EMPLOYING THE UNCTAD NON-TARIFF MEASURES DATABASE. DESCRIPTION ACROSS AGRI-FOOD SECTORS AND SELECTED REGIONS, WITH A FOCUS ON EU TRADE PARTNERS

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1. Introduction

Non-tariff measures (NTMs) are defined as "policy measures, other than ordinary customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both" (UNCTAD, 2010). These measures emanate from regulations that may aim at legitimate objectives such as food safety, environment protection, prevention of diseases spread, or information conveyance to the final consumer, but also can pursue domestic protective goals. Regulatory convergence could facilitate trade without hampering fair domestic goals, while reducing the regulatory overload could also contribute to reduce trade costs and benefit trade. In any case, a transparent dissemination of non-tariffs measures helps exporters to identify the rules faced when accessing foreign markets and the complying costs involved, and policy makers to act upon those measures that could be reduced, eliminated or harmonized.

Institutional efforts to collect and classify NTMs initiated in 1994, while in 2006 received the necessary impulse through the creation of the Multi-Agency Support Team (MAST). Several institutions were involved, such as: Food and Agriculture Organization (FAO); Organization for Economic Co-Operation and Development (OECD); United Nations Conference on Trade And Development (UNCTAD); World Bank (WB); World Trade Organization (WTO); and the Group of Eminent Persons on Non-tariff Barriers (GNTB). As a result, a detailed definition and classification of NTMs was agreed that facilitated the systematic collection of data on non-tariff measures. UNCTAD leads the dissemination of these data, known as UNCTAD Trade Analysis Information System (TRAINS), which is accessible through World Integrated Trade Solutions (WITS) and Integrated Trade Intelligence Portal (I-TIP) interface software, developed by World Bank and WTO, respectively. More recently, an aggregated dataset for research purposes has been built by UNCTAD (UNCTAD, 2017b). We refer to the latter as UNCTAD NTMs Database.

The objective of this report is to explore the UNCTAD NTMs database, providing a descriptive analysis on the NTMs affecting global trade in agri-food products, with a special focus on the EU as exporter. Such description is based on the calculation of two sets of indicators, unilateral and bilateral. While the former are the ones usually found in the literature (Gourdon, 2014) the latter are more recent (Cadot, Asprilla, Gourdon, Knebel, & Peters, 2015; UNCTAD, 2017a), and exploit the idea of similarity or dissimilarity of the NTMs structure across trade partners. It is important to observe which destination countries can be more difficult to access due to the weight of NTMs and/or which sectors may be more affected, but also to understand the effect of policy harmonization on trade.

The report is structured as follows. Section 1 presents the UNCTAD NTMs Database, focusing on coverage of countries, types of NTMs and years. Likewise, a selection of regions/countries and sectors of interest is carried out. The selection is based on both, ongoing trade negotiations by the EU, as well as trade weights. Two broad sectoral classifications are used: the HS 2-digit sectors for a first insight into the incidence of NTMs and understanding of the sectoral weights in extra-EU trade, and the Global Trade Analysis Project (GTAP) sectoral classification, selected in virtue of its compatibility with main general equilibrium models (i.e. GTAP). Section 3, presents the methodology, which consists on the calculation of two different sets of indicators: unilateral and bilateral. The former focus on the importer perspective and includes analysis of frequency ratios (FR), coverage ratios (CR), regulatory intensity (RI) and regulatory scope (RS). The latter takes the EU as the exporter and considers the degree of similarity or dissimilarity with its trade partners in terms of: the coverage of NTM categories, the gap in regulatory intensity, and the percentage of overlapping categories. Section 4 presents results of unilateral indicators and section 5 results on bilateral indicators. Section 6 concludes.

2. Data

2.1. Non-tariff measures (NTMs) database

2.1.1. Definition

The most widely accepted definition of NTMs is provided after a series of meetings and consultations of the Group of Eminent Persons on Non-Tariff Barriers (GNTB) and the Multi-Agency Support Team (MAST), who proposed the following definition:

"NTMs are policy measures, other than ordinary customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both" (UNCTAD, 2010).

The following provides an extension to the definition of NTMs, which serves to minimize any *uncertainties or misunderstandings* (Knebel & Penello Rial, 2016).

- *The definition of NTMs does not judge legitimacy, adequacy, necessity or the discriminatory nature of any form of policy intervention. Furthermore, the concept of NTMs is neutral and does not imply a negative or positive impact on trade.*
- *Non-tariff barriers (NTBs) are a subset of NTMs, implying a negative impact on trade. NTMs cannot be simply qualified as NTBs on the basis of a single piece of regulation and can only be unequivocally identified as such following analysis of detailed data.*
- *The existence of a NTM on a specific product in a given country per se, vis-à-vis nonexistence of NTM in another country, would not mean the former has a more restrictive trade regime. It would depend on the nature, substance and application of the measure.*
- *Some NTMs might have a positive impact on trade, though many NTMs are thought to have important restrictive and/or distortionary effects on international trade regardless of whether they are applied with protectionist intent or to address important non-trade objectives.*
- *A regulation is a legal document issued officially by a Government, such as a law, decree or directive. An official regulation could bear several measures (or NTMs).*
- *A NTM is a mandatory requirement enacted by an official law or regulation. Voluntary measures or private or voluntary standards are not included, such as requisites put forward by private organizations (i.e. Retail companies).*
- *International standards, such as International Organization for Standardization (ISO) or CODEX Alimentarius standards, are not considered NTMs unless adopted and made part of the national legislation in a country.*
- *Procedural obstacles to trade, i.e. practical challenges and processes that make compliance with the measures difficult, are neither considered as NTMs per se. Procedural obstacles are issues related to the process of application of a NTM, rather than the measure itself. Examples include problems caused by the lack of adequate testing facilities to comply with technical measures or excessive paperwork in the administration of licenses.*

It is important to note that all measures imposed by the importing country, regardless of whether they are executed or verified in either the exporting or the importing country, are considered to be import measures since they relate to the importation of the product. This can include domestic regulations that apply equally to domestically produced goods if the requirement also holds for selling imported products (UNCTAD, 2017a-p.4).

The latest NTMs classification from MAST follows a hierarchical structure where NTMs are differentiated according to 16 chapters (denoted by alphabetical letters), which are divided into two broad categories: i) import measures, that reflect the requirements of the importing country on its imports; and ii) export measures, that reflect the requirements imposed by the exporting country on its own exports (Table 1). Import measures are further divided into two groups, technical and non-technical measures.

Table 1: Non-tariff measures classification

IMPORT	TECHNICAL MEASURES	A	SANITARY AND PHYTOSANITARY (SPS) MEASURES	Measures that are applied to protect human or animal life from risks arising from additives, contaminants, toxins or disease-causing organisms in their food or feed; to protect human, animal and plants from dissemination of diseases; to protect bio-diversity. These include measures taken to protect the health of fish and wild fauna, as well as of forests and wild flora. These include certification, testing, inspection, and quarantine measures.
		B	TECHNICAL BARRIERS TO TRADE (TBT)	Measures referring to technical regulations and standards, labelling, and procedures for conformity assessment, such as certification, testing and inspection, other than for SPS reasons.
		C	PRE-SHIPMENT INSPECTION AND OTHER FORMALITIES	Measures related to pre-shipment inspection and other formalities in the exporting country prior to shipment.
	NON TECHNICAL MEASURES	D	CONTINGENT TRADE PROTECTIVE MEASURES	Measures implemented to counteract particular adverse effects of imports in the market of the importing country, including measures aimed at "unfair" foreign trade practices, contingent upon the fulfilment of certain procedural and substantive requirements. They include antidumping, countervailing and safeguards measures.
		E	NON-AUTOMATIC LICENSING, QUOTAS, PROHIBITIONS AND QUANTITY CONTROL MEASURES OTHER THAN FOR SPS OR TBT REASONS	Control measures generally aimed at restraining the quantity of goods that can be imported, regardless of whether they come from different sources or one specific supplier. These measures can take the form of non-automatic licensing, fixing of a predetermined quota, or through prohibitions, not SPS or TBT related.
		F	PRICE CONTROL MEASURES INCLUDING ADDITIONAL TAXES AND CHARGES	Measures implemented to control or affect the prices of imported goods in order to, inter alia: support the domestic price of certain products; establish the domestic price of certain products because of price fluctuation in domestic markets, or price instability in a foreign market; or to increase or preserve tax revenue. This category also includes measures that increase the cost of imports in a similar manner to tariffs i.e. by fixed percentage or by a fixed amount: they are also known as para-tariff measures.
		G	FINANCE MEASURES	Financial measures are intended to regulate the access to and cost of foreign exchange for imports and define the terms of payment. They may increase import costs in the same manner as tariffs.
		H	MEASURES AFFECTING COMPETITION	Measures to grant exclusive or special preferences or privileges to one or more limited group of economic operators (i.e. state trading, sole importing agencies, compulsory use of national services or transport)
		I	TRADE-RELATED INVESTMENT MEASURES	Measures that restrict investment by requesting local content and thus restricting imports, or requesting that investment should be related to export in order to balance imports.
		J	DISTRIBUTION RESTRICTIONS	Distribution of goods inside the importing country may be restricted. It may be controlled through additional licenses or certification requirements.
		K	RESTRICTION ON POST-SALES SERVICES	Measures restricting producers of exported goods to provide post-sales service in the importing country.
		L	SUBSIDIES (excluding export subsidies)	Financial contribution by a government or public body, or via government entrustment or direction of a private body (direct or potential direct transfer of funds) or income or price support, which confers a benefit and is specific (to an enterprise or industry or group thereof, or limited to a designated geoFigureical region).
		M	GOVERNMENT PROCUREMENT RESTRICTIONS	Measures controlling the purchase of goods by government agencies, generally by preferring national providers.
		N	INTELLECTUAL PROPERTY	Measures related to intellectual property rights in trade: intellectual property legislation covers patents, trademarks, industrial designs, lay-out designs of integrated circuits, copyright, geoFigureical indications (GI) and trade secrets.
		O	RULES OF ORIGIN	They cover measures that restrict the origin of products or their inputs.
EXPORTS		P	EXPORT RELATED MEASURES	Measures that a country applies on its exported goods, such as export taxes, export quotas or export prohibitions.

Source: (UNCTAD, 2015): International Classification of Non-Tariff Measures (2012 version)

2.1.2. NTMs Data

Since April 2017, UNCTAD made available a database on the inventory of NTMs[1] for research use, which puts together all the information available for 57 reporters (including the EU as a single identity), conducting the calculation of the number of measures applied, by HS 6-digit line, within

[1] http://i-tip.unctad.org/Forms/Analysis.aspx

each 4-digit NTM category (i.e. MAST classification). In addition, the database is also accessible for partial analysis through the I-TIP platform (developed by WTO)[2].

From the 16 NTM categories in Table 1, the UNCTAD NTMs database records measures from A to J, and P (11 types) in both, agri-food and non agri-food sectors. These 1-digit NTM types are further subdivided into a total of 175 NTM subcategories at 4-digits in agri-food sectors: A (42); B (28); C (6); D (13); E (32); F (19); G (6); H (4); I (2); J (2); and P (19).

This database represents a substantial advantage with respect to previous available NTM-TRAINS datasets (i.e. individual for each reporter; the number of measures required own calculations, and less information, such as the type of coverage, was recorded). Details on the interpretation of the database are provided by UNCTAD in their guide on using the database (UNCTAD, 2017c). The database has more than 13 million observations (specifically 13,749,615 observations, from which, 3,279,284 refer to agri-food sectors as defined in the following section).

The original database is bilateral, indicating the number of measures that importer *j* applies to exporter *i*, in sector *h* (HS 6-digit), of type *k* (NTM category according to the MAST classification, and defined at four digits). Most measures apply to any origin (which is indicated by partner=WLD), but still there are some measures that can apply to specific partners. For the description purposes in this report, however, we follow the recommendations by UNCTAD to build up a database for each reporter/HS6 line (UNCTAD, 2017c-p.17). The resulting file has 293,936 observations. [3]

The original database informs about the year of collection of the NTM data, that normally is specific for each reporter but not for any other dimension (sector or type of NTM). Besides, the starting and ending date of application is also recorded. Using both variables allows us to provide a temporal dimension to the data, which is used in the estimation phase of the project but not in the current report.[4] Empirical applications using UNCTAD NTMs data only use a cross section, corresponding to the year of data collection, or to a later year assuming that the measures collected previously are still in force. The only exception, as far as the authors know, is the work from UNCTAD on Deepening regional integration in Mercosur (UNCTAD, 2017a), although details are not provided. In the current report, we simply apply the indicators to the existing data, without taking the time dimension into account as it is the usual practice. This assumes that all the reported measures are still in force, which in any case, would imply a minor bias as only 0.1% of observations report an ending data equal or before 2018 (0.2% of agri-food observations).

Finally, the UNCTAD NTMs database includes two variables to account for the number of measures applied by the reporter, named as "nbr" and "all". The former refers to the gross number of measures applied, by each reporter/partner and NTM 4-digit category, while "all" refers to 'generic measures', or measures applied by a reporter to all HS 6- lines. We follow the recommendation by (UNCTAD, 2017c - p.13, p.24) and calculate the difference between 'nbr' and 'all', to better depict the sectoral coverage of NTMs.

[2] http://trains.unctad.org/

[3] To build our database for estimation, though, we add up both, multi- and bilateral measures, when they co-exist in the same destination/sector/NTM category.

[4] That is, we build up a time series variable that captures the number of measures in force in each year of our period of analysis, 2012-2015.

Table 2: List of countries and year of collection of NTM data

Reporter	Reporter (ISO3)	Data collection year min	Data collection year max	Reporter	Reporter (ISO3)	Data collection year min	Data collection year max
Afghanistan	AFG	2012	2012	Cambodia	KHM	2015	2015
Argentina	ARG	2015	2015	Lao PDR	LAO	2015	2015
Australia	AUS	2013	2015	Liberia	LBR	2014	2014
Benin	BEN	2014	2014	Sri Lanka	LKA	2012	2012
Burkina Faso	BFA	2012	2012	Mexico	MEX	2013	2015
Bolivia	BOL	2015	2015	Mali	MLI	2014	2014
Brazil	BRA	2013	2015	Myanmar	MMR	2015	2015
Brunei	BRN	2015	2015	Malaysia	MYS	2015	2015
Canada	CAN	2013	2015	Niger	NER	2014	2014
Chile	CHL	2013	2015	Nigeria	NGA	2013	2013
China	CHN	2012	2013	Nicaragua	NIC	2015	2015
Côte d'Ivoire	CIV	2012	2012	Nepal	NPL	2012	2012
Colombia	COL	2015	2015	New Zealand	NZL	2013	2015
Cape Verde	CPV	2014	2014	Pakistan	PAK	2012	2012
Costa Rica	CRI	2015	2015	Panama	PAN	2015	2015
Cuba	CUB	2015	2015	Peru	PER	2015	2015
Ecuador	ECU	2015	2015	Philippines	PHL	2013	2015
Ethiopia	ETH	2015	2015	Paraguay	PRY	2015	2015
European Union	EUN	2013	2015	Russian Federation	RUS	2016	2016
Ghana	GHA	2014	2014	Senegal	SEN	2012	2012
Guinea	GIN	2012	2012	Singapore	SGP	2015	2015
The Gambia	GMB	2013	2013	El Salvador	SLV	2015	2015
Guatemala	GTM	2015	2015	Togo	TGO	2014	2014
Honduras	HND	2015	2015	Thailand	THA	2015	2015
Indonesia	IDN	2013	2015	Tajikistan	TJK	2015	2015
India	IND	2012	2013	Uruguay	URY	2015	2015
Japan	JPN	2015	2015	United States	USA	2013	2014
Kazakhstan	KAZ	2012	2012	Venezuela	VEN	2015	2015
				Vietnam	VNM	2015	2015
Total						2012	2016

Source: Own elaboration based on UNCTAD NTMs Database.

