export value per exporter), whereas the reverse effect appears for Mauritius (number of incumbents, export value per exporter). On the whole, I find that soft pegs deteriorate more exporting performance than floating arrangements. As suggested by Bacchetta and van Wincoop (2000), adopting a fixed exchange-rate system does not necessarily lead to more trade. Indeed, "when consumption

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[11]I also use a Huber-White estimator to avoid any heteroscedasticity issue and thus to have robust standard errors clustered by country-pair.

[12]Note that I estimated the variables without SIDS with a larger panel of countries, where the results are less statistically significant than SIDS estimates (Tables 14-15-16-17).

and leisure are complements, the wage rate is even more correlated with domestic demand. In that case, the first factor dominates, and trade is higher in a floating exchange-rate system."

3.2. *De facto* ERRs and exporters behavior for live animal and animal products

Concerning the impact of *de facto* ERRs on exporters behaviors for live animal and animal products, I show that the results are much less pronounced (Table 11). None coefficient for the Dominican Republic is statistically significant, only the export value per exporter is positively affected, whatever the bilateral ERR for Mauritius. Moreover, the number of surviving entrants decreases with the presence of floating arrangements between Mauritius and its trading partners. I suppose that because floating exchange rates are more volatile than fixed ones, exporting firms face to higher transaction costs undermining export performance.

3.3. *De facto* ERRs and exporters behavior for vegetable products

Once again, the firms performance in Dominican Republic is the most affected by these bilateral ERRs relative to Mauritius (Table 12). I find that only soft pegs have significant effects on the number of surviving entrants (- 45.6%) and the number of incumbents (+ 19.7%) for Mauritius. For the Dominican Republic, soft pegs and floating arrangements decrease the number of exporters, exiters, incumbents and the export value per exporter. Because SIDS are specialised in raw materials and given a high degree of openness, devaluations are more likely to be reflected in higher domestic price pressures, which penalise firms competitiveness.

3.4. *De facto* ERRs and exporters behavior for animal and vegetable oils products

Table 13 presents the results for firms exporting animal and vegetable oils products. Th number of surviving entrants is positively impacted by soft pegs and floating arrangements for the Dominican Republic. Only soft pegs for Mauritius improve the export value per exporter, whereas in the other cases there is a trade-deteriorating effect. Then, soft pegs for Mauritius but also floating arrangements for the Dominican Republic have a good influence on the number of exiters with a decrease, where the highest magnitude is for this latter. In general, I find that floating arrangements

deteriorate more the exporting firms performance than soft pegs for these products, mainly for the Dominican Republic. We know that a fixed exchange rate will eliminate the exchange rate risk and will give producers the opportunity to plan their future production levels and investment plans with lower uncertainty. Like in all previous results, the number of entrants is not impacted by these bilateral ERRs.

4. Conclusion

This paper shows that there is an impact of *de facto* exchange rate regimes (ERRs) on exporters behavior for some SIDS such as Dominican Republic and Mauritius. I find heterogeneous effects of this category of ERRs on exporting firms performance, where the results vary across countries and products. Based on micro-characteristics of exporters specialised in raw materials, three main results could be retained. First, soft pegs and floating arrangements have a negative effect on the exporting firms performance (number of exporters, incumbents, surviving entrants), essentially for the Dominican Republic unlike Mauritius. Second, firms exporting vegetable products but also animal and vegetable oils see their exporting performance deteriorate, whereas the results are much less significant for firms exporting live animal and animal products. Third, soft pegs and floating arrangements particularly decrease the number of exiters in the case of Dominican Republic, whereas these same bilateral ERRs increase the export value per exporter for Mauritius. Finally, these preliminary results can be of the interest for policy makers by evaluating the impact of the choice of ERRs on macroeconomic performance and the exporting firms competitiveness.

