

Kent Academic Repository

Full text document (pdf)

Citation for published version

Hosein, Roger and Gookool, Rebecca and Saridakis, George (2021) Trade Facilitation and Non-Energy Exports of Trinidad and Tobago. *Sustainability*, 13 (5). p. 2870. ISSN 2071-1050.

DOI

<https://doi.org/10.3390/su13052870>

Link to record in KAR

<https://kar.kent.ac.uk/87012/>

Document Version

Publisher pdf

Copyright & reuse

Content in the Kent Academic Repository is made available for research purposes. Unless otherwise stated all content is protected by copyright and in the absence of an open licence (eg Creative Commons), permissions for further reuse of content should be sought from the publisher, author or other copyright holder.

Versions of research

The version in the Kent Academic Repository may differ from the final published version.

Users are advised to check <http://kar.kent.ac.uk> for the status of the paper. **Users should always cite the published version of record.**

Enquiries

For any further enquiries regarding the licence status of this document, please contact:

researchsupport@kent.ac.uk

If you believe this document infringes copyright then please contact the KAR admin team with the take-down information provided at <http://kar.kent.ac.uk/contact.html>

Article

Trade Facilitation and Non-Energy Exports of Trinidad and Tobago

Roger Hosein ^{1,*} , Rebecca Gookool ¹ and George Saridakis ²

¹ Department of Economics, The University of the West Indies, St. Augustine, Kingston 7, Trinidad and Tobago; Rebecca.Gookool@sta.uwi.edu

² Kent Business School, University of Kent, Canterbury CT2 7FS, UK; G.Saridakis@kent.ac.uk

* Correspondence: roger.hosein@sta.uwi.edu

Abstract: The economy of Trinidad and Tobago (T&T) has traditionally depended on its energy sector as a key driver of economic activity. This sector, however, has been shown to be volatile and vulnerable to global economic shocks; this is no more evident than what has been observed during the coronavirus pandemic. Oil prices have, as a result declined significantly, and this has put the economy on a path of compounded economic misfortune. The non-energy trade sector though has traditionally been identified as having more stable export earning potential and as such in adjusting to the economic nuances of the global shock associated with the coronavirus pandemic, there is an opportunity for policy makers to reconsider the role of the non-energy sector. This paper provides an overview of trade facilitation policy considerations to boost the outcomes of the non-energy sector. We find that factors such as language, port infrastructure liner connectivity and customs impact on export performance.

Keywords: trade facilitation; non-energy exports; trade; T&T



Citation: Hosein, R.; Gookool, R.; Saridakis, G. Trade Facilitation and Non-Energy Exports of Trinidad and Tobago. *Sustainability* **2021**, *13*, 2870. <https://doi.org/10.3390/su13052870>

Academic Editors: Jungho Baek and Sajid Anwar

Received: 3 February 2021
Accepted: 4 March 2021
Published: 6 March 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Export sustainability is a policy objective for small highly open developing economies [1]. However, a significant challenge which remains in many small economy cases, is that export revenues are concentrated in a few, often primary sectors which can have significant implications for economic volatility and hence long-term planning [2]. Even so, Funke and Ruhwedel [3], and Imbs and Wacziarg [4] reported that strong economic growth patterns in developing economies were associated with a stable diversified export base. Similar conclusions were also made by Cadot et al. [5]. The dilemma therefore is how an economy can increase its exports given that this will likely result in more sustainable growth outcomes. It is against this backdrop that the discussion on trade facilitation is posted. Trade facilitation is defined broadly as a set of policy options which can effectively reduce transactional costs of international trade [1].

Trade facilitation has been recognized as an integral tool in the context of economic integration and as such has been written into bilateral and multilateral trade agreements [6]. Trade facilitation in this regard, can enable firms to expand exports into new markets [1] and as a strategic policy objective can therefore enable progress towards a goal of export diversification for small economies [6].

Trinidad and Tobago (T&T) is considered a small highly open hydrocarbon exporting economy and as such the non-energy export sector has been a key area of policy focus over the last few decades especially in terms of articulating pathways for export diversification. In the context of the economic adjustments associated with the global pandemic, the paper posits that the economy is poised to leverage the opportunity for reset from a policy perspective and to reconsider strategies to expand the non-energy sector [7,8].

The non-energy sector, in the past has generally benefitted from factors such as a relatively cheap source of energy, given the abundance of natural gas, which resulted

in the expansion of the light manufacturing sector [9]. Since 2015 though, the falloff in energy prices have had the associated externalities of negative spillovers such as declining foreign reserves and access to foreign exchange, which have compounded to stall the growth of this sector. Further, growth has been compromised by a weakened business environment as indicated by a declining relative position for the overall economy on the global competitiveness and doing business rankings.

Challenges, as highlighted by the institutions such as the World Bank and the Inter-American Development Bank (IDB), have also emerged in terms of non-tariff constraints as well as rising costs associated with shipping and insurance [10]. These constraints impact on the cost of international trade and are compounded by factors such as inefficiencies associated with customs and other transport logistics infrastructure. These factors culminate to raise the cost of trade, which negatively impact on the level of exports [9,11].

Against these realities T&T policy makers have recognized the importance of progressing the local and by extension the regional trade facilitation agenda as a strategy to improve competitiveness and in the context of economic diversification, increase exports [7,8]. To this end, this paper aims to focus the discussion on key trade facilitation variables which can have a marked improvement on trade costs and hence on the overall level of exports. An econometric model is used to evaluate the statistical relationship between trade and selected trade facilitation variables from which generalizations are proposed.

The paper is structured as follows. Section 2 provides an overview of the trade facilitation literature; Section 3 discusses the local data environment; Section 4 introduces the model and Section 5 presents the model findings. The paper concludes with some general policy considerations in Section 6.

2. Literature Review

2.1. Trade Facilitation and Export Growth

Trade facilitation has been identified as a key enabling environmental factor to globalization [12]. Specifically, consider the following Figure 1, which summarizes five key global trade trends which emphasises the importance of trade facilitation as a determining factor of trade competitiveness. These include rulings on merchandise trade related to matters such as rules of origin and environmental sustainability of production processes; the impact of globalization in terms of the rise of multinationals and global supply chains; regional integration; diversification of production and export bases and the expanding role of technology have impacted on trade flows. Trade facilitation in this regard, is therefore also linked to trade openness and the overall business environment [1].