Note: a different minimum and maximum means that NTM information for that country was collected in different years.

2.2. Selection of regions and sectors of special relevance in extra-EU trade

2.2.1. Sectors

The NTM data is presented at HS 6-digit level disaggregation, that amount to more than 900 agri-food products or lines. To make the description operative, we need to use some broader aggregation. For this purpose, we use mainly the GTAP (Global Trade Analysis Project) sectoral classification. This is a standard aggregation used in general equilibrium models, and as such,

makes our description and analysis compatible with possible further trade modeling studies. Table 3 presents the GTAP sectors basic description, as well as the correspondence with the HS nomenclature at 2-digits and the number of HS 6-digit lines covered. Furthermore, we classify into agriculture, food and non-agri-food sectors. Following this classification, there are 11 agricultural sectors and 8 food sectors (i.e. involving some transformation of the raw agricultural or primary sectors).

Table 3: GTAP Sectors composition

	Description	No. of HS6 lines [1]	HS2-digit codes[2]
Agriculture[3]		***366***	
C_B	Sugar cane and sugar beet	2	12
CTL	Cattle	14	**01**;05
GRO	Other grains: corn, barley, rye, oats	23	10
OAP	Other Animal Products	68	**01**;02;03;04;05;15;41;43
OCR	Other Crops: live plants; flowers; seeds;	89	06**;09;12**;18;23;24
OSD	Oil Seeds	24	12
PDR	Paddy Rice	2	10
PFB	Plant Fibres	8	52;**53**
V_F	Vegetables & Fruits	123	07;08;12
WHT	Wheat	6	10
WOL	Wool and other raw materials used in textile	7	05;50;**51**
Food		***605***	
B_T	Beverages and tobacco	33	11**;22**;23;24
CMT	Cattle Meat	36	**02**;15
MIL	Milk: dairy products	26	**04**;17;21;35
OFD	Other Food	389	**03;**04;05;07;08;09;11;12;13;16;17;18;19;20;21;22;33;35
OMT	Other Meat	61	**02**;15;16;23
PCR	Processed Rice	2	10
SGR	Sugar	9	17
VOL	Vegetable Oils	49	12;14**;15**;23
Non-Agri-Food		4838	03;05;06;12-15;25-76;78-97
24 GTAP Sectors			
Total		***5809***	

Notes: [1] The number of HS 6-digit lines as found in UNCTAD NTMs database (corresponding to three nomenclatures: H2 2012; H3 2007; H4 2012). [2] In bold, the HS 2-digit sector with the highest number of HS 6-digit lines. [3] Correspondence between GTAP Sectors and HS 6-digit lines downloaded from World Bank WITS. [3] Fish products (GTAP Code: FSH) are excluded from the agri-food aggregate in the present report.

As it can be seen in Table 3, there is not a perfect correspondence between GTAP sectors and HS 2-digit lines. That is, some 2-digit HS lines can be shared by different GTAP sectors (eg. 01 can fall into CTL and OAP) while most of the GTAP sectors include lines that belong to different HS 2-digit lines.

Nevertheless, we conduct some preliminary analysis also on the HS 2-digit sectors described in Table 4. Agri-food sectors comprise sectors from 1 to 24 (note that the GTAP classification, however, includes HS 6-digit lines that belong to HS2-digit groups beyond HS 2-24).

Table 4: Product description by HS 2-digit codes

HS 2	Product Description
01	Live animals
02	Meat and edible meat offal
03	Fish and crustaceans, molluscs and other aquatic invertebrates
04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere ...
05	Products of animal origin, not elsewhere specified or included
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage
07	Edible vegetables and certain roots and tubers
08	Edible fruit and nuts; peel of citrus fruit or melons
09	Coffee, tea, mate and spices
10	Cereals
11	Products of the milling industry; malt; starches; inulin; wheat gluten
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal..
13	Lac; gums, resins and other vegetable saps and extracts
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included
15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal ...
16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates
17	Sugars and sugar confectionery
18	Cocoa and cocoa preparations
19	Preparations of cereals, flour, starch or milk; pastrycooks' products
20	Preparations of vegetables, fruit, nuts or other parts of plants
21	Miscellaneous edible preparations
22	Beverages, spirits and vinegar
23	Residues and waste from the food industries; prepared animal fodder
24	Tobacco and manufactured tobacco substitutes

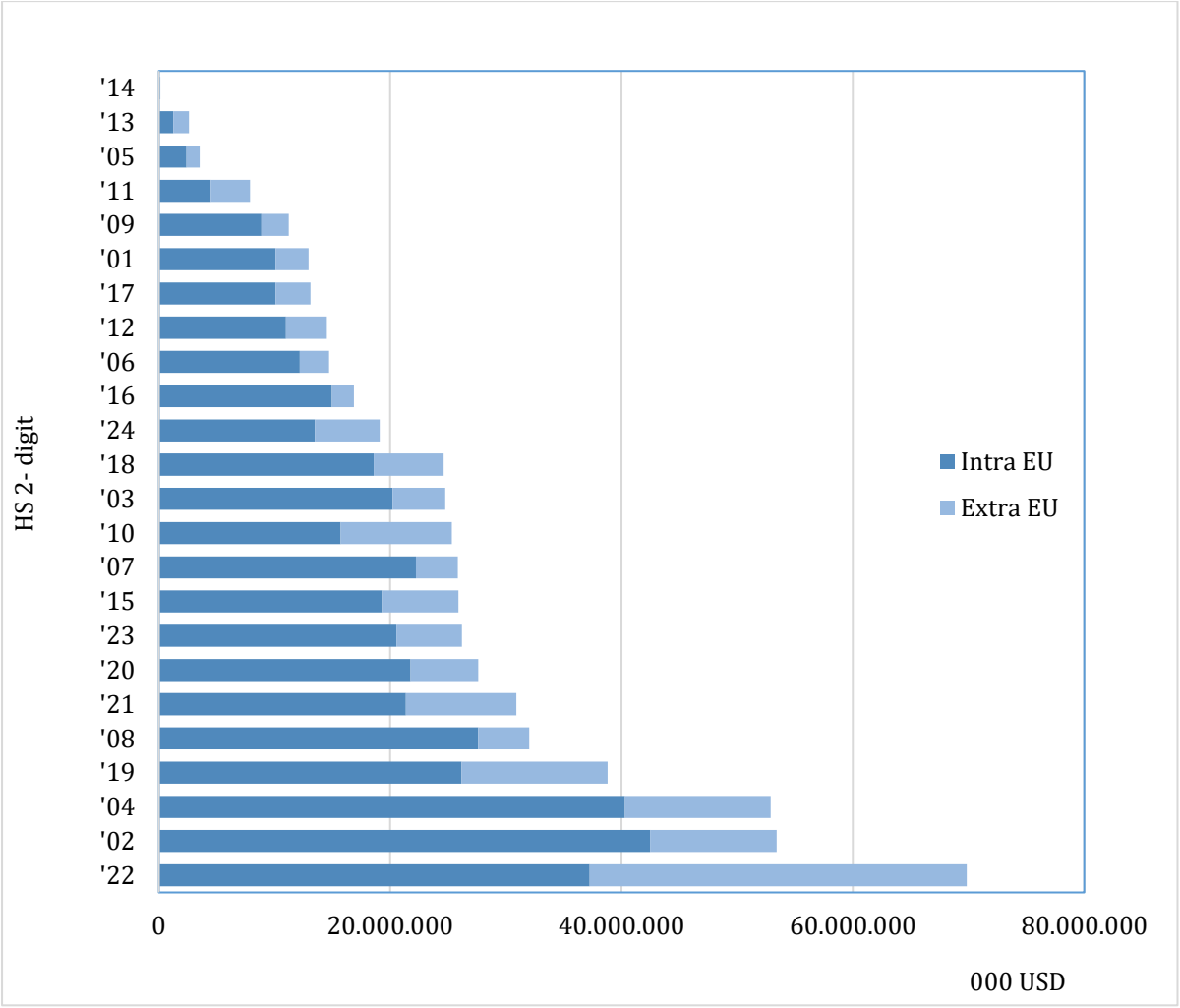
In particular, in order to have an initial idea of which are the most exported food products by the EU, Figure 1 presents the average of EU exports, in thousands of US Dollars (USD), in the period 2013-2017, differentiating between intra-EU and extra-EU exports. Beverages (HS2 – 22) is the sector traded the most, with a value close to 70 billion USD, followed by Meat (HS2 – 02) and Dairy (HS2 – 04), with an average exported value over 53 billion USD each. The next most exported sectors are Preparations of cereals (HS2 – 19) (around 39 billion USD), followed by Fruits (HS2 – 08) and Miscellaneous edible preparations (HS2 – 21) (around 32 billion USD), Preparations of vegetables and fruits (HS2 – 20), and Vegetables (HS2 – 07), with average values around 30 billion USD and around 27 billion USD each. The ranking of extra-EU exports follows a similar pattern, but most of the EU trade is intra-EU (73% of the total). Destinations away from the EU are more important in HS2 sectors 13, 22 and 11, accounting for 52-47-43% of the value of exports, on average, and they become less important in fresh produce, like fruits and vegetables (HS2 codes 07 and 08) with a weight of 14%. Meats (HS2 - 02) and dairy (HS2 - 04) products occupy an intermediate position (20-24% of EU exports are addressed to non-EU countries).

Focusing on Spanish exports (Figure 2) we see that the most exported products are Fruits (HS2 – 08) (around 9 billion USD), followed by Vegetables (HS2 – 07) (around 6.4 billion USD), Meat (HS2 – 02) (around 5.6 billion USD), Beverages (HS2 – 22) and Fats and Oils (HS2 – 15) (around 4.7 billion USD). The EU countries absorb most of the Spanish exports in every single agri-food product (75% of the total). Within the list of most exported products, extra-EU exports constitute

only 7-10% of Spanish exports of fruits (HS2 - 08) and vegetables (HS2 - 07), around 28% in meats (HS2 - 02), 40% in beverages (HS2 - 22) and fats and oils (HS2 - 15).

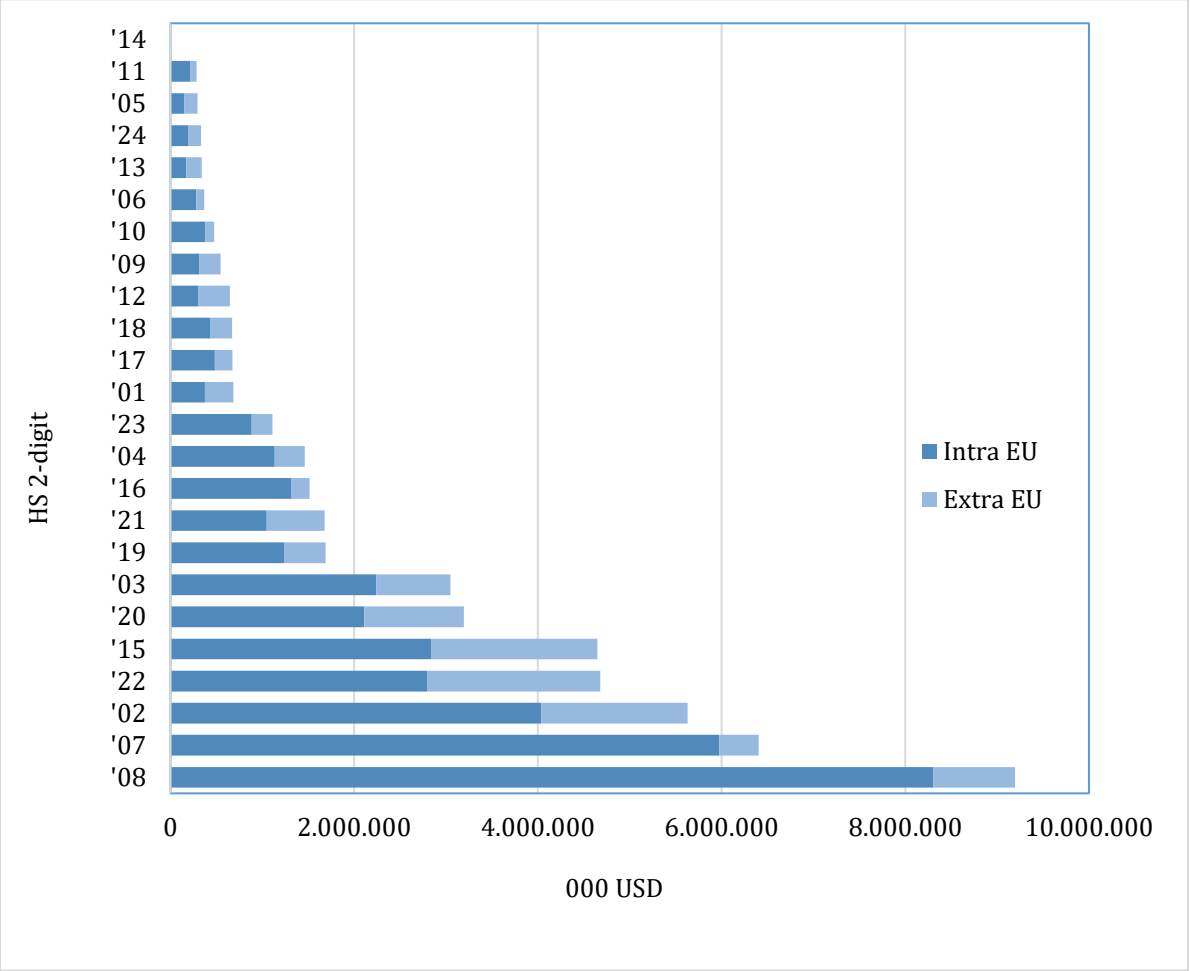
Consequently, sector specific analysis on NTMs will focus on some of the big sectoral aggregates mostly traded by Spain and the EU: fruits, vegetables, meats, dairy products, and beverages, which in GTAP sectoral classification correspond to sectors (see Table 3): V_F (vegetables and fruits); CMT (cattle meat); OMT (other meat); MIL (dairy); and B_T (beverages and tobacco).

Figure 1: Value of EU exports by HS 2-digit (mean 2013-2017, in Thousand USD)



Source: ITC calculations based on UN ComTrade

Figure 2: Value of Spanish exports by HS 2-digit (mean 2013-2017)



Source: ITC calculations based on UN ComTrade

2.2.2. Regions

As mentioned before, NTM data is available for 57 countries, including the EU as a single identity. We make use of all the available information, and provide particular insights for specific regions/countries of interest for the EU and Spanish agri-food trade. In particular, we focus and consider of special relevance, those regions with which the EU has achieved or is in the process of achieving deeper integration agreements. Most frequently regional trade agreements aim at reducing and/or eliminating tariffs, while it is becoming more frequent the inclusion of provisions related to non-tariff measures. In particular, clauses encouraging harmonization and/or mutual recognition of standards, or at least mutual recognition of conformity assessments are becoming more usual. Indeed, (Cadot & Gourdon, 2016) report that fifty-eight out of seventy Regional Trade Agreements (RTAs) surveyed included provisions on TBTs. In any case, trade negotiations affect both, the intensive and extensive margins of trade, in other words ease the access to emerging markets and/or further export penetration. Studying the structure and incidence of NTMs on those destination markets is relevant to better ascertain trade opportunities for the EU in general, and Spain in particular. From the EU as importer, a better access to the EU market may contribute to intensify competition for the Spanish exports in certain sectors that nevertheless, start with the competitive advantage of enjoying a level of NTM regulation compatible with EU standards.