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Table 1: Exporter Dynamic Database: variables used

Variables	Description
Number of exporters	Any firms that exports in year t
Number of entrants	A firm that does not export in year t-1 but exports in year t
Number of exiters	A firm that exports in year t-1 but does not export in year t
Number of incumbents	A firm that exports in both years t-1 and t
Number of surviving entrants	A firm that does not export in year t-1 but exports in both years t and t+1
Export value per exporter	

Table 2: List of countries (Exporter Dynamic Database of World Bank)

Exporting countries	Destination countries			
Albania	Aruba	Denmark	Laos	Qatar
Burkina Faso	Afghanistan	Dominican Republic	Lebanon	Reunion
Bangladesh	Angola	Algeria	Liberia	Roumania
Bulgaria	Anguilla	Ecuador	Libya	Russia
Bolivia	Aland Islands	Egypt	Saint Lucia	Rwanda
Botswana	Albania	Eritrea	Liechtenstein	Saudi Arabia
Chile	Andorra	Western Sahara	Sri Lanka	Sudan
Ivory Coast	Netherlands Antilles	Spain	Lesotho	Senegal
Cameroon	United Arab Emirates	Estonia	Lithuania	Singapore
Colombia	Argentina	Ethiopia	Luxembourg	South Georgia and the South Sandwich Islands
Costa Rica	Armenia	Finland	Latvia	Saint Helena, Ascension and Tristan da Cunha
Denmark	American Samoa	Fiji	Macao	Svalbard and Jan Mayen Island
Dominican Republic	Antartic	Falkland Islands	Saint Martin	Solomons Islands
Equator	French Southern and Antartic Lands	France	Morocco	Sierra Leone
Egypt	Antigua and Barbuda	Faroe Islands	Monaco	Salvador
Spain	Australia	Micronesia	Moldavia	San Marino
Ethiopia	Austria	Gabon	Madagascar	Somalia
Gabon	Azerbaijan	United Kingdom	Maldives	Saint Pierre and Miquelon
Georgia	Burundi	Georgia	Mexico	Serbia
Guinea	Belgium	Guernsey	Marshall Islands	South Sudan
Guatemala	Benin	Ghana	North Macedonia	Sao Tome and Principe
Croatia	Burkina Faso	Gibraltar	Mali	Suriname
Iran	Bangladesh	Guinea	Malta	Slovakia
Jordania	Bulgaria	Guadeloupe	Myanmar	Slovenia
Kenya	Bahrain	Gambia	Montenegro	Sweden
Kyrgyzstan	Bahamas	Guinea-Bissau	Mongolia	Swaziland
Cambodia	Bosnia and Herzegovina	Equatorial Guinea	Northern Mariana Islands	Seychelles
Kuwait	Saint-Barthélemy	Greece	Mozambique	Syria
Laos	Belarus	Grenade	Mauritania	Turks and Caicos Islands
Lebanon	Belize	Groenland	Montserra	Tchad
Sri Lanka	Bermuda	Guatemala	Martinique	Togo
Morocco	Bolivia	Guyane	Mauritius	Thailand
Madagascar	Brazil	Guam	Malawi	Tajikistan
Mexico	Barbados	Guyana	Malaysia	Tokelau
North Macedonia	Brunei	Hong Kong	Mayotte	Turkmenistan
Mali	Bhutan	Heard Island and McDonald Islands	Namibia	Timor Leste
Burma	Bouvet Islands	Honduras	New Caledonia	Tonga
Mauritius	Botswana	Croatia	Niger	Trinidad and Tobago
Malawi	Central African Republic	Haiti	Norfolk Island	Tunisia
Niger	Canada	Hungary	Nigeria	Turkey
Nicaragua	Cocos Islands	Indonesia	Nicaragua	Tuvalu
Norway	Suisse	Isle of Man	Niue	Taiwan
Nepal	Chile	India	Netherlands	Tanzania
Pakistan	China	British Indian Ocean Territory	Norway	Uganda
Peru	Ivory Coast	Ireland	Nepal	Uganda
Portugal	Cameroon	Iran	Nauru	Ukraine
Paraguay	Democratic Republic of Congo	Iraq	New Zealand	Uruguay
Roumania	Congo	Island	Oman	United States of America
Rwanda	Cook Islands	Israel	Pakistan	Uzbekistan
Senegal	Colombia	Italia	Panama	Vatican
Salvador	Comoros	Jamaica	Pitcairn Islands	Saint Vincent and the Grenadines
Sao Tome and Principe	Cabo Verde	Jersey	Peru	Venezuela
Swaziland	Costa Rica	Jordania	Philippines	Birtish Virgin Islands
Thailand	Cuba	Japan	Palau	US Virgin Islands
Timor Leste	Curacao	Kazakhstan	Papua New Guinea	Vietnam
Tanzania	Christmas Islands	Kenya	Poland	Vanuatu
Uganda	Cayman Islands	Kyrgyzstan	Porto Rico	Wallis and Futuna
Uruguay	Cyprus	Cambodia	North Korea	Samoa
Yemen	Czechia	Kiribati	Portugal	Yemen
South Africa	Germany	Saint Kitts and Nevis	Paraguay	South Africa
Zambia	Djibouti	South Korea	Palestine	Zambia
	Dominica	Kuwait	French Polynesia	Zimbabwe