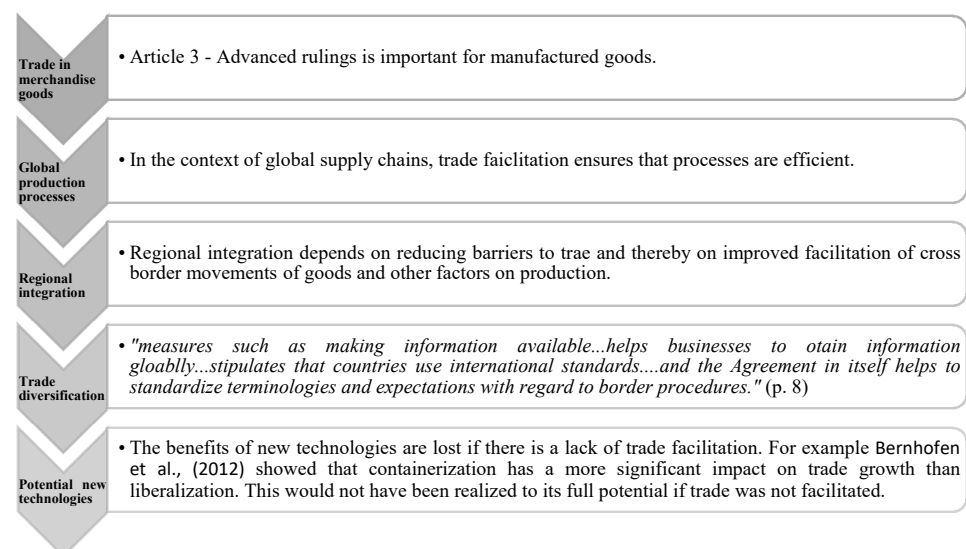


Figure 1. Trends in Global Trade and the Importance of Trade Facilitation. (Source: UNCTAD 2016).

Trade facilitation has been defined generally as the simplification, standardization and harmonization of procedures and associated information flows required to move goods along the value chain from seller to buyer [13]. The contemporary and applied definition of trade facilitation, however, is much broader than what was originally conceptualized at the Doha Round of multilateral trade negotiations. Originally, trade facilitation was focused on rationalizing customs procedures [6]. In terms of the current international trade literature, however, although trade facilitation does involve streamlining customs, there has been a broadening to include other types of direct and indirect trade related costs to improve the efficiency of processes at ports of entry.

To this end, UNECLAC [14] explains that trade facilitation can be a vehicle for economic growth, as it can increase trade, improve trade competitiveness, deepen integration of economies into regional and global value chains. Shepherd [6] and Dennis and Shepherd [7] conclude that trade facilitation can have a more significant impact on economic welfare than the liberalization of goods and services markets due to the associated multiplier effects of sparking economic activity in new and existing sectors. UNCTAD [15] (p. 15) notes that *“barriers to trade become barriers to development.”* Kituyi [16], explains that global trade is associated with transport related and transactions costs which are unavoidable and can be higher than necessary in cases where processes are ambiguous and muddled. Indeed, *“trade facilitation can be highly complementary to liberalization”* [6] (p. 1). High trade costs are a direct hindrance to trade and as such the premise of this paper is that by lowering trade related costs (explicit and implicit) trade and in particular home country exports will expand [17,18]. While it has been recognized that trade does not automatically lead to growth and poverty alleviation most policy makers and researchers alike agree that in the context of development, trade liberalization does play a critical role [19–21].

Given the proposition of the complementary relationship between trade facilitation and liberalization as indicated by the researchers referred to above, it can also be argued that trade facilitation can impact on the nature of scope of exports; specifically, trade facilitation can result in an increase in exports of existing products to new markets or an increase in the exports of new products to existing and new markets. In the international trade literature this is known as trade along the intensive and extensive margins [1,6,22,23]. This type of export growth is particularly important to developing economies such as T&T seeking to expand its export base into the non-energy sector, since trade facilitation as a deliberate strategy can provide a framework by which to harness the process of and achieve export diversification.

From a trade facilitation perspective, policy makers can therefore aim to lower fixed investment costs faced by exporters [6]. This includes improving access to related financing at lower interest rates to enable expansion of production facilities. Such interventions can enable exporters to expand the range of products produced and hence exported [24]. Shepherd [6] notes that the nature of the business environment can be facilitative of trade. Factors identified in this regard include the administrative requirements for establishing and expanding business operations such as obtaining permits and registering patents. The rationale developed is that higher doing business costs, result in fewer firms over time and thus fewer exporters and export lines. Higher business operational costs have been linked to less diversified export baskets [1,3–5] and a narrower range of export partners.

Consider that the relationship between the relative size of the manufacturing and services sector as a proportion of total economic activity, measured as Gross Domestic Product (GDP) and the doing business rank is negative (Figure 2, correlation score of -0.40 for manufacturing and -0.02 for services). This implies that the higher the rank of an economy on the doing business index, the smaller is the relative size of the manufacturing and services sectors. This observation implies that countries with poor performances on the doing business index, tend to have smaller productive and hence export sectors.

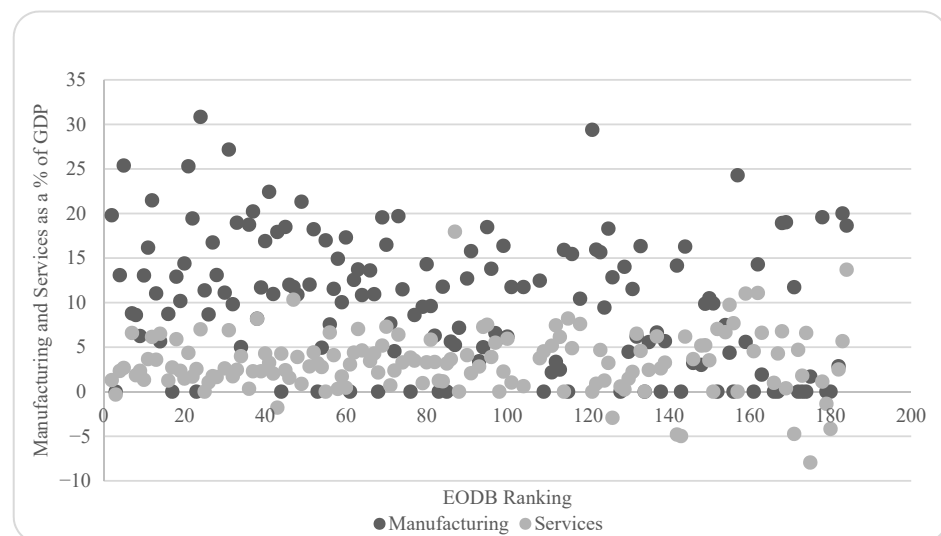


Figure 2. Manufacturing and Services as a % of GDP (2020).