The Directorate General (DG) for Trade of the European Commission webpage[5] provides information about those regions with which the EU is engaged or envisages to engage in trade negotiations. A full list is presented in Appendix 1, while here we highlight:

- Mercosur (South American Common Market): Argentina, Brazil, Uruguay, Paraguay. Association agreement resumed in 2016.
- India: Free Trade Agreement negotiations ongoing
- Japan: Economic partnership agreement in July 2017, entered into force in July 2018
- ASEAN (Association of South-East Asia Nations): Myanmar, Philippines, Indonesia, Thailand, Malaysia, Vietnam, Singapore. While an agreement exists with the last two countries, it has not entered into force yet. Bilateral negotiations with the rest of countries are still ongoing.
- Australia and New Zealand: The EU Commission proposed negotiating directives recently, in September 2017.
- South Mediterranean (Egypt, Jordan, Morocco, Tunisia). Negotiations ongoing, while in the case of Morocco and Tunisia, an update of the previous Association Agreement into a Deep and Comprehensive Free Trade Area (DCFTA) started in 2013.
- Mexico: a modernisation of global agreement started in 2016
- Canada: a Comprehensive Economic and trade Agreement (CETA) entered into force, provisionally, in 2017, awaiting for some EU National parliaments agreement.
- USA: the Trans-Atlantic Trade and Investment Partnership-TTIP initiated in 2013 and currently on hold

Amongst the above regions, the only region not covered by the UNCTAD NTMs database is South Mediterranean countries. Thus, we will mainly use the regional classification in Table 5. Some overall description will consider the classification of countries according to income groups (as classified by the World Bank), which is usual as it is often reported that developed countries impose a more sophisticated network of NTMs compared to developing countries.

[5] ec.europa.eu/trade/policy/countries-and-regions/negotiations-and-agreements

Table 5: Selected regions for NTM description

Region/Country	Reporters
Asean (Asean)	Brunei (BRN), Indonesia (IDN), Cambodia (KHM), Laos (LAO), Myanmar (MMR) Malaysia (MYS) Philippines (PHL) Singapore (SGP) Thailand (THA) Vietnam (VNM)
European Union (EU)	
Europe & Central Asia (Eur&CAsia)	Kazakhstan (KAZ), Russian Federation (RUS), Tajikistan (TJK)
Latin America & Caribbean (LatinAm)	Bolivia (BOL), Chile (CHL), Colombia(COL), Costa Rica (CRI), Cuba (CUB), Ecuador (ECU), Guatemala (GTM), Honduras (HND), Nicaragua (NIC), Panam (PAN), Peru (PER), El Salvador (SLV), Venezuela (VEN)
Mercosur (Merco)	Argentina (ARG), Brasil (BRA), Uruguay (URY), Paraguay (PRY)
South Asia (SAsia)	Afganistan (AFG), Sri Lanka (LKA), Nepal (NPL), Pakistan (PAK)
Sub-Saharan Africa (SSAf)	Benin (BEN), Burkina Faso (BFA), Côte d'Ivoire (CIV), Cape Verde (CPV), Ethiopia (ETH), Ghana (GHA), Guin (GIN), The Gambia (GMB), Liberia (LBR), Mali (MLI), Niger (NER), Nigeria (NGA), Senegal (SEN), Togo (TGO)
Individual countries:	Australia (AUS) Canada (CAN) China (CHN) India (IND) Japan (JPN) Mexico (MEX) New Zealand (NZL) United States of America (USA)

3. Non-tariff measures indicators

We calculate two sets of indicators, unilateral and bilateral indicators. The first one takes into account only the perspective of the importer, whereas the second one focuses on the degree of similarity or dissimilarity of a single importer and exporter or group of importers and exporters.

3.1. Unilateral indicators based on the importer perspective

This is the usual approach in the literature aiming at describing the incidence of NTMs. There are four indicators, following closely (Gourdon, 2014) and (UNCTAD, 2017c), corresponding to the "inventory approach":

1. Frequency Ratio
2. Regulatory Intensity
3. Coverage Ratio
4. Regulatory Scope

1. The **Frequency Ratio** (FR) (named Frequency Index by Gourdon, 2014) indicates the proportion of HS 6-digit lines or products *h* imported by the reporter *j* affected by at least one NTM:

$$FR^j = \frac{\sum_h d_h^j M_h^j}{\sum_h M_h^j} \cdot 100 \qquad (1.a) \qquad\qquad FR^j = \frac{\sum_h d_h^j}{Nh^j} \cdot 100 \qquad (1.b)$$

where *d* is a dummy variable reflecting the presence of one or more NTMs and M indicates whether there are imports of good *h* (also a dummy variable). A simpler variant of (1.a) is defined as the proportion of HS6 lines affected by NTMs (i.e. the numerator simply use the NTM indicator of NTMs (*d*) and the denominator is the total number of product lines (Nh^j) which depends on the HS nomenclature used by the reporter (1.b.).[6]

The Frequency Ratio for each reporter *j* can be calculated over all HS 6-digit lines or over sectoral aggregations. In particular, we calculate Frequency Ratios for agriculture, food, non-agri-food, and each agri-food GTAP sector, and the denominator will vary accordingly (see overall number of products for broad and specific sectors in Table 3).

2. The **Regulatory Intensity (RI)** (named Prevalence Score by Gourdon, 2014) counts the average number of measures that affect a product *h* imported by country *j*. For the calculations in this report, we use the net number of non-generic measures as recommended by (UNCTAD, 2017c)- p.12-13) to better distinguish affected *vs* non-affected products (see also Section 2.1), that we code as *Nm*. For a certain reporter *j*, the average Regulatory Intensity is:

$$RI^j = \frac{\sum_h Nm_h^j M_h^j}{\sum_h M_h^j} \qquad (2.a.) \qquad\qquad RI^j = \frac{\sum_h Nm_h^j}{Nh^j} \qquad (2.b)$$

Expression (2.a) calculates the average over the traded lines, while (2.b) calculates over all lines. In the reported results we use the latter (minor changes are observed and not-reported using (2.a).

3. The **Coverage ratio (CR)** for country *j* is the share of its imports subject to NTMs. In Equation (1.a), the dummy for the indication of trade (M_h^j) is replaced by the value of trade (V_h^j), and the denominator is replaced by the total value of imports:

$$CR^j = \frac{\sum_h d_h^j V_h^j}{\sum_h V_h^j} \cdot 100 \qquad (3)$$

This is considered as superior to the frequency ratio in (1.a), as the frequency ratio does not reflect the relative value of the affected products and thus cannot give any indication of the importance of the NTMs on overall imports (Gourdon, 2014).

One general drawback of the coverage ratio, or any other weighted average, arises from the likely endogeneity of the weights (the fact that imports are dependent on NTMs), which, in general, leads to an underestimation of the trade value affected by NTMs.

4. The **Regulatory Scope** (RS) (named as pervasiveness by Gourdon, 2014) counts the number of different chapters or subcategories *k* of NTMs (e.g. at 4-digit level) applied to the imported product *h* in country *j.* Averaging over the number of products imported (or simply over the number of products):

$$RS^j = \frac{\sum_h \sum_k d_{h,k}^j M_h^j}{\sum_h M_h^j} \qquad (4.a) \qquad\qquad RS^j = \frac{\sum_h \sum_k d_{h,k}^j}{Nh^j} \qquad (4.b)$$

[6] Most of the countries report NTM data in H4 2012 nomenclature, but there are 17 countries that use H3 2007; and one H2 2002. The number of product lines in each nomenclature are: H4: 5205 (864 agri-food products); H3: 5052 (694 agri-food); H2: 5224 (704 agri-food).

where $d^{j}_{h,k}$ is a dummy variable that values 1 when reporter *j* applies at least one non-tariff measure of subcategory *k*, in sector *h,* and 0 otherwise. Again, for simplification, we run the calculations using (4.b).

Arguably, the greater the number of NTMs applied to the same product, the more regulated the commerce of that product is, especially if measures are from different chapters (Gourdon, 2014).

Any of the above indicators can be calculated for any sectoral aggregation (i.e. GTAP sector) simply running the sum in *h* up to the number of *h*-sectors within each broader sector, and using the corresponding number of *h*-sectors within that sector aggregation. This is what we do in some of the tables and Figures in Section 4, with a further averaging over countries.

3.2. Bilateral Indicators of Dissimilarity/Similarity

So far, we have described the regulatory intensity (number of measures), incidence (proportion of products affected and proportion of trade value affected) and scope (number of different NTMs subcategories) of NTMs unilaterally from the importer perspective regardless the trade partner. Next, we build a set of indicators that help to visualize the degree of similarity or dissimilarity of regulation patterns between countries and/or regions. For this purpose, we define three indicators:

1. Similarity Index (SI), introduced by Cadot et al., (2015) and also applied by UNCTAD, (2017a) and Cadot, Gourdon, & Tongeren, (2018).
2. Regulatory Intensity Gap (RIG), inspired by the work of Ferro, Otsuki, & Wilson, (2015).
3. Regulatory Overlap (RO), as in UNCTAD, (2017a).

1. Similarity Index (SI)

The SI deals with the patterns of NTM regulation between the importer *j* and the exporter *i*. Formally:

$$SI^{ij}_{h} = 1 - \frac{1}{\mathrm{K}}\sum_{\mathrm{k}=1}^{\mathrm{K}}\left|d^{j}_{h,k} - id^{i}_{h,k}\right| \qquad (5)$$

where $d^{j}_{h,k}$ is a dummy that values 1 when the importer *j* applies at least one NTM of subcategory *k* (defined at 4-digits) (*k=1,..., K*), to product *h*, and 0 otherwise; $id^{i}_{h,k}$ accounts for the presence of NTMs of subcategory *k,* in product *h,* applied by exporter *i*; K is the number of NTM categories (at four digits) applied either by any of the two countries; and the vertical lines mean absolute value.

SI ranges from 0, when one country does not apply any measure on any subcategory while the other country applies measures in all possible subcategories; to 1, when both countries apply measures in all subcategories of NTMs. The closer the indicator SI is to 1, the closer is the regulatory pattern across both countries, as the higher is the number of NTMs subcategories with a coincidence in application, while the lower SI the more heterogeneous the NTM structure between trade partners is.

As the expression (5) is averaged over the total number of NTM categories (i.e. affecting imports of any sector *h* in importer *j*), the resulting figure for a particular route *ij* and sector *h* is the percentage (if multiplied by 100) of NTM categories where there is distance or divergence in the pattern of NTMs applied between *i* and *j*.

2. Regulatory Intensity Gap (RIG)

If instead of indicator variables like the dummies in (5) we use the frequency or number of measures, we get the Regulatory Intensity Gap (RIG):

$$RIG_h^{ij} = \frac{1}{K}\sum_{k=1}^{K} Nm_{h,k}^{j} - iNm_{h,k}^{i} \quad (6)$$

The Regulatory Intensity Gap (RIG) is the difference in the number of measures applied by the exporter and importer, for each product *h*, averaged over the full number of NTM categories. RIG is not bounded; a positive (negative) number indicates that the importer *j* imposes a higher (lower) number of measures than the exporter *i*, on average across categories.

3. Regulatory Overlap (RO)

The Regulatory Overlap (RO) measures the proportion of NTM categories (at 4-digit level) applied by the importer that are also applied by the exporter:

$$RO_h^{ij} = \frac{\sum_{k=1}^{K} d_{h,k}^{j} \times id_{h,k}^{i}}{\sum_{k=1}^{K_j} d_{h,k}^{j}} \quad (7)$$

The product of both dummies in the numerator will be either 0 when NTM type *k* is not shared by the importer *j* and exporter *i*, in sector *h*, and 1 otherwise. Adding up, the numerator is the number of NTM categories that both, importer and exporter, share. The denominator indicates the number of NTM categories applied by the importer *j* in sector *h*. The RO can vary between 0 and 1, from total lack of coincidence to perfect overlap. If the importer does not apply any NTM, the denominator is 0 and the formula is not defined. In this case, RO is replaced by 1, as the exporter does not need to face any extra regulation to update their products or processes in order to access markets (UNCTAD, 2017c-p.24).

Both indicators, Similarity Index and Overlap should move in the same direction, although they are not strictly the same. The Regulatory Overlap considers as the starting point the type of measures imposed by the importer, and then checks if the exporter applies them or not. In the Similarity Index, simply the fact of sharing a type of measure is considered, irrespectively if the exporter or the importer applies it. Therefore, differently from SI, the RO for a particular route and sector is not symmetric, as the number of different types of NTMs may differ between countries *i* and *j*.

As in the case of RD, the expression in (7) can be calculated for subtypes of NTMs, for instance, SPS or TBT, simply updating the indicators K and K_j.

4. NTMs description based on unilateral indicators

4.1. Overview for agri-food products

As a first step into the description of NTMs, we calculate, for each agri-food GTAP sector (19 sectors) and for the broad sectoral classification (Agriculture, Food and Non-Agri-Food) the proportion of HS6-digit lines affected at least by one NTM, that is, the Frequency Ratio as in (1.b). This is calculated for the full set of available countries (57). Then, we run the same calculation but differentiating the most relevant types of NTMs, Sanitary and Phytosanitary (SPS) measures (Chapter A), Technical Barriers to Trade (TBT) measures (Chapter B), Export measures (Chapter P), and the remaining types of measures aggregated (Chapters C, D, E, F) which we call "Non_ABP" measures (see Table 1). Results on Frequency ratios (FR), Regulatory Intensity (RI) and Coverage Ratio (CR) are presented in Table 6.

The first panel in Table 6 indicates the number of countries (within the 57 available) that apply NTMs. All countries apply measures in the broad sectors of agriculture and food. Digging more in detail, however, not all countries apply NTMs in CTL (cattle), PFB (plants and fibres), WHT (wheat), WOL (wool) and SGR (processed sugar), although the majority does. When analyzing by

type of NTM measure, in general, there are fewer countries that apply those specific types of measures, in particular, in categories different from SPS.

The **Frequency Ratio (FR)** in the second panel in Table 6 reveals that at least one NTM affects 96% of the HS6 lines, both in Agriculture, and in Food products. Interestingly, this percentage drops substantially in non-agri-food products (53%). Therefore, the incidence of NTMs is substantially higher in the agri-food sector. This differentiation is even sharper when splitting by NTM category. Thus, SPS measures affect 89% and 91% of the agriculture and food products, respectively, and 10% of non-agri-food. The incidence of TBT is lower than SPS in both, agri-food and non-agri-food products, affecting 67%, 76% and 38% of agri, food, and non-agri-food product lines. By GTAP aggregation, with the exception of PFB, and WOL, all the agri-food sectors present frequency ratios over 90%. These percentages are lower when splitting by NTM category, but still maintaining the same pattern: SPS measures affect more agri-food products, than any other type of measure, with the exception of B_T, where we note a marginal prevalence of TBT measures (i.e. 77% vs 76%).