Table 3: Descriptive statistics

	Observation	Mean	Standard errors	Min	Max
RAW MATERIALS					
Number of exporters	244329	8.33	37.96	0	2796
Number of entrants	219274	3.54	13.81	0	1125
Number of exiters	180219	3.94	14.47	0	1113
Number of surviving entrants	156413	1.64	6.39	0	524
Number of incumbents	219274	4.65	0.03	24.64	1676
Export value per exporter	121969	341103	0.03	1465961	2.16e+08
SoftPegsDOM	244329	0.009	0.09	0	1
FloatingDOM	244329	0.006	0.07	0	1
SoftPegsMUS	244329	0.003	0.06	0	1
FloatingMUS	244329	0.001	0.03	0	1
LIVE ANIMAL AND ANIMAL PRODUCTS					
SoftPegsDOM	75523	0.06	0.08	0	1
FloatingDOM	75523	0.04	0.06	0	1
SoftPegsMUS	75523	0.04	0.06	0	1
FloatingMUS	75523	0.001	0.03	0	1
VEGETABLE PRODUCTS					
SoftPegsDOM	149815	0.01	0.10	0	1
FloatingDOM	149815	0.007	0.05	0	1
SoftPegsMUS	149815	0.003	0.05	0	1
FloatingMUS	149815	0.001	0.03	0	1
ANIMAL AND VEGETABLE OILS					
SoftPegsDOM	18991	0.009	0.09	0	1
FloatingDOM	18991	0.006	0.08	0	1
SoftPegsMUS	18991	0.003	0.06	0	1
FloatingMUS	18991	0.001	0.03	0	1

Note: DOM means Dominican Republic, MUS means Mauritius. The product classification system used is the Harmonized System at 6-digit level (HS6).

Table 4: Weight of each type of product in the total exports (1997-2014, in %)

	Raw materials	Live animal and animal products
Dominican Republic	7.8	0.35
Mauritius	11.3	10.32
	Vegetable products	Animal and vegetable oils
Dominican Republic	7.32	0.12
Mauritius	0.88	0.09

Table 5: *De facto* exchange rate regimes

De facto exchange rate regimes	Bilateral exchange rate regime
Hard pegs	
No separate legal tender or currency union	1
Pre announced peg or currency board arrangement	2
Soft pegs	
Pre announced horizontal band that is narrower than or equal to +/-2%	3
De facto peg	4
Pre announced crawling peg; de facto moving band narrower than or equal to +/-1%	5
Pre announced crawling band / de facto horizontal band that is narrower than or equal to +/-2%	6
De facto crawling peg	7
De facto crawling band that is narrower than or equal to +/-2%	8
Pre announced crawling band that is wider than or equal to +/-2%	9
De facto crawling band that is narrower than or equal to +/-5%	10
Moving band that is narrower than or equal to +/-2%	11
Floating arrangements	
De facto moving band +/-5%/ Managed floating	12
Freely floating	13

Source: Harms and Knaze (2018).