In considering developing economies, information on the top performing developing economies on the doing business ranking was obtained, against which T&T specific data were compared. The selected developing economies experienced improvements in their doing business environment over the defined period and as shown in Table 1, for 8 of the 10 listed economies, the relative size of the manufacturing and services sector to GDP expanded over the short period 2014 to 2019 and manufacturing and services exports as a proportion of GDP increased for five of the listed developing economies.

Trade facilitation interventions can also be targeted to lowering the variable costs of trade which include, tariffs and other costs specific to market entry [25]. Specifically, as noted by Shepherd [6] (p. 2) “... a 10% improvement in trade facilitation ... is associated with product diversity gains of the order of 3%–4%. Moreover, there is evidence that differentiated goods (such as manufactures) have stronger diversification responses to trade facilitation than do homogeneous goods (such as agricultural products).” The author also notes that trade facilitation in the form of export promotion has a significant impact on product diversification and similarly found that a “10% improvement in trade facilitation is associated with a 5%–6% increase in the number of foreign markets served.”

In recognizing the critical role that trade facilitation plays in increasing exports, the Ministerial Conference of the World Trade Organization (WTO) agreed to undertake a detailed evaluation of the impact of trade procedures on negotiations in 1996. This exercise culminated in the creation of the Trade Facilitation Agreement in December 2013 [26]. The following section provides an overview of the fund which was established under the agreement to support trade facilitation reform.

2.2. WTO Support for Trade Facilitation

The WTO created the Trade Facilitation Agreement Facility (TFAF) in 2014 to assist developing economies in obtaining trade facilitation support. It is in this regard that the UNECLAC [21] (p. 7) explains that trade facilitation reform is therefore an important enabler of trade liberalization highlighting that “the inclusion of trade facilitation in the WTO agenda is a reflection of a number of specific trends in international trade and logistics.”

The Facility undertakes assessment activities with each economy to determine the extent to which each member state requires special and differential assistance especially in terms of capacity building for institutions involved in trade. To this end also the facility offers financial assistance in the form of grants [21]. The agreement itself is extensive and covers a range of issues from reducing information asymmetry to improving customs cooperation at ports of entry, rationalization of documents and fees structures. The various subsections of the TFA are listed in Table 2 below.

Table 1. Manufacturing and Services GDP and Exports as a % of Total GDP for Selected Developing Economies.

Year	2014	2015	2016	2017	2018	2019
Manufacturing and Services GDP as a % of GDP						
Mauritius	79.2	79.33	79.40	79.22	78.75	78.28
Macedonia	64.78	65.49	65.84	67.14	67.64	68.40
Thailand	80.72	82.32	83.08	83.58	83.82	83.89
Kazakhstan	65.16	69.57	69.19	68.58	66.88	66.85
Azerbaijan	38.89	45.64	44.25	42.82	39.90	42.37
Rwanda	56.07	56.63	56.06	55.55	57.33	57.46
Serbia	66.66	65.65	65.13	65.98	65.53	66.72
Armenia	57.08	57.42	60.20	61.40	63.89	65.97
Moldova	63.88	64.94	65.87	64.75	64.77	65.14
Kenya	57.93	55.59	54.12	50.40	50.90	50.76
T&T	66.28	72.48	78.14	76.24	73.98	70.10
Manufacturing and Services Exports as a % of GDP						
Mauritius	48.85	47.86	44.25	42.45	40.78	39.17
Macedonia	47.66	48.74	50.66	55.15	60.58	61.69
Thailand	68.39	67.64	67.06	66.68	64.87	59.74
Kazakhstan	39.34	28.52	31.84	32.40	37.63	36.54
Azerbaijan	43.27	37.79	46.43	48.55	54.09	49.18
Rwanda	14.10	15.91	15.56	19.05	19.10	19.02
Serbia	42.08	45.27	48.62	50.54	50.78	51.95
Armenia	28.57	29.73	33.15	37.33	37.73	38.52
Moldova	31.17	31.90	32.31	31.10	30.14	30.52
Kenya	18.30	16.57	14.33	13.23	13.17	12.03
T&T	59.51	50.60	40.19	44.13	45.35	36.93

Source: World Bank Development Indicators. *Note:* The data on GDP related indicators, available for the selected economies is available up to 2019 only.

Table 2. Sections of the WTO's Trade Facilitation Agreement.

Article	Detail
1	Publication and Availability of Information
2	Opportunity to Comment, Information Before Entry into Force, and Consultations
3	Advance Rulings
4	Procedures for Appeal or Review
5	Other Measures to Enhance Impartiality, Non-Discrimination, and Transparency
6	Disciplines on Fees and Charges Imposed on or in Connection with Importation and Exportation and Penalties
7	Release and Clearance of Goods
8	Border Agency Cooperation
9	Movement of Goods Intended for Import Under Customs Control
10	Formalities Connected with Importation, Exportation and Transit
11	Freedom of Transit
12	Customs Cooperation

Source: WTO 2014.

The OECD [27] in a review of the Facility noted that most of the WTO members requested support for implementation of a National Single Window which typically requires coherence among various institutions, processes and agencies and involves a significant Information and Communication Technology (ICT) requirement. Countries have requested

assistance in developing the associated governance structures and legislative frameworks associated with a single window. The report also noted that human resources and training was a critical requirement in terms of capacity building followed by legislative frameworks and ICT and institutional processes. In the period 2017–2018, 52% of the funds disbursed were allocated to technical and analytical support followed by capacity building (12%).

Positive impacts have been observed in the countries which undertook trade facilitation reform (OECD, 2019). These relate to rationalization of goods inspection, the elimination of unnecessary documents and the automation of manual processes with subsequent benefits being experienced in terms of clearance times at various ports. The World Bank has also cited reductions in trade costs for some of the benefiting economies. An important observation in this regard, as summarized by the OECD [27] is the internationalization of SMEs.

The extent to which T&T ratified the agreement and benefitted from the various interventions is discussed in the section below.

2.3. Trade Facilitation in T&T

UNECLAC [14] provides a comparative situation of selected countries in Latin America and the Caribbean in terms digital and sustainable development trade facilitation. It shows that Mexico and Columbia are the best performing economies in the bloc with T&T being the best in class among the Caribbean Community (CARICOM) economies listed. Notwithstanding this, in 2019, T&T achieved 54% as compared to 92% for Mexico and 85% for Columbia; in terms of trade facilitation therefore, T&T does have much room for improvements in its approach.

T&T ratified the TFA (of the World Trade Organization) in 2015. The interventions set out in the agreement are targeted specifically to improving trade outcomes and are likely to overtime impact on the trading across borders pillar of the doing business index. To date, according to the Ministry of Trade and Industry, only 21.4% of the interventions under the agreement have been implemented. The schedule for completion of all aspects of the agreement is 2028. The following Table 3 provides some additional details as reported by the Ministry of Trade and Industry. In terms of the completed commitments, it should be noted that “Category A” relates to preparation of documents, identifying institutional stakeholders and undertaking consultations with industry experts. “Category A” is declaratory, while “Category B” and “Category C” are focused on implementation activities in terms of projects and pilots at the various stakeholder institutions.