Moving to **Regulatory Intensity**, on average, agriculture HS6 lines bear 16 measures, the majority of which, around 9, pertain to SPS; food HS6 lines bear an average of 18 measures, of which 10 are SPS; and non-agri-food an average of 4 measures.

The **Coverage Ratio (CR)** in the fourth panel in Table 6 reveals that at least one NTM affects 95% and 98% of agricultural and food trade, respectively. The ratio drops to 67% in non-agri-food products. In general, CR is at least as large as FR. Splitting by NTM category, SPS measures affect 88% and 90% of the agriculture and food trade, respectively, and only 12% of non-agri-food products. The incidence of TBT is lower than SPS in agri-food sectors and clearly higher in non-agri-food products, affecting 69%, 80% and 54% of agri, food, and non-agri-food product lines. By GTAP aggregation, most of the agri-food sectors present frequency ratios over 90%. Exceptions are PFB and WOL, where around 75% of its trade is covered by NTMs. These percentages are lower when splitting by NTM category, and agri-food trade is more affected by SPS than TBT measures.

Table 6: Frequency Index, Regulatory Intensity and Coverage Ratio, per GTAP sector and NTM broad categories [1;2;3]

	Number of countries that apply NTMs					Frequency Ratio: % of HS6 lines traded affected					Regulatory Intensity: Number of measures					Coverage ratio : % of trade value covered by NTMs				
GTAP	Any	A:SPS	B:TBT	P	NonABP	Any	A:SPS	B:TBT	P	NonABP	Any	A:SPS	B:TBT	P	NonABP	Any	A:SPS	B:TBT	P	NonABP
Agriculture	***57***	***57***	***55***	***50***	***55***	***0.96***	***0.89***	***0.67***	***0.63***	***0.56***	***16.35***	***9.22***	***3.32***	***2.47***	***1.25***	***0.95***	***0.88***	***0.69***	***0.62***	***0.62***
C_B	57	54	39	34	32	1.00	1.00	0.82	0.61	0.55	18.08	10.77	3.72	2.33	1.21	1.00	1.00	0.82	0.61	0.55
CTL	56	51	34	48	36	0.96	0.85	0.51	0.75	0.53	13.32	6.44	1.72	3.90	1.21	0.96	0.85	0.55	0.75	0.52
GRO	55	52	40	35	46	0.96	0.87	0.63	0.58	0.58	14.37	8.08	2.95	2.11	1.17	0.97	0.89	0.68	0.57	0.80
OAP	57	57	53	50	46	0.90	0.77	0.56	0.64	0.47	12.09	5.96	2.31	2.70	1.06	0.89	0.79	0.55	0.64	0.43
OCR	57	55	55	48	51	0.95	0.88	0.67	0.60	0.55	15.28	8.40	3.39	2.25	1.17	0.93	0.85	0.67	0.57	0.56
OSD	57	55	48	39	39	0.99	0.94	0.75	0.60	0.58	18.35	10.14	4.25	2.52	1.35	0.99	0.92	0.78	0.61	0.57
PDR	57	55	48	38	44	1.00	0.98	0.83	0.69	0.73	22.61	12.93	4.66	2.82	2.00	1.00	0.98	0.82	0.69	0.76
PFB	46	33	29	31	28	0.77	0.49	0.39	0.48	0.41	5.57	2.12	1.15	1.34	0.89	0.75	0.50	0.40	0.52	0.44
V_F	57	55	47	48	48	0.98	0.96	0.71	0.64	0.61	20.58	12.45	4.04	2.51	1.44	0.98	0.96	0.73	0.66	0.62
WHT	53	49	36	34	36	0.94	0.89	0.66	0.58	0.49	15.72	9.31	2.97	2.10	1.25	0.93	0.90	0.68	0.57	0.46
WOL	43	32	30	32	24	0.75	0.52	0.44	0.50	0.35	5.57	1.79	1.51	1.39	0.81	0.77	0.56	0.44	0.49	0.36
Food	***57***	***57***	***56***	***52***	***56***	***0.96***	***0.91***	***0.76***	***0.55***	***0.52***	***18.26***	***10.23***	***4.18***	***2.46***	***1.28***	***0.98***	***0.90***	***0.80***	***0.55***	***0.58***
B_T	57	55	56	40	55	0.95	0.76	0.77	0.44	0.68	12.95	5.52	4.27	1.32	1.64	0.94	0.75	0.80	0.44	0.66
CMT	57	57	45	41	38	0.97	0.95	0.76	0.67	0.51	21.76	12.39	4.24	3.68	1.36	0.98	0.95	0.76	0.71	0.55
MIL	57	56	51	39	42	0.97	0.94	0.78	0.60	0.53	22.54	13.25	5.19	2.54	1.42	0.98	0.96	0.81	0.63	0.55
OFD	57	57	55	52	54	0.96	0.93	0.76	0.55	0.50	18.15	10.25	4.18	2.40	1.21	0.98	0.95	0.78	0.51	0.51
OMT	57	57	52	48	46	0.98	0.96	0.77	0.64	0.51	21.79	12.73	4.25	3.34	1.37	0.97	0.95	0.73	0.64	0.52
PCR	57	55	46	38	41	0.98	0.96	0.80	0.67	0.71	21.29	12.33	4.25	2.72	1.79	0.98	0.96	0.81	0.67	0.73
SGR	56	52	46	35	42	0.94	0.84	0.72	0.49	0.59	14.19	7.30	3.65	1.63	1.51	0.96	0.84	0.75	0.51	0.71
VOL	57	55	50	46	42	0.93	0.85	0.71	0.50	0.50	14.45	7.82	3.50	1.87	1.17	0.94	0.84	0.72	0.49	0.54
NonAgriFood	**57**	**57**	**57**	**46**	**56**	***0.53***	***0.10***	***0.38***	***0.22***	***0.28***	**4.53**	**0.47**	**2.56**	**0.68**	**0.75**	***0.67***	***0.12***	***0.54***	***0.27***	***0.41***

Source: Own calculations based on UNCTAD NTMs database

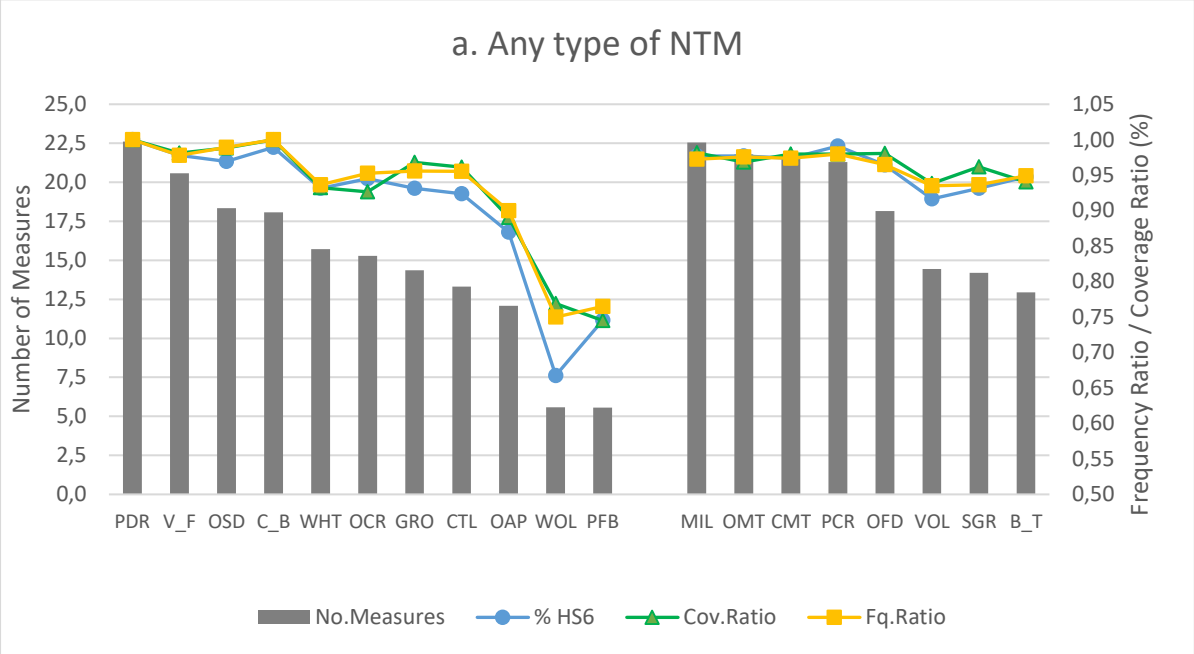
Notes: [1]Only non-generic measures are computed (i.e. excluding those imposed by a country to all its products). [2]Average per HS 6-digit line/reporter within each GTAP or broad agri-food sectors. [3] P: measures that apply to exports; NonABP : Measures other than A, B or P

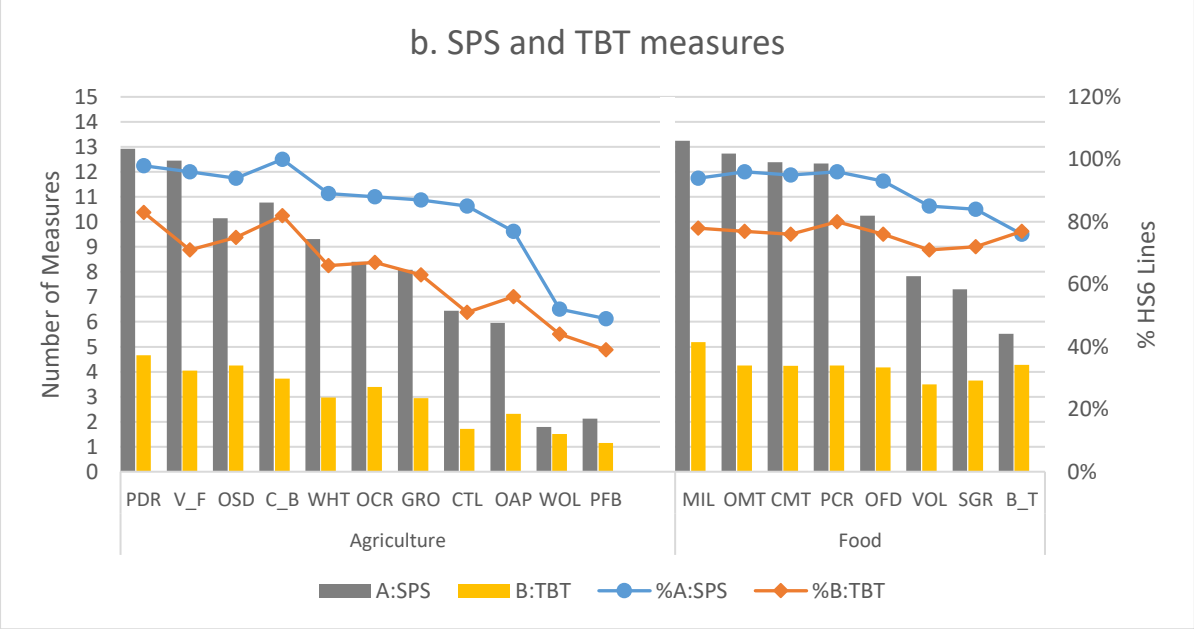
Figure 3.a plots the Frequency Ratio calculated both, as in expression (1.a) over the number of traded lines (purple line) and (1.b) (blue line), Coverage Ratio (green line) and Regulatory Intensity (red bar) by GTAP sector. In general, we note that all unilateral indicators are quite in line, differing slightly from one another. Dairy (MIL), meats (OMT and CMT) and rice (PDR and PCR) stand out as the most regulated in the sense that bear the maximum number of measures (around 21-22 per HS6 line), which is also shown from the high FR and CR (around 97-100%). WOL and PFB, on the other hand, are amongst the least regulated (around 5 measures) with a FR and CR of 75-77%. Beverages (B_T), sugar (SGR) and vegetable oils (VOL) hold an intermediate position (around 12-13 measures) although we calculate high FR and CR (around 92-96%). Figure 3.b plots frequency ratios (calculated as percentage of lines affected by NTMs) per NTM category. Dairy (MIL), Meat (OMT) and rice (PDR) are the most regulated, an average of 13 SPS and 5 TBT measures for HS6 line).

Figure A.1 in the Appendix shows the Regulatory Intensity or total number of measures applied per HS 2-digit and 1-digit NTM categories.

Figure 4 shows the **Regulatory Scope** per GTAP sector, defined as the number of 4-digit NTM subcategories that affect on average each HS6 line. As mentioned before (see Section 1) the pool of NTM categories for all sectors include 173 different categories at 4-digit, and 14 at 1-digit, while these figures fall to 154 and 6, at 4- and 1-digit NTM categories respectively, in agri-food sectors. Rice, meats and dairy products stand out as the most regulated. On average, these sectors are regulated with 13 different 4-digit NTM subcategories (excluding those of type P), from which around 8 belong to SPS and 3 to TBT. Across sectors, the number of different types or categories of NTMs applied is the largest for SPS (with the exception of WOL and PFB, where other types different from SPS and TBT have the largest weight). Figure 4 also shows that in general food products are more regulated (i.e. from a larger variety of NTMs types) than agriculture products.

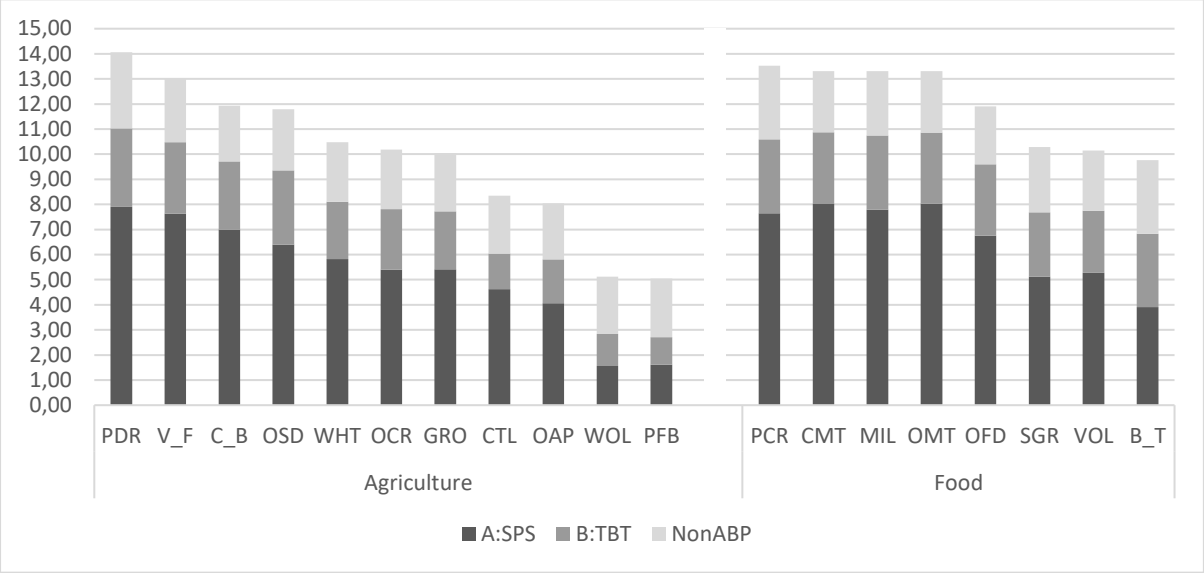
Figure 3: Frequency Ratio (% of HS 6-lines) and Regulatory Intensity (Number of measures)





Source: Own elaboration based on UNCTAD NTMs database.
Notes: Average number of measures per HS6 line within each GTAP sector. Panel (a) calculates the frequency ratio using both, expression (1.a.) (Fq.Ratio) and (1.b) (%HS6); Percentages in panel (b) calculated using (1.a.).