Table 6: Expected effects given by the literature

Literature	Description
Nicita (2013)	Increase in exchange rate volatility leads to increase risks and transaction costs with lower international trade. Firms are less responsive to exchange rate volatility with high fixed costs to exports. Undervalued currency leads to increase the competitiveness of the exports at the expense of consumers and the non-tradable sectors.
Auboin (2013)	The effect of increased volatility of exchange rates on trade depends on the level of risk aversion of trade. A depreciation can lead firms to start exporting or to expand the product scope of their exports.
Franke (1991)	High variability of exchange rates and uncertainty can influence the decision to enter or exit foreign markets in the presence of sunk costs.
Wang and Barret (2007)	Volatility of exchange rates affect more agricultural flows because agricultural trade is more sensitive to long-run exchange rate uncertainty than other sectors.
Baldwin (1988)	Undervaluation of the exchange rate has a long-run effects if it allows exporters to enter foreign markets and overcome the initial information inefficiency or the costs of entry.
Freund and Pierola (2008)	Undervalued exchange rate has a positive effect by facilitating entry in new export products and new markets.
OECD (2011)	More pronounced impact of exchange rate on exports of agricultural goods due to a greater ease to change suppliers of agricultural goods.
Berman et al. (2012)	Larger and more productive firms react to a devaluation with an increase in mark-ups, while smaller and less productive exporters react by changing the import price.
Broll and Eckwert (1999)	Positive relationship between exchange rate volatility and exports, but only for firms that are able to react flexibly to changes in exchange rates and reallocate their products.
Santana-Gallego and Pérez-Rodriguez (2019)	Positive effect of (quasi-)fixed exchange rate regimes on trade and the US dollar is a better currency for fixer exchange rate regimes in terms of trade.

Table 7: Exchange rate regime of the Dominican Republic (in %)

De facto crawling peg	8.44
De facto crawling band is narrower than or equal to +/- 2%	25.72
Pre annoncend crawling band that is wider than or equal to +/- 2%	0.19
De facto crawling band that is narrower than or equal +/- 5%	8.13
Moving band that is narrower than or equal to +/- 2%	1.82
Soft pegs	**44.3**
De facto moving band +/-5%/ managed floating	6.57
Freely floating	27.92
Floating	**34.49**

Source: Harms and Knaze (2018). Lecture: Soft pegs represent 44.3% of *de facto* exchange rate regimes applied by the Dominican Republic.

Table 8: Exchange rate regime of Mauritius (in %)

De facto crawling band is narrower than or equal to +/- 2%	26.16
Pre annoncend crawling band that is wider than or equal to +/- 2%	0.28
De facto crawling band that is narrower than or equal +/- 5%	17.08
Moving band that is narrower than or equal to +/- 2%	1.56
Soft pegs	**45.07**
De facto moving band +/-5%/ managed floating	6.54
Freely floating	27.43
Floating	**33.97**

Source: Harms and Knaze (2018). Lecture: Soft pegs represent 45.07% of *de facto* exchange rate regimes applied by Mauritius.

Table 9: *De facto* exchange rate regime of Dominican Republic and Mauritius with their main trading partners

	USA	EU	China
Dominican Republic	Soft pegs : 84% Floating : 2.3%	Soft pegs : 0.8% Floating : 87%	Soft pegs : 68% Floating : 18%
Mauritius	Soft pegs : 57% Floating : 33%	Soft pegs : 0.7% Floating : 93%	Soft pegs : 54% Floating : 36%

Source: Harms and Knaze (2018).

Table 10: Effects of *de facto* ERRs on exporters behavior for raw materials

	Number of exporters	Number of entrants	Number of exiters
Soft pegs_DOM	-0.12^a	-0.10	-0.15^b
	(0.04)	(0.07)	(0.07)
Soft pegs_MUS	0.02	-0.15	0.14
	(0.05)	(0.10)	(0.09)
Floating arrangements_DOM	-0.12^a	-0.08	-0.12^c
	(0.04)	(0.07)	(0.07)
Floating arrangements_MUS	0.01	-0.06	-0.006
	(0.05)	(0.11)	(0.10)
Observations	241049	208594	175190
R^2	0.99	0.98	0.98

	Number of survivants	Number of incumbents	Export value per exporter
Soft pegs_DOM	-0.04	-0.21^a	-0.34^a
	(0.12)	(0.06)	(0.12)
Soft pegs_MUS	-0.45^b	0.12^c	0.64^b
	(0.18)	(0.07)	(0.25)
Floating arrangements_DOM	0.01	-0.21^a	-0.33^b
	(0.13)	(0.06)	(0.13)
Floating arrangements_MUS	-0.14	0.11	0.82^b
	(0.19)	(0.07)	(0.34)
Observations	117384	167467	121969
R^2	0.97	0.99	0.97

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator. DOM means Dominican Republic, MUS means Mauritius.