Table 3. Rate of Implementation Commitments.

21.4%	Rate of implementation commitments on category A commitments. No progress made on Category B or C.
8%	Rate of implementation commitments from December 2020 to December 2023.
70.6%	Rate of implementation commitments from December 2020 to December 2027 upon receipt of capacity building support.

Source: Trade Facilitation Agreement Database 2020.

3. Data

3.1. Dependent Variable: Total Exports and Non-Energy Exports

Data for merchandise exports, and non-energy merchandise exports, between T&T and 184 countries over the period 1990 to 2010, were obtained from the World Integrated Trade Solution (WITS) database. Figure 3 provides a snapshot of the trends in T&T's exports. Two models are constructed with either of the identified variables being the dependent variable (total merchandise exports and total non-energy merchandise exports) from T&T (*i*) to each of the various trade partners (*j*).

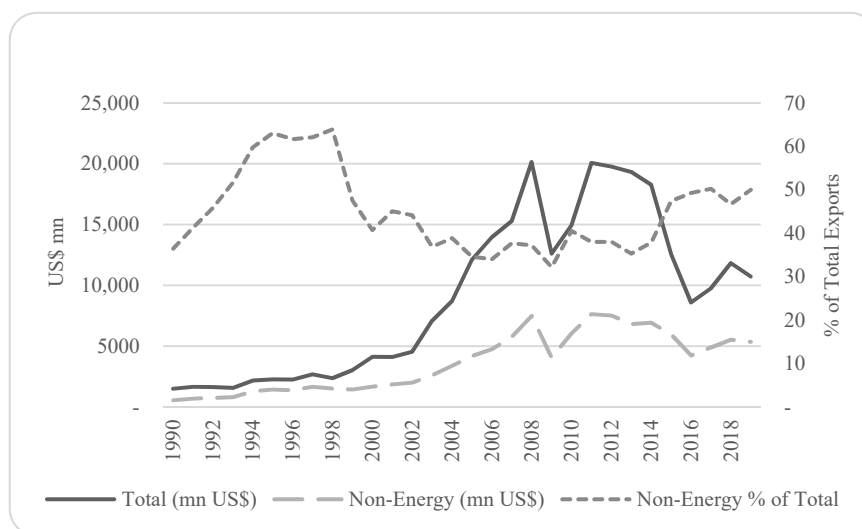


Figure 3. Trends in T&T Total and Non-Energy Exports, 1990 to 2019.

Figure 3 shows the overall trends in merchandise exports for T&T over the period 1990 to 2019. Over the period defined above, total merchandise exports increased from US\$1.5 bn to US\$10.7 bn, and non-energy exports from US\$545 mn to US\$5.4 bn. Note that non-energy exports increased by a greater proportion than total exports. T&T producers have traditionally exported approximately 10% of the value of merchandise goods produced locally to the CARICOM market (See Figure 4 below). Specifically, note that in 2010 exports to the CARICOM market as a proportion of total exports was 11% as compared to 4% in 2019.

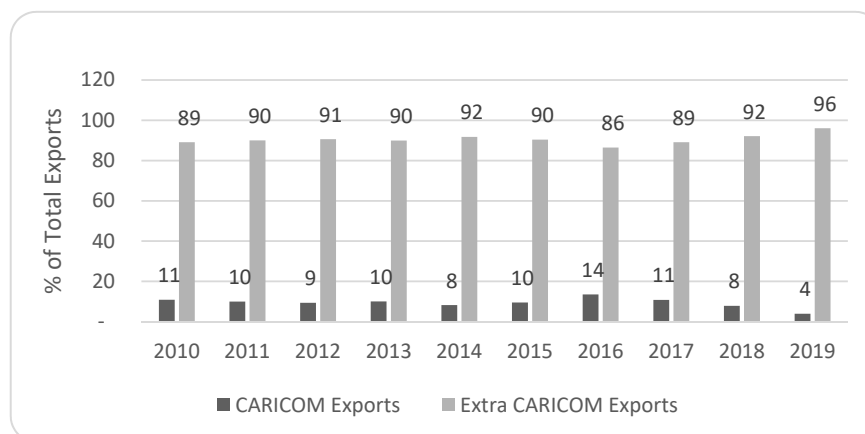


Figure 4. Distribution of T&T Exports by Market Destination.

Over the period 2000 to 2019, this amounts to an average of 2200 products (in terms of HS 5-digit descriptions) across the region. At the extra regional level over the same period, on average 250 products are exported across more than 100 economies (See Table 4 below).

3.2. Independent Explanatory Variables

The independent or explanatory variables used for this model are in line with the research as suggested by Jacks et al. [28], Arvis et al. [29], Novy [30], and is detailed in Table 5 below. These studies, aimed to model the impact of trade facilitation mechanisms as evidenced by specific variables related to competitiveness and trade logistics, on trade. The applied model in this paper uses a combination of standard gravity variables such as GDP and distance as well as trade facilitation related variables such as language, quality of liner shipping infrastructure and the burden of customs procedures.

Table 4. T&T Export Sectors to CARICOM and Extra Regional Markets.

	CARICOM		Extra CARICOM	
	Number of Products	Number of Markets	Number of Products	Number of Markets
2000	2315	11	329	83
2005	2292	12	323	98
2010	2296	12	235	114
2015	2222	10	336	120
2016	2167	8	207	121
2017	2180	8	192	122
2018	2118	5	122	100
2019	2238	8	na	na

Source: WITS (using HS 1996 as nomenclature). *Note:* Data for the number of products and markets for the extra CARICOM market for 2019 were not available (na).

Table 5. Variables Included in the Model.