Figure 4: Regulatory Scope per GTAP sector (number of 4-digit NTMs subcategories)



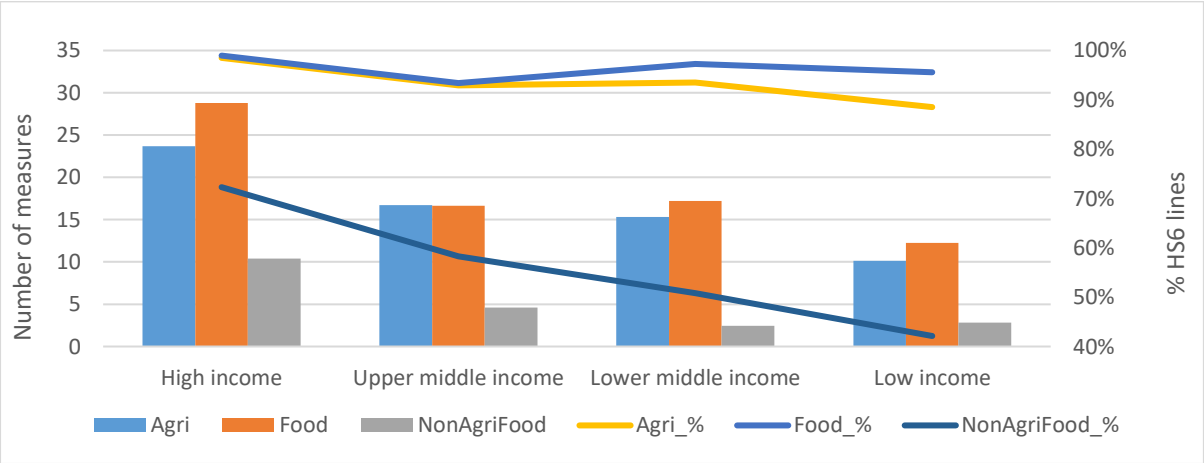
Source: Own elaboration based on UNCTAD NTMs database.
Note: Average per HS6 digit line

4.2. Overview by region

So far, we have presented some global indicators for the 57 countries. Next, we conduct the equivalent calculations but for specific countries or regions.

Thus, as a first inquiry, Figure 5 presents the Frequency Ratio and Regulatory Intensity by income group and for the three broad sectors defined: agriculture, food and non-agri-food. Figure 5 shows the clear trend that regulation increases with income. Thus, both, the proportion of HS6 lines affected by NTMs and the average number of measures applied per HS6 line, increases with economic development, and this same trend is observed for each of the broad sectors. This aspect raises concerns in terms of market access for less developed economies to more developed destination countries (i.e. North-South trade) but also in terms of food safety for lower income countries engaged in South-South trade.

Figure 5: Frequency Ratio and Regulatory Intensity of NTMs by income group and broad sectors

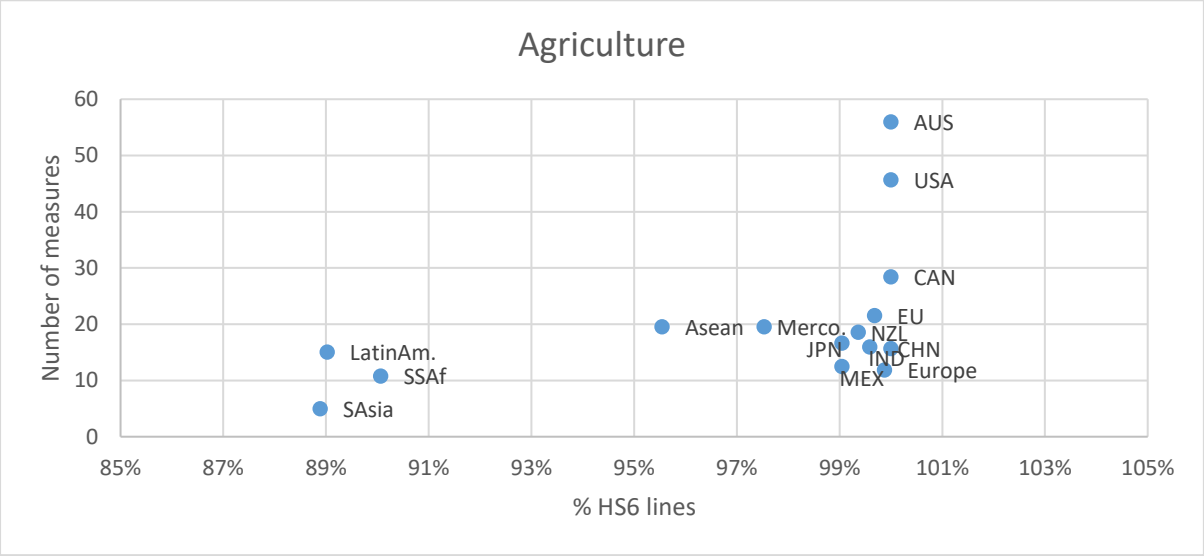


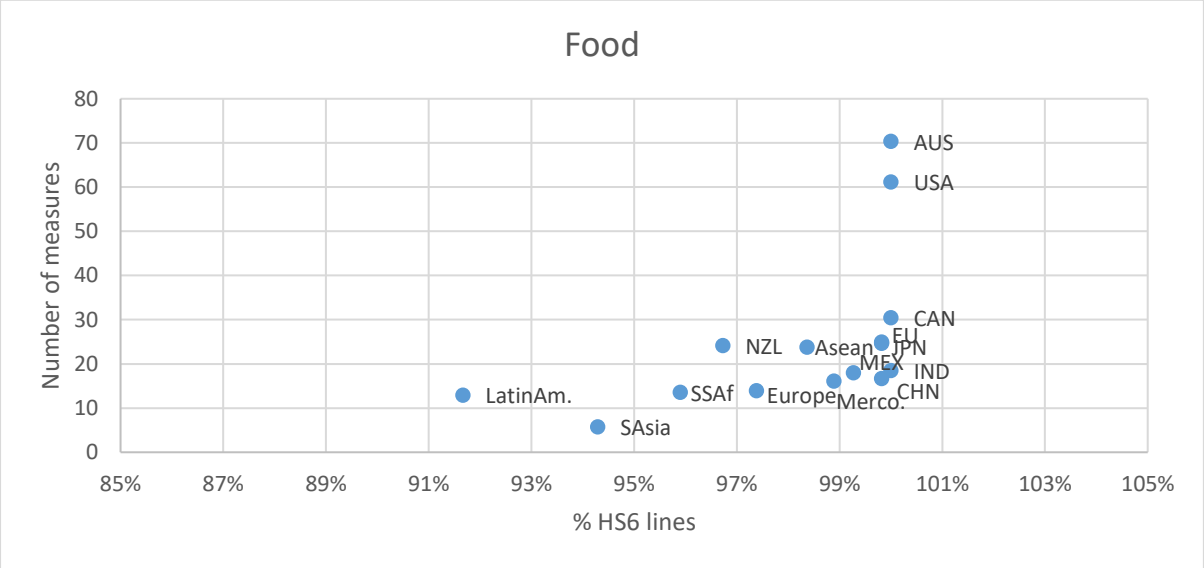
Source: Own elaboration based on UNCTAD NTMs Database. Notes: The number of measures and proportion of affected HS 6-digit lines are averages over HS 6-digit and countries in the sectoral and regional aggregation

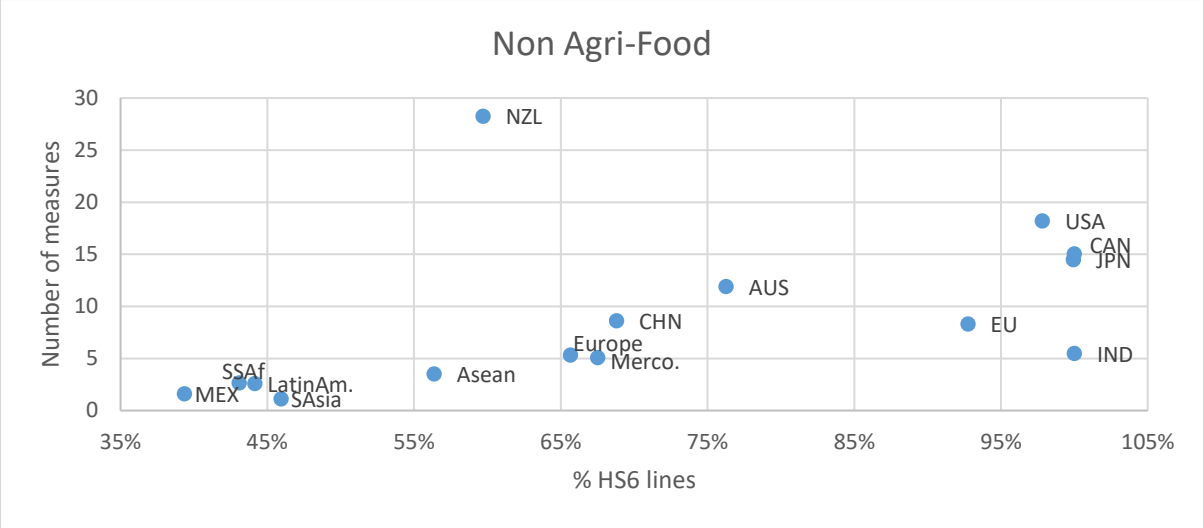
Based on the ongoing trade negotiations reported in section 2.2, we have singled out an array of countries and regions, and aggregated the rest of countries as shown in Table 5.

Figure 6 shows the selected regions plotted onto the space defined by the number of measures or Regulatory Intensity (RI) and the percentage of affected lines or Frequency Ratio (FR), in each of the broad sectors (agriculture, food and non-agri-food). As shown with the 57-country average figures, there is a positive trend that relates the number of sectors affected with the average number of measures. It is interesting to note that high income countries stand out alone on the top and right quadrants (Australia, USA, and Canada in particular), while relatively less developed economies, like the rest of Latin America and Caribbean, Sub-Saharan Africa and South Asia are located on the lower left corner, and this distribution, with nuances, repeats for the three aggregated sectors. Some regions of interest like Asean and Mercosur are quite close to the EU, in particular in terms of RI in agriculture. The variability of FR across selected regions is much larger in non agri-food products than in agri-food, and the opposite occurs in terms of RI.

Figure 6: Proportion of HS 6-digit lines affected by NTMs and number of measures, by selected regions



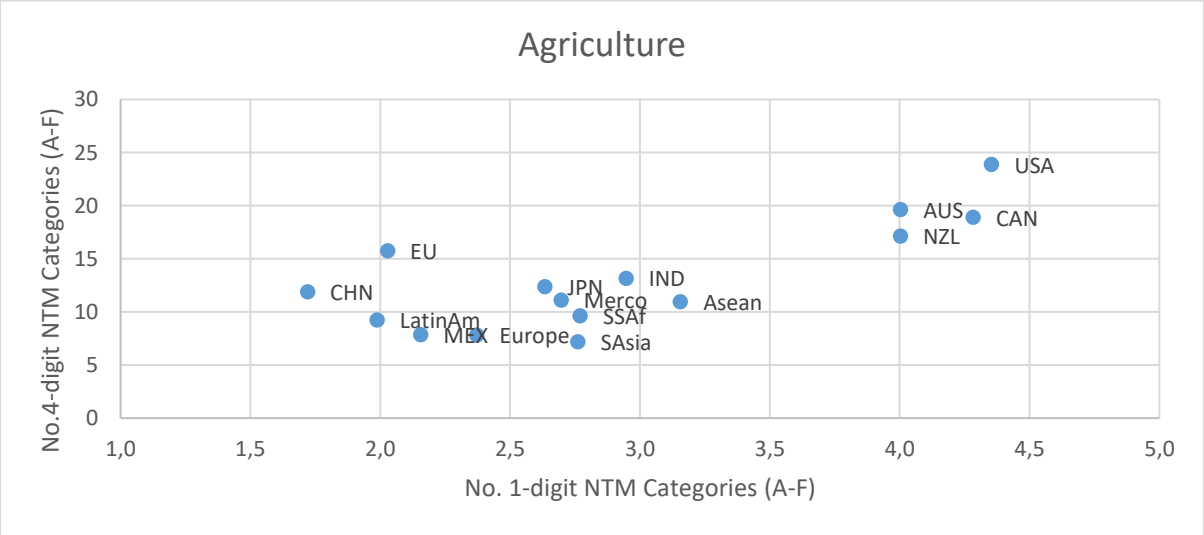


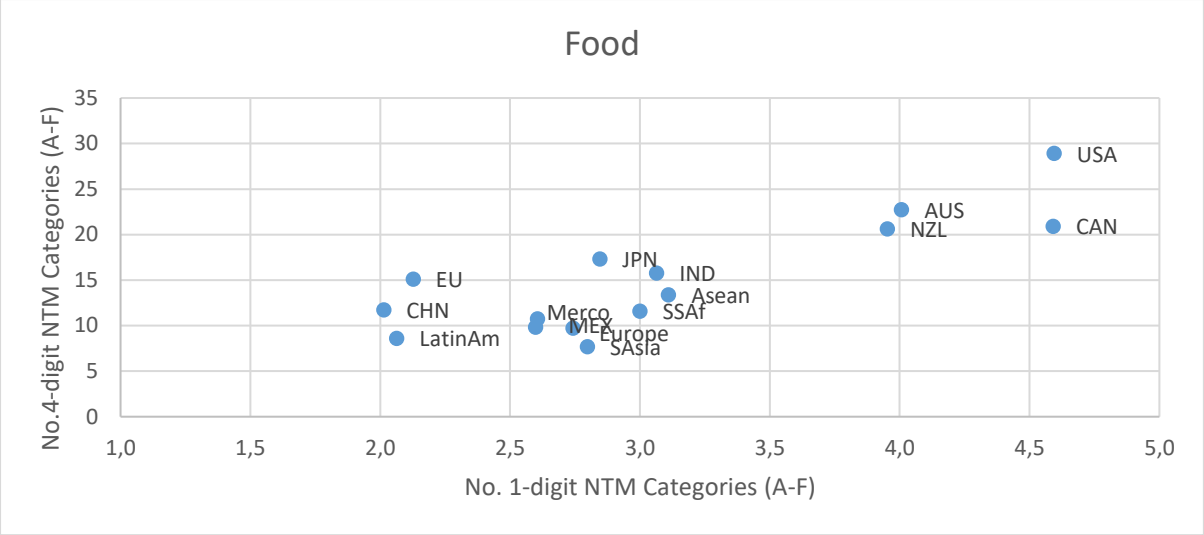


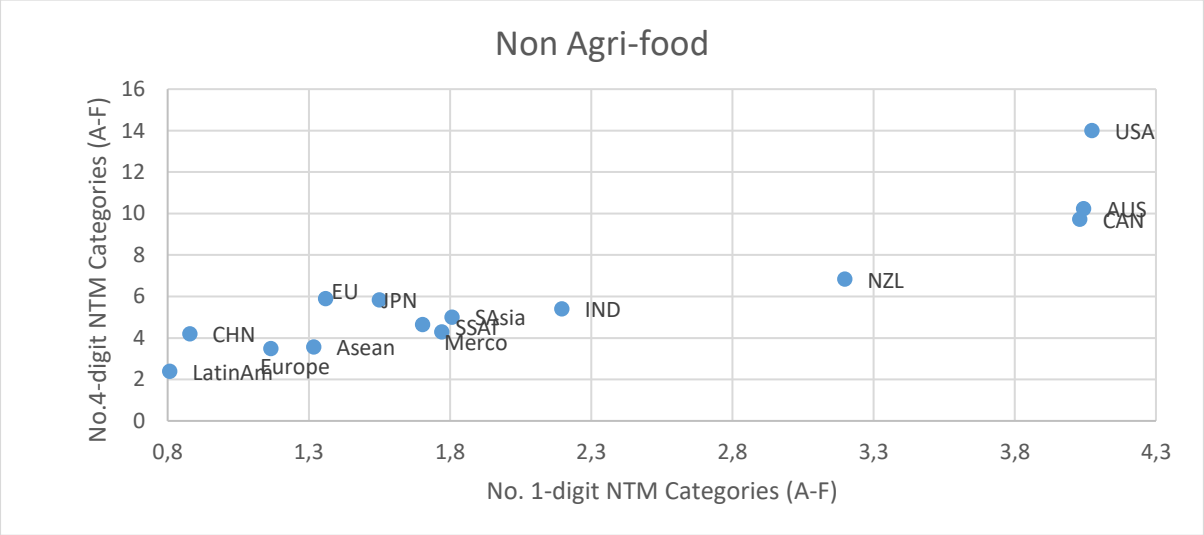
Source: Own elaboration based on UNCTAD NTMs Database.