Table 11: Effects of *de facto* ERRs on exporters behavior for live animal and animal products

	Number of exporters	Number of entrants	Number of exiters
Soft pegs_DOM	-0.22	0.08	0.22
	(0.15)	(0.21)	(0.53)
Soft pegs_MUS-STP	-0.05	-0.17	0.20
	(0.06)	(0.13)	(0.14)
Floating arrangements_DOM	-0.05	0.33	0.35
	(0.14)	(0.21)	(0.50)
Floating arrangements_MUS-STP	-0.09	-0.18	-0.08
	(0.08)	(0.16)	(0.16)
Observations	74389	64831	54169
R^2	0.99	0.98	0.98

	Number of survivants	Number of incumbents	Export value per exporter
Soft pegs_DOM	-0.62	-0.03	-0.47
	(0.43)	(0.29)	(0.34)
Soft pegs_MUS-STP	-0.42	-0.03	0.68^b
	(0.26)	(0.11)	(0.28)
Floating arrangements_DOM	-0.53	-0.06	-0.08
	(0.46)	(0.27)	(0.35)
Floating arrangements_MUS-STP	-0.51^c	0.04	0.85^b
	(0.30)	(0.13)	(0.38)
Observations	36210	51603	36165
R^2	0.97	0.99	0.97

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator. DOM means Dominican Republic, MUS means Mauritius.

Table 12: Effects of *de facto* ERRs on exporters behavior for vegetable products

	Number of exporters	Number of entrants	Number of exiters
Soft pegs_DOM	-0.11^b	-0.11	-0.16^b
	(0.04)	(0.07)	(0.07)
Soft pegs_MUS-STP	-0.01	-0.11	0.21
	(0.07)	(0.16)	(0.14)
Floating arrangements_DOM	-0.13^a	-0.11	-0.12^c
	(0.05)	(0.08)	(0.07)
Floating arrangements_MUS	0.03	0.04	0.13
	(0.07)	(0.16)	(0.14)
Observations	147857	127458	107260
R^2	0.99	0.97	0.98
	Number of survivants	**Number of incumbents**	**Export value per exporter**
Soft pegs_DOM	-0.04	-0.20^a	-0.33^a
	(0.13)	(0.06)	(0.12)
Soft pegs_MUS	-0.61^b	0.18^b	0.03
	(0.28)	(0.09)	(0.24)
Floating arrangements_DOM	0.008	-0.21^a	-0.35^b
	(0.13)	(0.06)	(0.13)
Floating arrangements_MUS	-0.03	0.14	0.32
	(0.28)	(0.09)	(0.29)
Observations	71462	102019	76585
R^2	0.97	0.99	0.98

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator. DOM means Dominican Republic, MUS means Mauritius.

Table 13: Effects of *de facto* ERRs on exporters behavior for animal and vegetable oils products

	Number of exporters	Number of entrants	Number of exiters
Soft pegs_DOM	-0.17	0.35	-0.40
	(0.14)	(0.46)	(0.24)
Soft pegs_MUS-STP	0.16	-0.21	-0.43^c
	(0.21)	(0.32)	(0.24)
Floating arrangements_DOM	0.001	0.52	-0.51^b
	(0.14)	(0.47)	(0.25)
Floating arrangements_MUS	-0.19	-0.24	-0.46
	(0.22)	(0.43)	(0.36)
Observations	18806	16305	13761
R^2	0.99	0.96	0.96

	Number of survivants	Number of incumbents	Export value per exporter
Soft pegs_DOM	1.21^b	-0.57^a	-2.34^b
	(0.59)	(0.22)	(1.18)
Soft pegs_MUS	0.22	0.40	3.50^a
	(0.59)	(0.32)	(0.99)
Floating arrangements_DOM	1.57^b	-0.38^c	-2.12^c
	(0.66)	(0.22)	(1.10)
Floating arrangements_MUS	0.42	0.20	-1.48^c
	(0.83)	(0.31)	(0.78)
Observations	9712	13845	9219
R^2	0.95	0.99	0.96

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator. DOM means Dominican Republic, MUS means Mauritius.