Variables	Description	Expected Sign	Details
$lang_{ij}$	Common language (official) between country i and country j (English).	+	Sharing the same official language can enhance trade outcomes as it reduces trade costs. In this model this is a binary variable.
$dist_{ij}$	Geographical distance between country i and country j .	-	Distance between economies contributes to trade costs and can thereby deter exports. In this model this variable is logged.
$bc_{i,j}$	Burden of customs procedure in country i and j .	+	More efficient customs systems in country i or j can improve trade outcomes. In this model this variable is logged.
$lsc_{i,j}$	Liner shipping connectivity index i and j	+	Efficient shipping connectivity in country i or j can enhance trade outcomes. In this model this variable is logged.
$mgdp_{i,j}$	Manufacturing GDP % for i and j	+/-	The larger i 's (j 's) manufacturing sector the higher (lower) the level of exports. In this model this variable is logged.
$gdp_{i,j}$	Real GDP i and j .	+	The higher i 's or j 's GDP the higher the level of exports. In this model this variable is logged.
$roine_i$	Regional orientation index (non-energy) for country i .	+	The higher the roi the higher the level of bilateral exports. In this model this variable is logged.
$tariff_j$	Average tariff j .	-	The higher the tariff rates of j the lower the imports from i . In this model this variable is logged.
TC_{ij}	Complementarity index between i and j .	+	The higher the complementarity scores the higher the level of exports. In this model this variable is logged.
TB_{ij}	Bias index between i and j .	+	The higher the complementarity scores the higher the level of exports. In this model this variable is logged.

The binary variable for common language was obtained from the CEPII database. This variable is expected to carry a positive sign. Data for distance was also obtained from this source and is expected to have a negative relationship with both total and non-energy merchandise exports. The indices for burden of customs procedures and liner shipping connectivity, used here as representative of trade facilitation outcomes were obtained from the World Bank's Open Trade and Competitiveness database. The expected sign of the coefficient associated liner shipping connectivity is positive. The expected sign for burden of customs procedures is also positive.

GDP and the proportion of manufacturing value added to GDP were obtained from the World Bank Development Indicators database. All GDP related variables are expected

to return a positive coefficient except for manufacturing GDP in j . This variable is expected to carry a negative sign.

Average tariff for j is also obtained from the World Development Indicators database as is expected to carry a negative coefficient. A regional orientation index (ROI) variable, specific to non-energy exports, is calculated using trade data obtained from the world integrated trade solutions database. The expected coefficient for this variable is positive.

Finally, bilateral trade complementarity and bias indices were calculated between T&T and each of the 184 trading partners over the period 1990 to 2019. These variables are expected to carry a positive sign.

4. Empirical Model

Anderson and van Wincoop [31] discussed the impact of trade costs, as resistance variables, on trade outcomes and broadly defined trade costs to include all costs incurred along the value chain between production and delivery to the final user. The authors listed these as transportation costs (both freight costs and time costs); policy barriers (tariffs and non-tariff barriers); information and communication costs; contract enforcement costs; costs associated with the use of different currencies; legal and regulatory costs and local distribution costs (wholesale and retail). Arvis et al. [29] explained that international trade related costs are at least ten times larger than tariffs as it captures factors such as non-tariff measures, connectivity, logistics, geographical and institutional factors. Over the last decade these and other associated factors have been grouped as trade facilitation factors. For example, Alavi [1] explained that simply shifting from paper based to digital trade had extensive time and cost saving benefits for exporters. Wilson et al. [32] concluded that the impact of trade facilitation reforms were substantial when focused on “trading across borders” factors such as port and customs efficiency, as well as “environmental” factors such as rationalizing domestic regulations and the infrastructure to enable e-commerce. Similar conclusions were also drawn by Duval and Utoktham [33], Hossain and Rahman [34], Gołemska [35] and Alavi [36].

The literature on gravity model as it applies to trade facilitation, suggests that the Poisson pseudo-maximum likelihood (PPML) estimator would provide a consistent set of estimates of the gravity equation [37]. This method has desirable properties for applied researchers who use gravity models (see, for example, [38]) in terms of stability and correcting for zero value data cells [39]. The PPML method is therefore the approach used to determine the factors influencing total merchandise exports and non-energy exports. Our empirical model is written as follows:

$$X_{ij} = \beta_0 + \beta_1 lang_{ij} + \beta_2 dist_{ij} + \beta_3 bc_{i,j} + \beta_4 lsc_{i,j} + \beta_5 mgdp_{i,j} + \beta_6 gdp_{i,j} + \beta_7 tariff_j + \beta_8 roine_i + \beta_9 TB_{ij} + \beta_{10} TC_{ij} + e_{ij} \quad (1)$$

where country i is T&T, j is each of the 184 trade partners. Finally, e_{ij} is the error term.

5. Empirical Findings

5.1. Basic Specification

Table 6 below provides the PPML results associated with total merchandise exports and non-energy exports. Models are also presented for the subset of the data relating to the extra-CARICOM market. Note that the combination of explanatory variables presented below offer the most economically plausible outcomes, for each model permutation. Specifically, the overall model was evaluated which sought to establish the relationship between total merchandise exports (to the world) and some general explanatory variables, after which the dependent variable used was extra CARICOM merchandise exports. The final permutation evaluated, used intra CARICOM merchandise exports as the dependent variable. Regarding the factors influencing total merchandise exports note that all variables are statistically significant, and that each variable carries the expected sign (as shown in Table 5). A similar observation is made for the model using non-energy exports as the dependent variable.

Table 6. Estimates Associated with the PPML Method (Total and Extra-CARICOM Models), 1990–2019.

Variables	Total		Extra-CARICOM	
	Merchandise Exports (1)	Non-Energy Exports (2)	Total Merchandise Exports (3)	Total Non-Energy Exports (4)
$lang_{ij}$	0.21 *** (0.07)	0.33 ** (0.13)	0.19 * (0.10)	−0.21 (0.17)
$dist_{ij}$	0.44 *** (0.17)	−2.17 *** (0.35)	0.61 *** (0.17)	−1.99 *** (0.33)
bc_j	1.41 *** (0.38)	3.33 *** (0.75)	1.21 *** (0.37)	4.24 *** (0.79)
lsc_j	0.71 ** (0.27)	0.95 ** (0.45)	1.20 *** (0.28)	0.42 (0.50)
$mgdp_i$	2.23 ** (0.89)	3.05 *** (1.11)	2.1 ** (1.02)	2.0 * (1.20)
gdp_j	1.49 *** (0.09)	1.76 *** (0.13)	1.45 *** (0.09)	2.11 *** (0.16)
TB_{ij}	2.15 *** (0.06)	1.13 *** (0.1)	2.22 *** (0.07)	1.15 *** (0.11)
TC_{ij}	1.56 *** (0.26)	1.32 *** (0.42)	1.65 *** (0.30)	0.35 (0.44)
β_0	−16.30 *** (0.96)	−13.6 *** (1.49)	−16.9 *** (1.04)	−18.7 *** (2.05)
R ²	0.97	0.98	0.96	0.97
Observations	350	350	336	336

Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. We have also included $tariff_j$ in the model, but we found the coefficients to be statistically insignificant. Hence, we excluded this variable from the overall model. Further, it was not practical to calculate a ROI for the total or the extra CARICOM models as this type of indicator applies only when there is trade bias in the context of a Regional Trade Agreement such as the one that exists with CARICOM. As such this indicator is only included in the model for intra-CARICOM.