Figure 7 plots the regions in Table 5 in the space defined by the Regulatory Scope calculated at 4- and 1-digit NTM categories (excluding those that apply to exports-P), and in the three broad sectors: agriculture, food and non-agri-food. Developed countries as USA, Canada and Australia, stand out as the regions with larger regulatory scope in all three sectors. That is, at 1-digit they apply measures on around 4.5 categories, on average, and at 4-digit, around 20-25 NTM categories. The EU shows a closer scope to other OECD countries in 4-digit axis, with an average of 15 4-digit NTM categories in agri-food sectors, while the range of 1-digit NTM categories is lower, (around 1.5-2 categories versus 4-4.5 in other high income countries). In that sense, the EU is located closer to China and Latin America in agriculture and food.

Figure 7: Regulatory Scope or number of different NTM subcategories







Source: Own elaboration based on UNCTAD NTMs Database.

5. NTMs description based on bilateral indicators

In this section we apply the bilateral indicators defined in equations 5-7. With 57 countries, we can build up bilateral indicators for 57 × 56 = 3192 pairs of countries. Even restricting ourselves to the regions in Table 5, we would still have 15 × 14 = 210 pairs of regions. Thus, we show the results concerning the EU, in relation to the rest of individual countries or the regional conglomerates in Table 5. Appendix 3 presents the average values of the three bilateral indicators, per GTAP sector and region.

5.1. Similarity Index

Figure 8 shows the bilateral Similarity Index in GTAP agri-food sectors, between EU and non-EU countries. Calculations are based on Equation (5) and are averaged over HS 6-digit sectors. Food sectors show in general a bigger similarity than agriculture. The lowest similarity among agri-food sectors is found in plants and fibers (PFB), wool (WOL) and sugar (SGR). A similarity index over 20% is found in three agricultural and food sectors, with a maximum of 24% in meats (CMT and OMT), followed by fruits and vegetables (V_F, 23%), sugar beet (22%), paddy rice (PDR) and dairy (MIL) (21%). These average percentages are relatively low, suggesting a low degree of similarity between the EU regulations and non-EU trade partners.

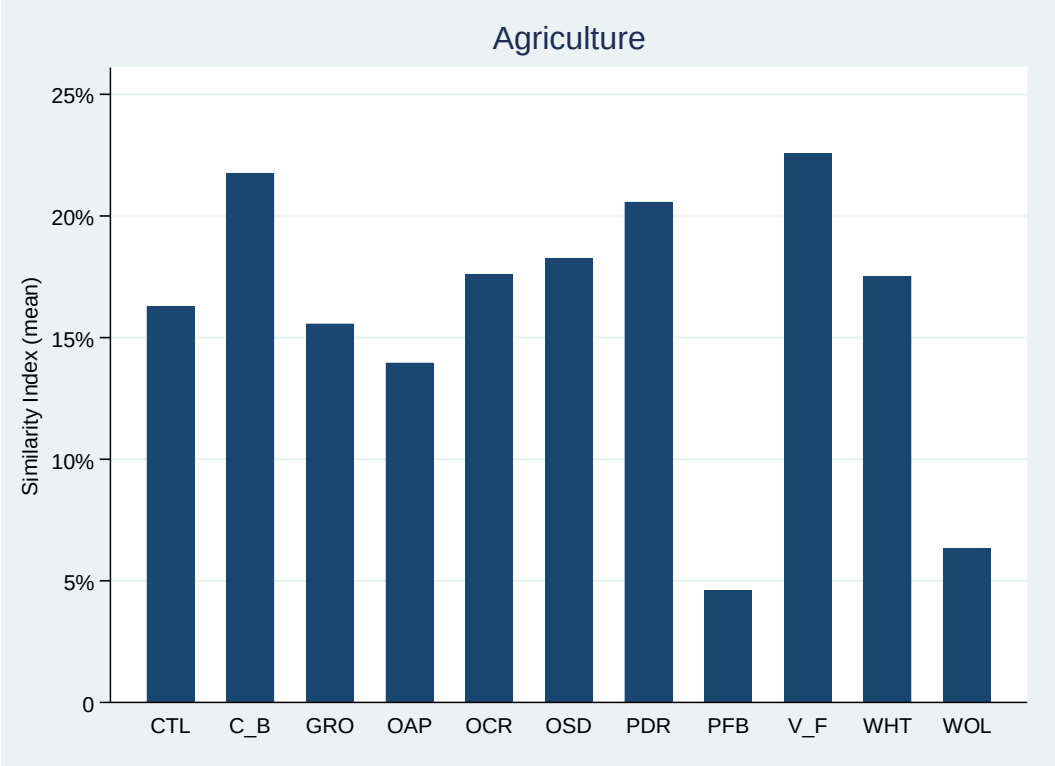
Figure 9 shows the Regulatory similarity between the EU and selected regions, for the broad Agriculture and Food sectors. The similarity with more developed countries is bigger. Thus, both in agriculture and food sectors, on average, the similarity index is 33-36% with Japan (in agriculture and food, respectively), around 30% with USA, Australia and New Zealand. Mercosur or Asean countries, interesting for the ongoing trade negotiations, occupy an intermediate position, whilst China stands out amongst the closest regions to the EU in terms of Regulatory Distance (26% in agriculture and 28% in food). The lowest similarity occurs with South Asia and Sub-Saharan countries (around 15% and 7%, respectively). These figures, however, are very global as refer to the ensemble of sectors and types of NTMs. Specific values for regions and sectors are presented in Table A.2 in Appendix 3.

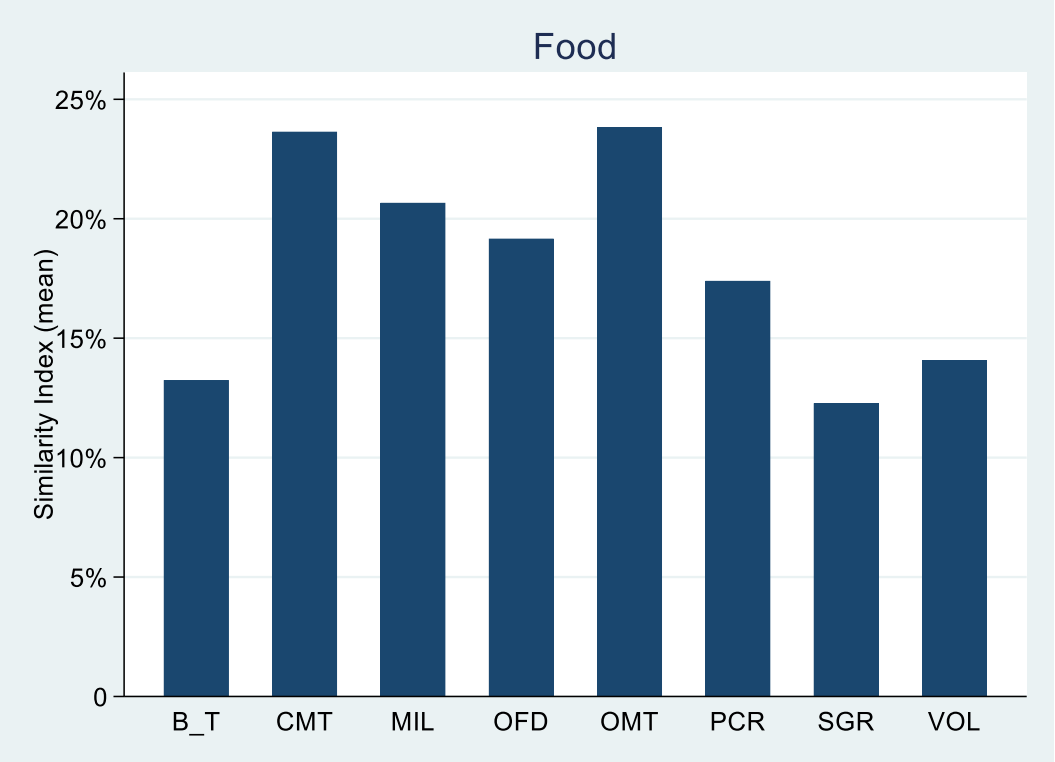
A more detailed picture can be obtained in Figure 10 and Figure 11, where the Regulatory Distance between the EU and the rest of partners is calculated, for SPS, TBT and other NTMs measures, for each agri-food sector (Figure 10) and for each region (Figure 11). The heterogeneity across sectors observed previously in Figure 8 derives mainly from the heterogeneous pattern of regulations in SPS measures (Figure 10). Although there is not strictly a common pattern across sectors, in general, the similarity is the highest for measures other than SPS/TBT, followed by TBT, and the lowest, SPS. Nevertheless, the higher similarity indexes found for non SPS/TBT is derived mainly from the absence of regulations (at least recorded in the NTM database) rather than a proper coincidence in the rules applied.

Figure 11 illustrates the similarity index with specific regions and by NTM category. Interestingly, there are differences depending on the type of measure. Thus, with some regions there is a clear superior similarity with respect to SPS measures (Australia, Canada, Japan, USA, New Zealand), in both agriculture and food industries.

Note that the Similarity Index only informs on the fact that the EU is similar to or differs from non-EU countries in the range of categories of NTMs applied, but does not inform if it is the EU or other partners the ones that apply more or less different types of regulations. This is seen with the Regulatory Intensity Gap in the next section.

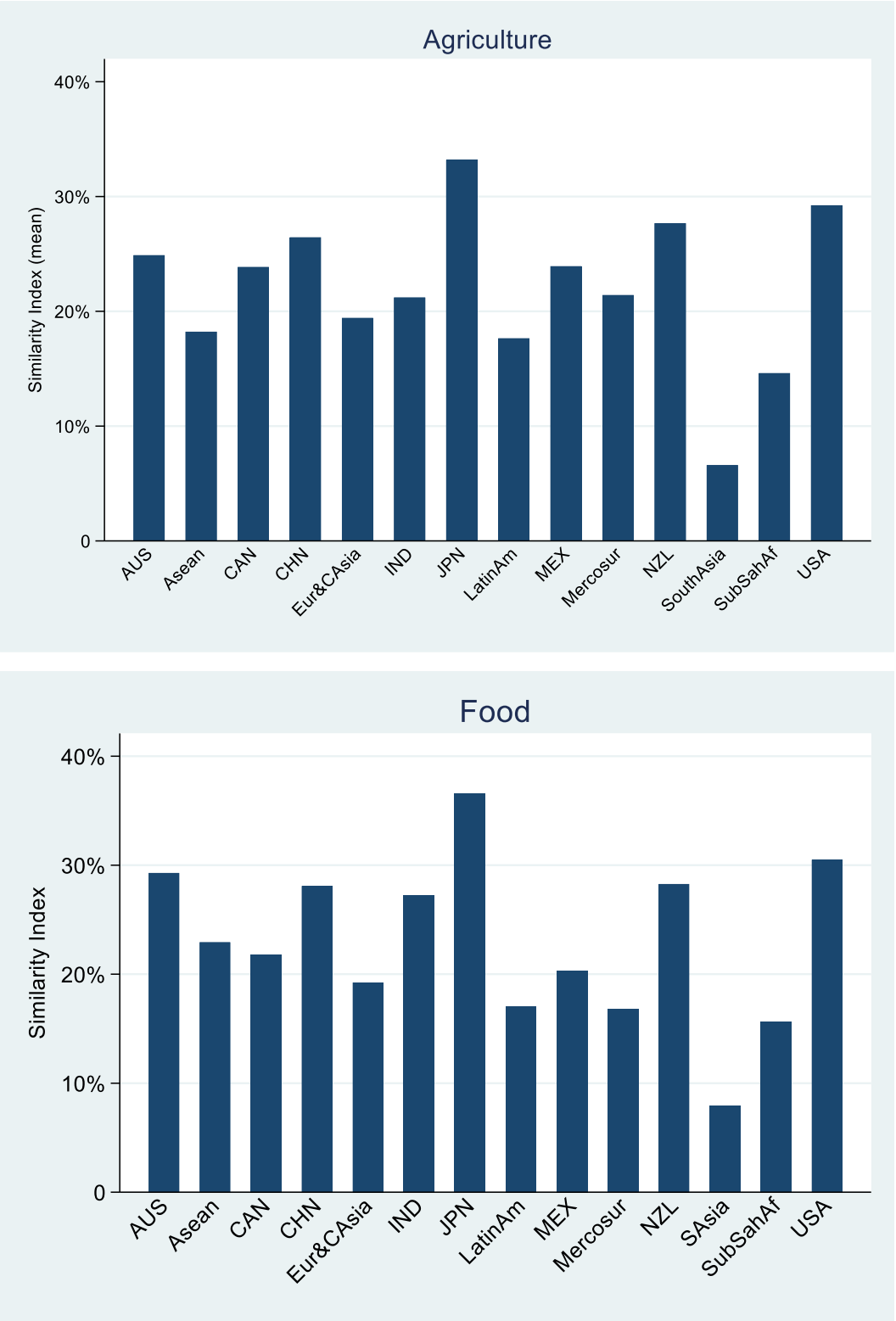
Figure 8: Regulatory Similarity Index in Agri-food, between the EU and non-EU countries, by GTAP sector