Appendix: Estimates for a larger panel of countries (without SIDS)

Table 14: Effects of *de facto* ERRs on exporters behavior for raw materials (without SIDS)

	Number of exporters	Number of entrants	Number of exiters
Hard pegs	-0.002	-0.009	-0.02
	(0.01)	(0.01)	(0.01)
Soft pegs	-0.0001	-0.001	-0.006
	(0.001)	(0.01)	(0.01)
Floating arrangements	0.008	0.01	-0.004
	(0.006)	(0.01)	(0.01)
Observations	241049	208594	175190
R^2	0.99	0.98	0.98
	Number of survivants	**Number of incumbents**	**Export value per exporter**
Hard pegs	0.01	0.01	-0.04
	(0.02)	(0.01)	(0.03)
Soft pegs	-0.02	0.001	-0.01
	(0.01)	(0.008)	(0.02)
Floating arrangements	-0.003	-0.00004	-0.03^c
	(0.01)	(0.007)	(0.01)
Observations	117384	164467	121969
R^2	0.97	0.99	0.97

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator.

Table 15: Effects of *de facto* ERRs on exporters behavior for live animal and animal products (without SIDS)

	Number of exporters	Number of entrants	Number of exiters
Hard pegs	-0.03	-0.04	-0.03
	(0.01)	(0.03)	(0.03)
Soft pegs	-0.01	-0.02	-0.01
	(0.01)	(0.02)	(0.01)
Floating arrangements	-0.01	-0.006	-0.03^c
	(0.01)	(0.01)	(0.01)
Observations	74389	64831	54169
R^2	0.99	0.98	0.98
	Number of survivants	**Number of incumbents**	**Export value per exporter**
Hard pegs	-0.18^a	0.01	0.03
	(0.05)	(0.02)	(0.04)
Soft pegs	-0.10^a	-0.01	0.0002
	(0.03)	(0.01)	(0.02)
Floating arrangements	-0.08^a	-0.01	-0.02
	(0.03)	(0.01)	(0.02)
Observations	36210	51603	36165
R^2	0.97	0.99	0.97

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator.

Table 16: Effects of *de facto* ERRs on exporters behavior for vegetable products (without SIDS)

	Number of exporters	Number of entrants	Number of exiters
Hard pegs	0.01	0.003	-0.02
	(0.01)	(0.02)	(0.02)
Soft pegs	0.007	0.01	0.007
	(0.009)	(0.01)	(0.01)
Floating arrangements	0.01^b	0.02^c	0.01
	(0.008)	(0.01)	(0.01)
Observations	147854	127458	107260
R^2	0.99	0.97	0.98
	Number of survivants	**Number of incumbents**	**Export value per exporter**
Hard pegs	0.10^a	0.01	-0.06
	(0.03)	(0.01)	(0.05)
Soft pegs	0.01	0.006	-0.005
	(0.02)	(0.01)	(0.02)
Floating arrangements	0.03	0.006	-0.02
	(0.02)	(0.009)	(0.02)
Observations	71462	102019	76585
R^2	0.97	0.99	0.98

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator.

Table 17: Effects of *de facto* ERRs on exporters behavior for animal and vegetable oils products (without SIDS)

	Number of exporters	Number of entrants	Number of exiters
Hard pegs	-0.01	-0.02	-0.11
	(0.02)	(0.05)	(0.05)
Soft pegs	-0.001	-0.02	-0.12
	(0.02)	(0.04)	(0.04)
Floating arrangements	-0.006	-0.01	-0.08^b
	(0.02)	(0.03)	(0.04)
Observations	18806	16305	13761
R^2	0.99	0.96	0.96
	Number of survivants	**Number of incumbents**	**Export value per exporter**
Hard pegs	-0.02	0.02	-0.18
	(0.09)	(0.03)	(0.11)
Soft pegs	0.08	0.03	-0.10
	(0.07)	(0.02)	(0.09)
Floating arrangements	0.02	0.02	-0.12
	(0.06)	(0.02)	(0.08)
Observations	9712	13845	9219
R^2	0.95	0.99	0.96

Note: Robust standard errors clustered by country-pair-product in parentheses with ^{a}, ^{b} and ^{c} respectively significance at the 1%, 5% and 10% levels. All regressions include exporter-time-product, importer-time-product and country-pair-product fixed effects with PPML estimator.