The results in Table 6 shows that the language variable for the non-energy export model carries a positive, large in magnitude and statistically significant coefficient. This implies that language significantly and positively impacts on non-energy exports as compared to total exports (column 2 as compared to column 1). Statistically the mean of either of the models is not significantly different from each other. Distance is found to negatively impact on non-energy exports; however, it is found that it positively impacts on overall exports. This may be due to the fact that the majority of energy exports are directed to extra regional markets. Liner shipping connectivity and burden of customs in country j positively impact on exports but the coefficients associated with the model for non-energy exports is, not surprisingly, marginally larger than that of overall merchandise exports. This finding also shows that non-energy exports are more sensitive to these trade facilitation variables. Furthermore, the model also shows that bilateral exports are impacted not just by the trade facilitation environment locally but also the quality of the environment in trade partner economies as well.

Local manufacturing GDP as a proportion of total GDP ($mgdp_i$), as used in this model, represents the density of manufacturing activity, positively impacts on overall exports, but more significantly on non-energy exports. This is not a surprising finding as it indicates that a more vibrant manufacturing sector will be more likely to result in a higher level of exports. The coefficient for this variable is significant at the 1% level. This result does provide impetus to local manufacturing lobbyists such as the T&T Manufacturers' Association to push for more targeted support of the non-energy manufacturing sector. To the extent that energy sector exports can also have positive spillover benefits to other productive sectors, energy exports should also be encouraged.

The extra-CARICOM model aims to measure the impact of the listed explanatory variables on T&T's exports to the non-CARICOM market. Estimates are provided for overall exports and non-energy exports in columns 3 and 4. Note that the results are generally similar to the observations posted in columns 1 and 2.

5.2. Intra-Regional Specification

In this sub-section, we consider factors other than what was included in the models presented in Table 6 above, which may influence bilateral trade between T&T and other CARICOM member states (T&T is a member of CARICOM). An intra-regional focus, given the proximity of the CARICOM market is critical for the T&T economy in determining how this market can be better leveraged to enable the expansion of the local export sector. In Table 7, we provide estimates specific to modelling this relationship. At the intra-regional level, bilateral trade is negatively impacted by the density of manufacturing activity and the tariff levels in the partner country j . Regarding tariffs, this result is not surprising as although the common external tariff exists regionally, there are some commodities traded intra-regionally for which the Common External Tariff (CET) is suspended. These coefficients carry the expected signs. For the CARICOM model we calculated the ROI which measures the importance of intra-regional exports relative to extra-regional exports. The coefficient associated with the ROI is negative and statistically significant which does provide some indication of the structural challenges associated with intra-regional trade. This negative coefficient may be indicative of a type of X-inefficiency which emerges in protected markets. The CARICOM market is protected by the common external tariff and is therefore insulated to some extent from aggressive competition from extra regional partners. The small size of the CARICOM market also does not facilitate dynamism in terms of agile market response and as such, T&T producers may have become more complacent in the regional market.

Table 7. Estimates Associated with the PPML Method (Intra-CARICOM Models), 1990–2019.

Variables	Merchandise Exports (1)	Non-Energy Exports (2)
$dist_{ij}$	−0.42 (0.28)	−1.13 *** (0.18)
$mgdp_j$	−0.39 *** (0.11)	0.24 (0.20)
gdp_j	2.21 *** (0.15)	1.17 *** (0.06)
$tariff_j$	−1.68 *** (0.23)	−1.96 *** (0.26)
$roine_i$	−2.27 *** (0.38)	0.10 (0.38)
TB_{ij}	1.47 *** (0.18)	0.75 *** (0.17)
TC_{ij}	1.15 *** (0.10)	0.80 *** (0.10)
β_0	−13.83 *** (1.04)	−7.28 *** (1.03)
Pseudo R ²	0.93	0.89
Observations	135	135

Notes: Standard errors in parentheses. *** $p < 0.01$. The authors included other variables in this iteration of the model. Some of these variables are found to reduce the number of observations available for estimation, or their coefficients to carry either the wrong sign or to be statistically insignificant. As such these variables were excluded from the specification.

The ROI variable for the non-energy exports model though, is positive but statistically insignificant. From column 2 it is observed that the variables which positively impact on non-energy trade, include the GDP level of the partner country, bilateral trade bias and complementarity scores. Note that the coefficient for manufacturing GDP for country j , though positive is statistically insignificant (column 2).

6. Conclusions

This paper provided a statistical inquiry of the various trade facilitation type factors which impact on the level of merchandise exports and specifically on non-energy exports of T&T. The findings point to factors such as language, port infrastructure liner connectivity and customs having a significant impact on T&T's export performance. To this end, the paper also shows that T&T is lagging behind its Latin American and Caribbean counterparts in terms of the implementation of sustainable trade facilitation mechanisms.

The recommendations discussed below, are therefore linked directly to the results provided in Tables 6 and 7 above are by no means exhaustive and should be considered for interventions which are undertaken in a stepwise manner in order to build capacity at the various institutional levels involved in creating and maintaining a facilitating trade environment. This process must also be incremental. Further, what is necessary in the context of diversification, therefore, is a comprehensive approach which involves state and private sector agencies working together.

In the first instance, language has been identified as a trade facilitating factor. To this end the T&T economy is currently in an advantageous position to deliberately leverage the inflow of Venezuelan immigrants to access Spanish speaking markets in Latin and Central America. The International Organization for Migration, in 2019 reported that on average 41% and 17.1% of the Venezuelan migrant population in T&T possess up to secondary and tertiary level education, respectively, and further that 10% possess technical skills. What is however needed is a strategy by which these skills are profiled and targeted accordingly to the sectors which have export potential. To this end also, migrant entrepreneurship should also be facilitated. As it stands, 23% of migrants have been in T&T for more than a year. Encouraging entrepreneurial skills can help to widen the manufacturing base locally over time, as access to capital and other types of business support is made available to these migrants.

As a medium to long term diversification intervention Spanish as a second language should be facilitated deliberately pursued. This type of intervention links trade facilitation to export diversification in a practical manner as it can enable access to previously uncaptured markets in Central and Latin America. Units such as the Spanish Implementation Secretariat at the Ministry of Education should be expanded to expedite the adoption, teaching and usage of Spanish as a second language in all primary, secondary, and tertiary education facilities in T&T.