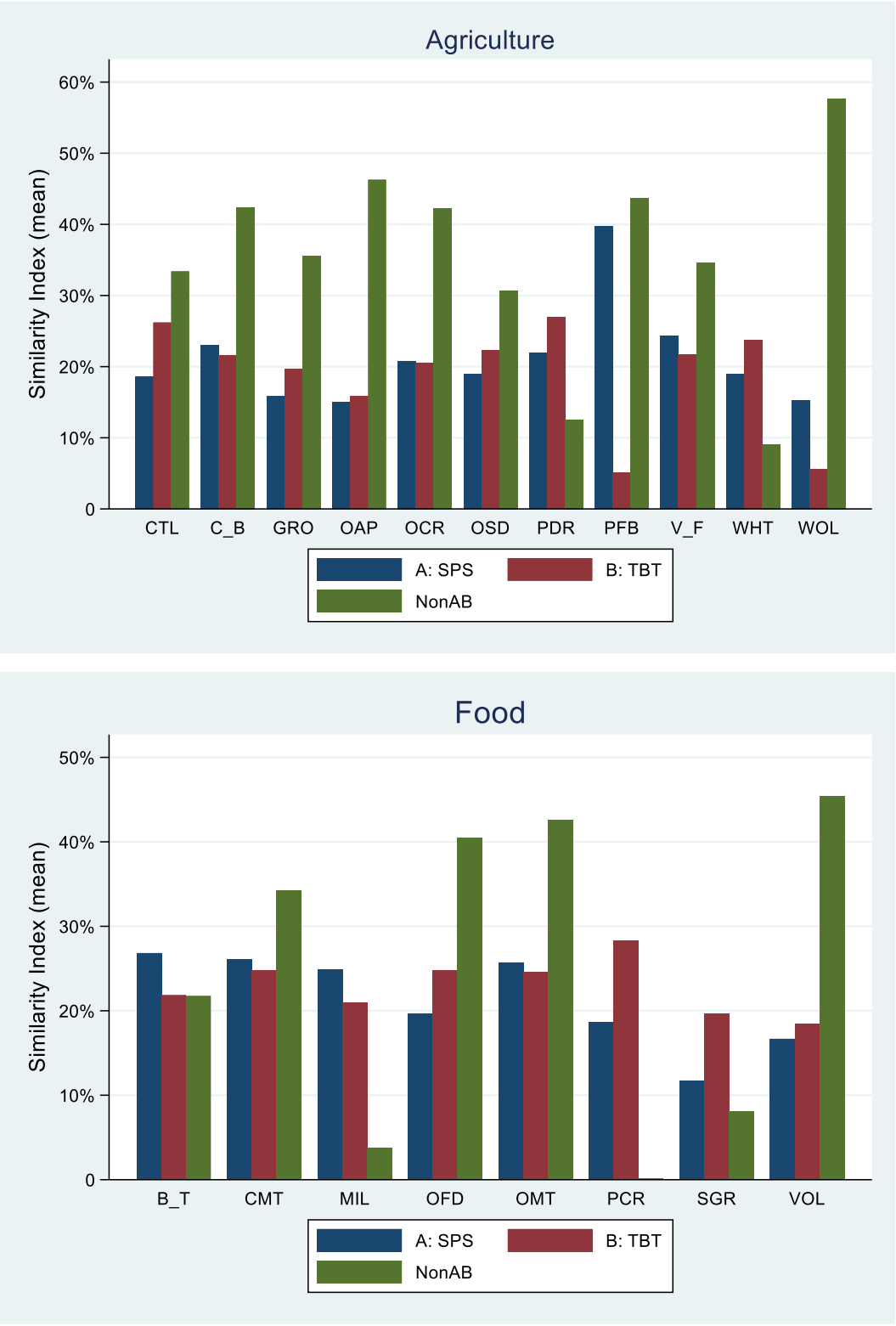
Source: Own elaboration based on UNCTAD NTMs Database.
Notes: averages over HS6 lines in each GTAP sector

Figure 9: Regulatory Similarity Index in Agri-food, between the EU and selected regions



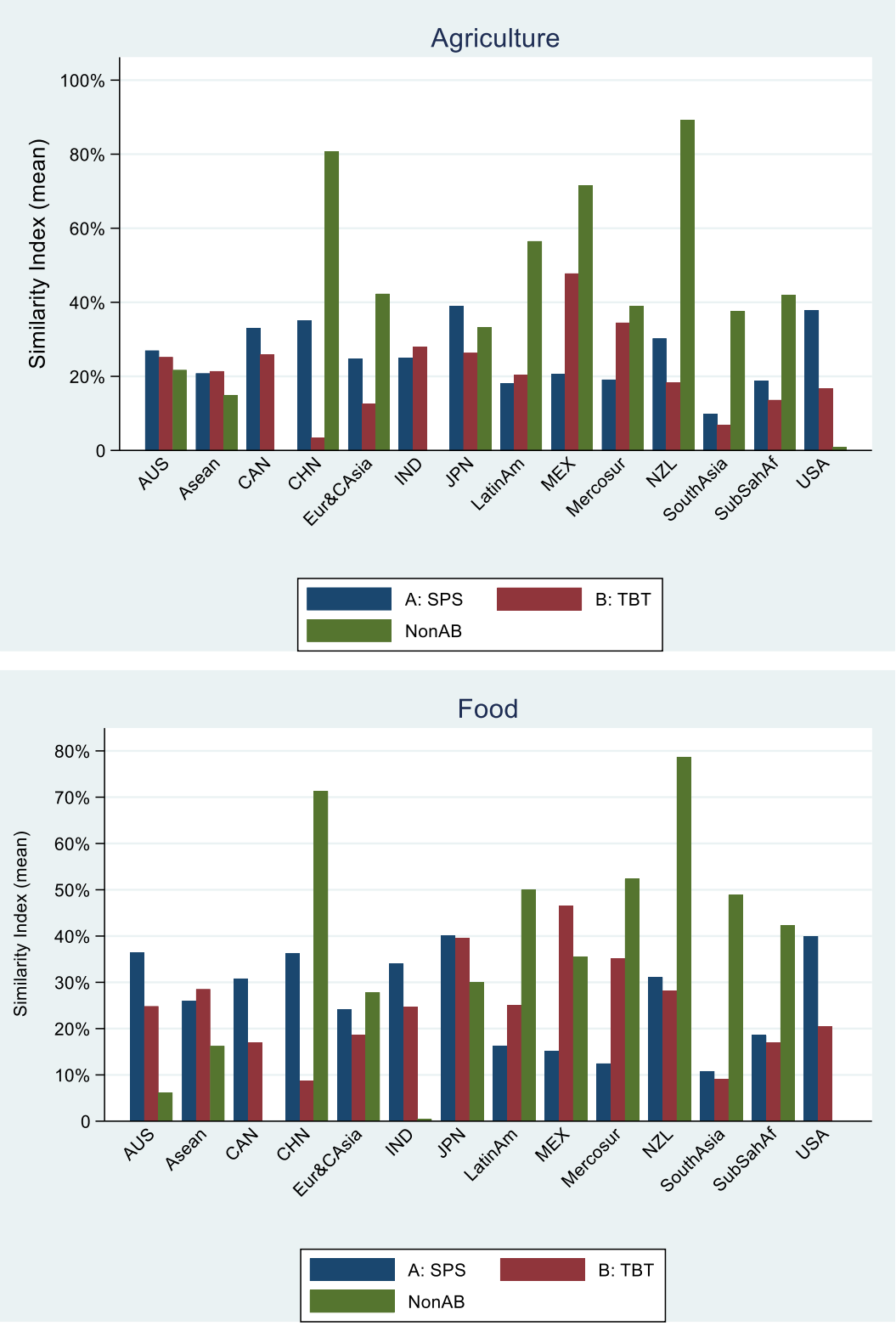
Source: Own elaboration based on UNCTAD NTMs Database.
Notes: averages over HS6 lines

Figure 10: Regulatory Similarity Index in Agri-food, between the EU and non-EU countries, by NTM Category



Source: Own elaboration based on UNCTAD NTMs Database.

Figure 11: Regulatory Similarity Index in agri-food, between the EU and selected regions, by NTM category



Source: Own elaboration based on UNCTAD NTMs Database.

5.2. Regulatory Intensity Gap

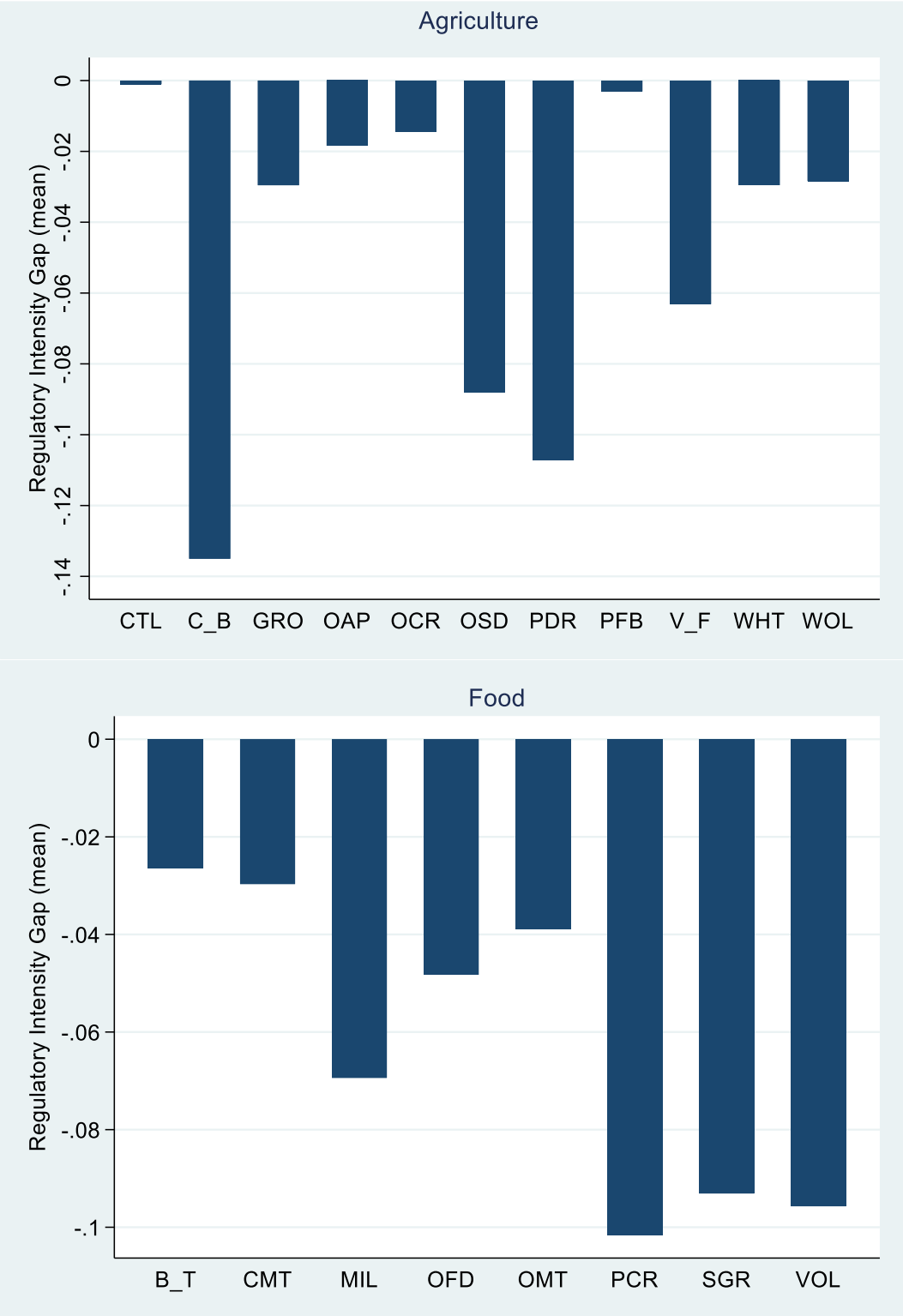
In contrast with the Regulatory Distance indicator, RIG, calculated with equation (6), indicates in which direction there is more regulation. That is, a positive number implies that the importer applies a higher number of measures than the exporter, on average, across NTM categories, and

a negative number implies the opposite. Figure 12 presents the average RIG between the EU as exporter and each possible partner in the sample, and per HS 6-digit line within each GTAP sector. In every single sector, the RIG shows that the number of measures imposed by the EU is higher, on average, than in other partners. We note the highest gap in unprocessed and processed rice (PDR, PCR) and sugar (C_B, SGR), as well as vegetable oils (VOL). Dairy (MIL), on the other hand, shows an intermediate position across sectors.

Nevertheless, this is a very global figure and additional insights are obtained by comparing across regions. That is, the average RIG now is calculated for the broad sectors of agriculture and food, between the EU as exporter and the partners within each of the selected regions. Results in Figure 13 show bigger positive gaps (i.e. more regulation than the EU) with Australia, Canada and USA, although the structure or range of NTM categories was found as relatively closer than other countries (as indicated with the Similarity Index in Figure 9). The remaining regions, however, show negative RIGs, indicating that these countries impose a lower number of measures than the EU. On the other hand, there seems to be more homogeneity in the number of measures with Japan and New Zealand, in the food sector, and India and Mercosur in agriculture, and less with South Asia or Sub Saharan Africa in both, agriculture and food (i.e. on average, the EU applies a higher number of measures).

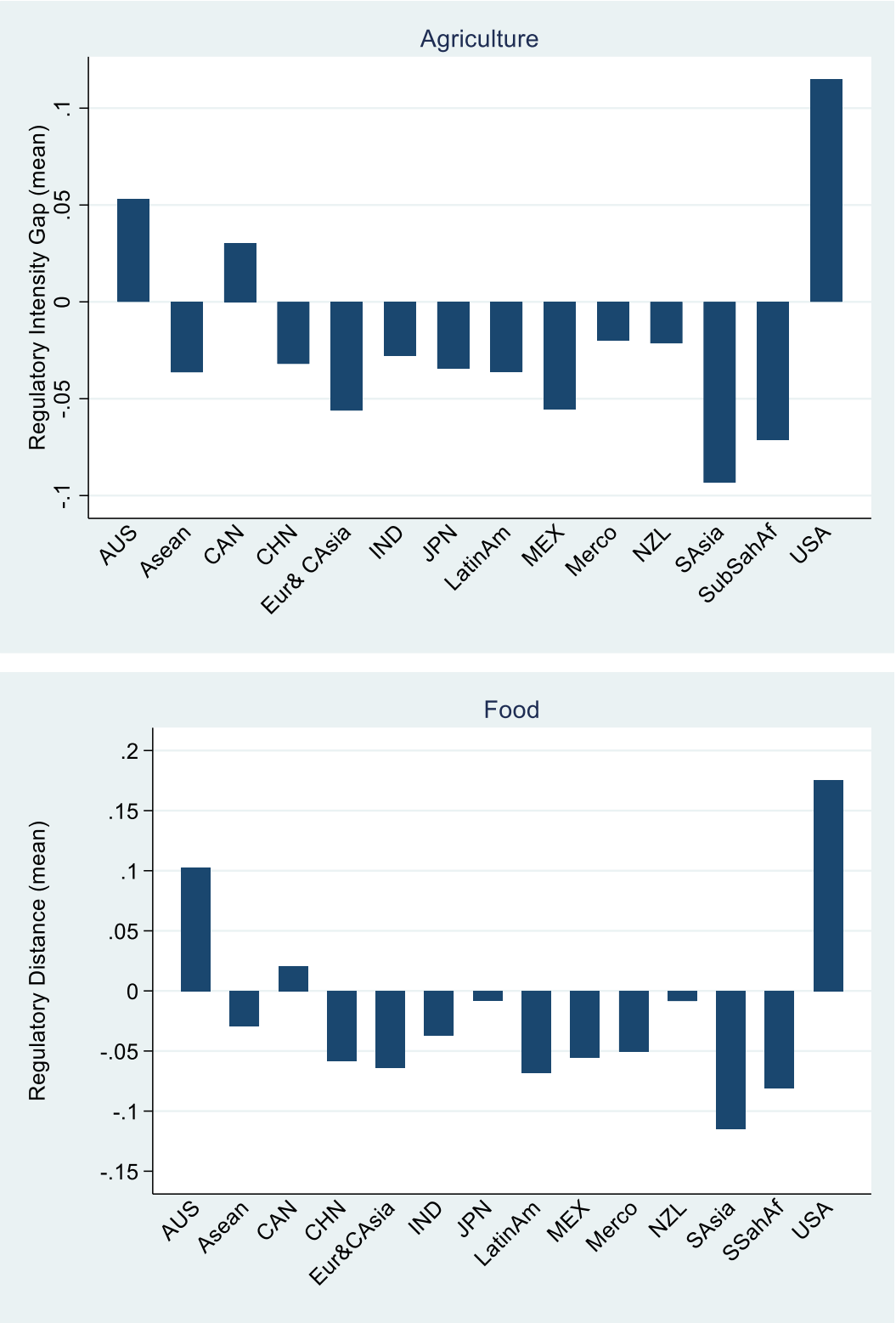
Differentiating by NTM category, there are some nuances across regions. Figure 14 reveals that the negative RIG obtained over all NTM categories with some regions, turns positive in TBT (with Mercosur, in both agriculture and food) and other NTMs than SPS/TBT, with every single region. Also, the overall positive RIG with Australia and Canada turns into negative (i.e. the EU more restrictive) for SPS measures in the agricultural sector, whereas in the food sector this particular change is noticed only for Canada. In other words, while the EU tends to apply more SPS measures, its partner regions tend to use more intensively Non SPS-TBT measures, with the exception for USA, which presents a higher RIG in the three NTMs split.