Rationalizing liner shipping connectivity and customs procedures can also improve trade outcomes and can specifically impact on the doing business pillar of "trading across borders". Note that in the case of T&T, there has been a decline in the rank on this pillar by 61 points between 2014 and 2020. This is non-trivial and require urgent policy attention. Some interventions include improving capacity of the customs divisions, enhance the scope of digital services offered regarding the registration of trade documents and offering financial support to assist with costs associated with trade logistics. Further, interventions such as increased private sector participation at ports can help to improve bureaucracy, the pace of adoption of modern technologies and the rationalization of record systems.

The results presented above also indicate that there is a need to better leverage the regional market in terms of the economic recovery in the post-COVID context. Deliberate strategies towards trade facilitation can help to boost exports and in particular, non-energy exports and deepen regional integration. Indeed, trade facilitation can enable and deepen regional (and global) economic integration. At the regional level, this can include improved coherence of customs procedures across member states and business to business agreements

to link production value chains. Further, as the CARICOM Single Market and Economy becomes more formalized as a single trade bloc, trade facilitation should be included as key negotiating areas for bilateral and multilateral agreements being engaged. This can help to increase utilization rates of agreements to which the region is party. T&T should use its position as a regional leader to push for unpausing the CSME processes.

Local policy makers should also target the enabling environment locally to reduce bottlenecks and constraints experienced by non-energy exporters. This includes interventions geared towards improving the doing business environment and include enhancing foreign exchange access, capital for expansion, information dissemination regarding markets and opportunities and the financial infrastructure. Encouraging a culture of entrepreneurship and innovation, from the perspective of an overarching industrial policy, can also improve non-energy outcomes especially in the service exports sector. In this regard, it is the view of this paper, that by concentrating efforts on the non-energy sector in this way, new ideas would be generated that would redound to the development of this sector and the wider economy in a much more sustainable and stable manner. Table A1 in Appendix A provides some specific suggestions which can be considered in the local case to improve various aspects of the doing business environment and which can be considered within the framework on a national policy.

In concluding, the role of trade facilitation as an enabler to diversification and increasing exports to existing and new markets, cannot be underestimated nor relegated to the background of policy making. Indeed, trade facilitation, must be seen as part of the dynamic environment which requires constant surveillance given that the factors which can enable (local production and hence) trade changes over time. This type of analysis therefore offers a baseline model against which institutions such as the Ministry of Trade or the Export Import Bank can use to inform their policy and operational strategies, respectively.

Author Contributions: Formal analysis, R.H. and R.G.; Writing—original draft, R.H., R.G. and G.S.; Writing—review and editing, R.H., R.G. and G.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: Data for bilateral trade was obtained from the World Integrated Trade Solutions Database and from the World Development Indicators Database for the other macroeconomic.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Recommendations for T&T following the Doing Business Pillars.

Starting a business	<ol style="list-style-type: none"> 1. Establish a working committee in the Ministry of Labor Small and Medium Sized Enterprises to address challenges faced by the business sector. Set performance standards and benchmarks regarding progress and performance. 2. Organize of regular meetings with members of the private sector (business associations). 3. Develop a country partnership framework in consultation with counterparts and civil society to guide investments and any quality technical assistance to the Government. 4. Rationalize processes for starting a business – review steps required and eliminate unnecessary administrative requirements.
Dealing with construction permits	<ol style="list-style-type: none"> 1. Enable applications to be done via virtual system confirmed via e-mail. 2. Rationalize the flow of information between arms of government, e.g., town and country planning and Environmental Management Authority to reduce processing time.
Getting electricity	<ol style="list-style-type: none"> 1. Introduce an energy sector strategy plan (to include renewable energy opportunities). 2. To adopt environmental and social legislation. 3. Establish a single hub to address client applications and provide timely feedback to applicants.

Table A1. Cont.

Registering property	<ol style="list-style-type: none"> 1. Reduce the registration fee. 2. Improve the quality of land administration system by publishing official service standards and court statistics on land disputes. 3. Update all relevant land and property related legislation. <p>Improve efficiency in transferring property between agents.</p>
Getting credit	<ol style="list-style-type: none"> 1. Encourage state owned financial institutions to develop products for non-energy sector. 2. Encourage private sector financial institutions to develop products for non-energy sector. 3. Offer guarantees to the Exim Bank to encourage non-energy investments and exports.
Protecting minority investors	<ol style="list-style-type: none"> 1. Establish and enforce regulations to protect minority shareholders. 2. Require an independent review and immediate disclosure to the public of related party transactions. 3. Educate minority shareholders about their voting rights and obligations.
Paying taxes	<ol style="list-style-type: none"> 1. Fast track the Revenue Authority. 2. Rationalize paying taxes (and obtaining tax returns). 3. Improve the VAT Returns system for businesses. 4. Introduce incentives for capital accumulation for the purposes of increasing non-energy exports.
Trading across borders	<ol style="list-style-type: none"> 1. Improve logistics at the various ports of entry. 2. Improve capacity of customs divisions / departments: Rationalize customs systems: create a single hub to access trade related services. 3. Undertake capacity building for small and medium sized firms on “how to export”. 4. Encourage financial institutions to offer facilities to assist in trade logistics costs.
Enforcing contracts	<ol style="list-style-type: none"> 1. To establish a specialized commercial division in its supreme court. 2. Reduce legal fees, filing and service times.
Resolving insolvency	<ol style="list-style-type: none"> 1. Strengthen insolvency laws. 2. Rationalize insolvency processes.

References

1. Dennis, A.; Shepherd, B. Trade Facilitation and Export Diversification. *World Econ.* **2011**, *34*, 101–122. [CrossRef]
2. Di Giovanni, J.; Levchenko, A.A. Trade Openness and Volatility. *SSRN Electron. J.* **2006**, *91*, 558–585. [CrossRef]
3. Funke, M.; Ruhwedel, R. Product Variety and Economic Growth: Empirical Evidence for the OECD Countries. *IMF Staff Pap.* **2001**, *48*, 225–242. [CrossRef]
4. Imbs, J.M.; Wacziarg, R.T. Stages of Diversification. *SSRN Electron. J.* **2000**, *93*, 63–86.
5. Cadot, O.; Carrère, C.; Strauss-Kahn, V. Export Diversification: What’s behind the Hump? *Rev. Econ. Stat.* **2011**, *93*, 590–600. [CrossRef]
6. Shepherd, B. Enhancing export diversification through trade facilitation. In *Asia-Pacific Research and Training Network on Trade Policy Brief*; Brief No. 19; United Nations: Bangkok, Thailand, 2009.
7. Khadan, J. *Are Oil and Gas Smothering the Private Sector in Trinidad and Tobago?* IDB Monograph, IADB: Washington, DC, USA, 2016; p. 501.
8. Ministry of Planning and Development. Roadmap for T&T Post Covid-19 Pandemic. 2020. Available online: http://planning.gov.tt/sites/default/files/Report%20of%20the%20Roadmap%20to%20Recovery%20Committee_1st_.pdf (accessed on 3 February 2021).
9. King, M. Diversification as Wealth Generation. *Trinidad Express*. 2020. Available online: https://trinidadexpress.com/opinion/columnists/diversification-as-wealth-generation/article_9b9dce10-3805-11ea-a550-bb58e16cae67.html (accessed on 12 March 2020).
10. Douglas, S. Freight Costs up by 5%. *Trinidad and Tobago Newsday*. 2019. Available online: <https://newsday.co.tt/2019/10/14/freight-costs-up-by-5/> (accessed on 14 October 2019).
11. Indar, D. *National Energy Efficiency Monitoring Report of Trinidad and Tobago*; Economic Commission for Latin America and the Caribbean (ECLAC): Santiago, Chile, 2019.
12. González, J.L.; Sorescu, S. *Helping SMEs Internationalise through Trade Facilitation*; OECD Trade Policy Papers 229; OECD Publishing: Paris, France, 2019.
13. OECD. *Trade Facilitation and the Global Economy*; OECD Publishing: Paris, France, 2018; Available online: <http://dx.doi.org/10.1787/9789264277571-en> (accessed on 3 February 2021).
14. UNECLAC. *Digital and Sustainable Trade Facilitation in Latin America and the Caribbean*; Regional Report; United National Economic Commission for Latin America and the Caribbean: Santiago, Chile, 2019.

15. UNCTAD. Tackling “Non-Tariff Measures”, the New Frontier for Global Trade. 2016. Available online: <https://unctad.org/news/tackling-non-tariff-measures-new-frontier-global-trade> (accessed on 10 February 2021).
16. Kituyi, M. Trade facilitation: Trade competitiveness and the development dimension. In *International Trade Forum*; International Trade Centre: Geneva, Switzerland, 2013.
17. OECD. *Implementation of the WTO Trade Facilitation Agreement: The Potential Impact on Trade Costs*; OECD Publishing: Paris, France, 2015; Available online: http://www.oecd.org/trade/tradedev/WTO-TF-Implementation-PolicyBrief_EN_2015_06.pdf (accessed on 20 February 2021).
18. WTO World Trade Report 2015: Speeding up Trade: Benefits and Challenges of Implementing the WTO Trade Facilitation Agreement. 2015. Available online: https://www.wto.org/english/res_e/booksp_e/world_trade_report15_e.pdf (accessed on 13 February 2021).
19. Rodrik, D. *The Globalization Paradox: Why Global Markets, States, and Democracy Can't Coexist*; Oxford University Press: Oxford, UK, 2011.
20. UNCTAD. *Trade Facilitation and Development Report 2014*; United Nations: Geneva Switzerland, 2014.
21. UNECLAC. Trade Facilitation and Paperless Trade Implementation Survey 2015. In *Latin America and the Caribbean Report*; United Nations Commission for Latin America and the Caribbean: Santiago, Chile, 2015.
22. Debaere, P.; Mostashari, S. Do Tariffs Matter for the Extensive Margin of International Trade? An Empirical Analysis. *J. Int. Econ.* **2005**, *81*, 163–169. [[CrossRef](#)]
23. Feenstra, R.; Kee, H.L. Export variety and country productivity: Estimating the monopolistic competition model with endogenous productivity. *J. Int. Econ.* **2008**, *74*, 500–518. [[CrossRef](#)]
24. Persson, M. *Trade Facilitation and the Extensive and Intensive Margins of Trade*; Lund University Department of Economics Working Paper: Lund, Sweden, 2008.
25. Djankov, S.; la Porta, R.; Lopez-de-Silanes, F.; Shleifer, A. The Regulation of Entry. *Q. J. Econ.* **2002**, *117*, 1–37. [[CrossRef](#)]
26. Beverelli, C.; Neumüller, S.; Teh, R. *Export Diversification Effects of the WTO Trade Facilitation Agreement*; FIW Working Paper; FIW-Research Centre International Economics: Vienna, Austria, 2015.
27. OECD. The critical role of trade Facilitation in supporting economic diversification and structural reforms. In *Aid for Trade at a Glance 2019: Economic Diversification and Empowerment*; OECD Publishing: Paris, France, 2019.
28. Jacks, D.S.; Meissner, C.M.; Novy, D. Trade booms, trade busts, and trade costs. *J. Int. Econ.* **2011**, *83*, 185–201. [[CrossRef](#)]
29. Arvis, J.-F.; Duval, Y.; Shepherd, B.; Utoktham, C. *Trade Costs in the Developing World: 1995–2010*; Policy Research Working Paper; World Bank: Washington, DC, USA, 2013.
30. Novy, D. Gravity Redux: Measuring International Trade Costs with Panel Data. *Econ. Inq.* **2013**, *51*, 101–121. [[CrossRef](#)]
31. Anderson, J.E.; Wincoop, E.V. Trade Costs. *J. Econ. Lit.* **2004**, *42*, 691–751. [[CrossRef](#)]
32. Wilson, J.S.; Mann, C.L.; Otsuki, T. *Assessing the Potential Benefit of Trade Facilitation: A Global Perspective*; World Bank Working Paper 3224; World Bank: Washington, DC, USA, 2004.
33. Duval, Y.; Utoktham, C. *Intraregional Trade Costs in Asia-A Primer*; Working Paper Series 110; United Nations Economic and Social Commission for Asia and the Pacific (ESCAP): Bangkok, Thailand, 2010.
34. Hossain, S.S.; Rahman, T. Facilitating Trade through Simplification of Trade Processes and Procedures in Bangladesh. In *Studies in Trade and Investment*; United Nations Economic and Social Commission for Asia and the Pacific (ESCAP): Bangkok, Thailand, 2011; p. 63.
35. Gofembska, E. New Logistics Paradigms in Poland. *Logistics* **2019**, *3*, 19. [[CrossRef](#)]
36. Alavi, H. Good practice in trade facilitation: Lessons from Tunisia. *Premnotes* **2004**, *89*, 87–90.
37. Hoekman, B.; Nicita, A. *Trade Policy, Trade Costs, and Developing Country Trade*; Policy Research Working Paper 4797; World Bank: Washington, DC, USA, 2008.
38. Hayakawa, K.; Kimura, F.; Nabeshima, K. Nonconventional provisions in regional trade agreements: Do they enhance international trade? *J. Appl. Econ.* **2019**, *17*, 113–138. [[CrossRef](#)]
39. Westurland, J.; Wilhelmsson, F. Estimating the Gravity Model without Gravity Using Panel Data. *Appl. Econ.* **2011**, *43*, 641–649. [[CrossRef](#)]