Figure 12: Regulatory Intensity Gap (RIG) in agri-food, between the EU and non-EU countries, by GTAP sector.



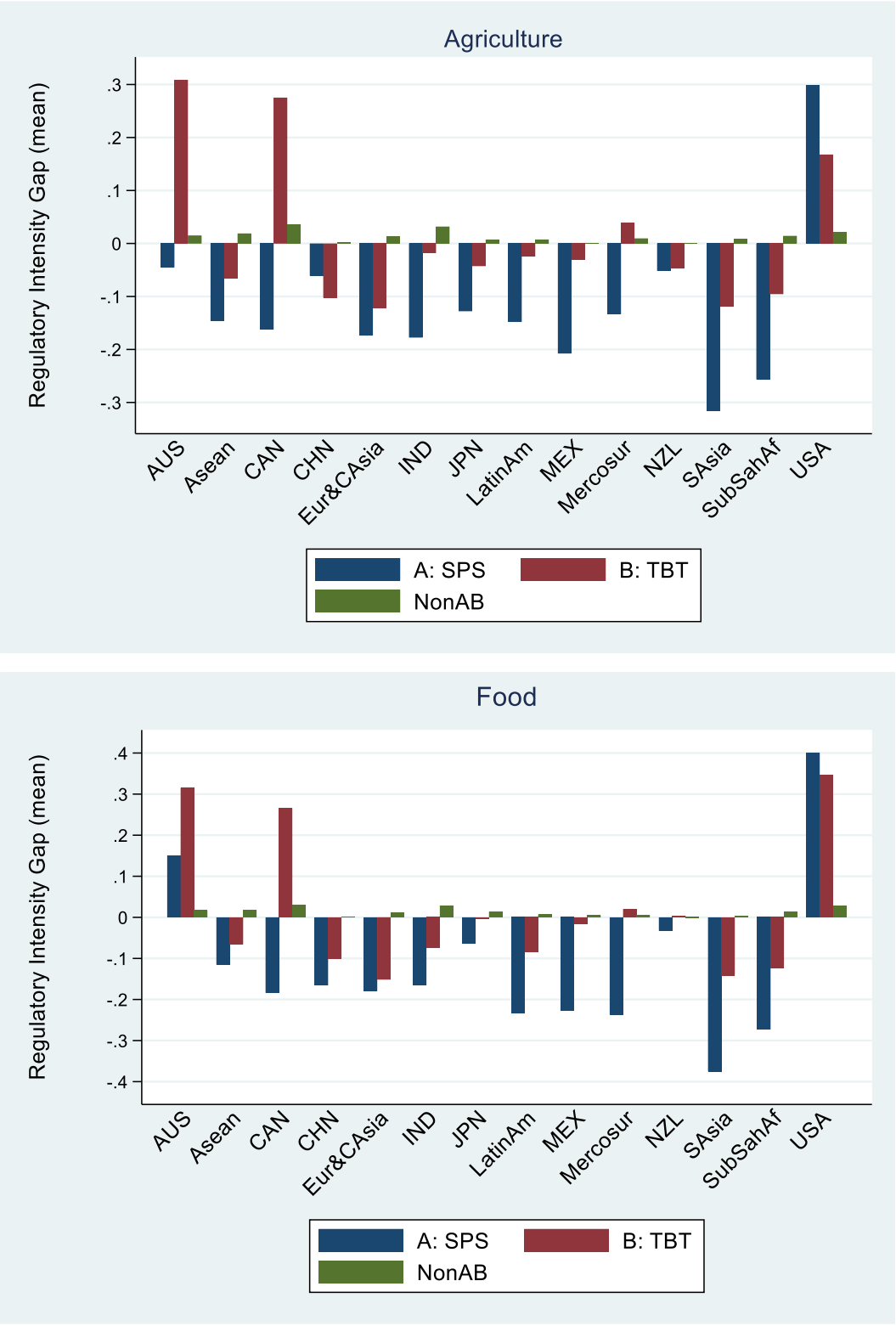
Source: Own elaboration based on UNCTAD NTMs Database.

Figure 13: Regulatory Intensity Gap (RIG) in agri-food, between the EU and selected regions



Source: Own elaboration based on UNCTAD NTMs Database.
Notes: Mean of RIG over HS6 sectors. A positive (negative) number indicates that the region imposes more (less) NTMs than the EU.

Figure 14: Regulatory Intensity Gap (RIG) in agri-food, between the EU and selected regions, by NTM category



Source: Own elaboration based on UNCTAD NTMs Database.
Notes: Mean of RIG over HS6 sectors and countries in the selected region. A positive (negative) number indicates that the region imposes more (less) NTMs than the EU.

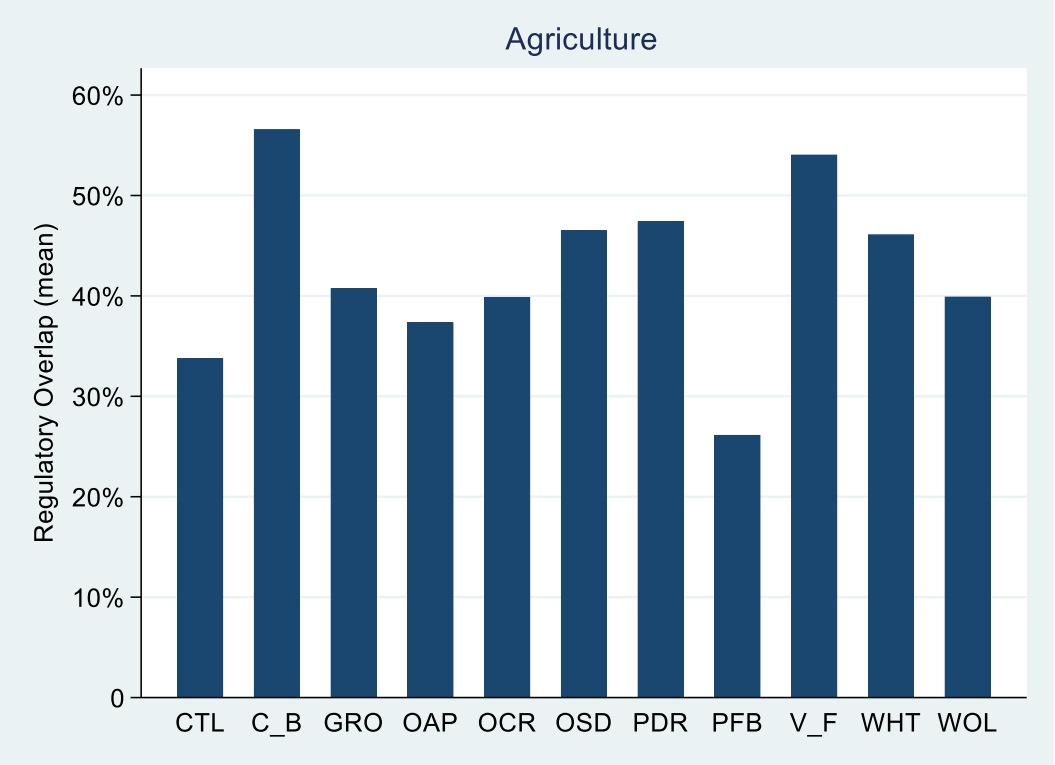
5.3. Regulatory Overlap

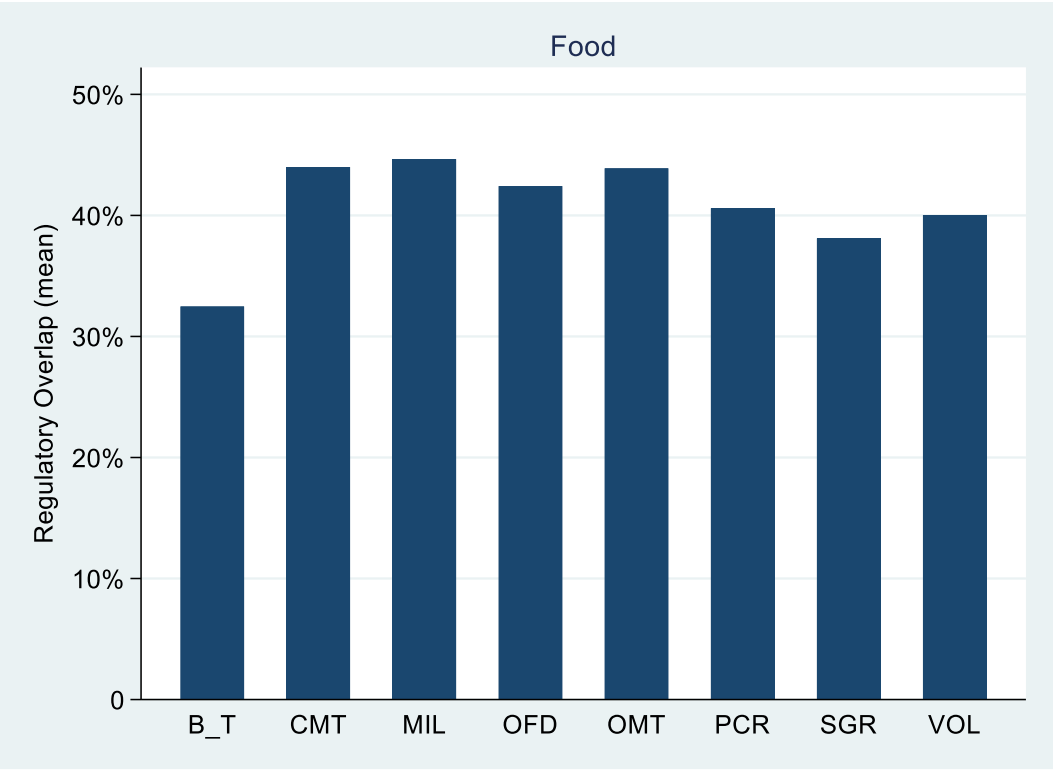
The Regulatory Overlap (RO) is calculated as in equation (7) for each single sector and pair of countries. Figure 15 present the RO focusing on the EU as exporter and averaging over product lines within each GTAP sector and importer. Over all possible trade partners, the RO, measured as the percentage of NTM subcategories applied by the importer that are also applied by the EU, is over 25% in every agriculture sector, being the highest in sugar beet (C_B) and fruits and vegetables (V_F) (over 50%), and the lowest, in plant fibers (PFB) (25%). Within the food sector, the degree of overlap is more homogenous, above 30% in every GTAP sector, with a maximum of 44% in meats (CMT and OMT) and dairy (MIL).

Across regions (Figure 16) we find overlaps above 30% with every single region, in both, agriculture and food products. In both sectors, the lowest overlap is found with Canada and USA (although this is ascribed to the lack of overlap in Non-SPS/TBT measures, as shown in Figure 17), with Mercosur (in food) and India (in agriculture). The highest overlap in both sectors occurs with Japan, and other Europe & Central Asia countries.

Figure 17 shows the regulatory overlap between the EU and selected regions, differentiating across NTMs broad categories. It is mainly the lack of overlap in Non-SPS/TBT measures the cause of low overlapping ratios with particular countries, like USA or Canada. Thus, the overlap in SPS measures goes up to around 50% with the USA, and 60-69% (in food and agriculture, respectively) with Canada. In TBT measures, USA and Canada are the countries with a lower RO with the EU, around 30% in agriculture and 20% in food, which is significantly low compared to the other regions/countries.

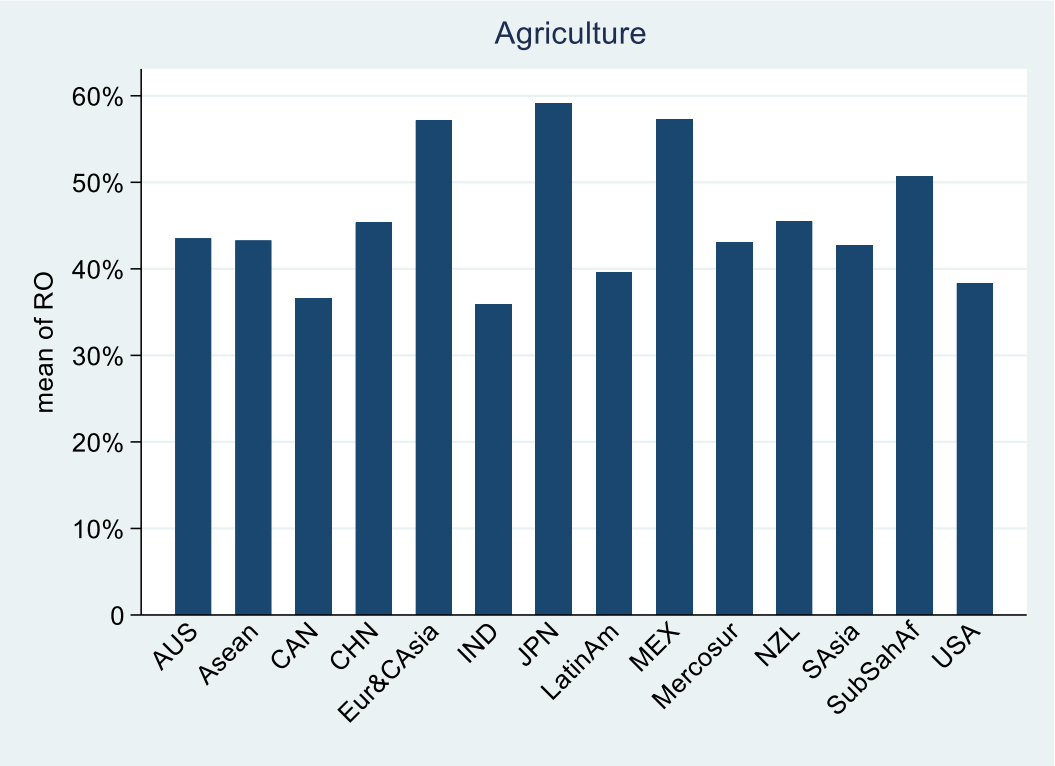
Figure 15: Regulatory Overlap (RO) in agri-food, between EU and non-EU countries, by GTAP sector (%)

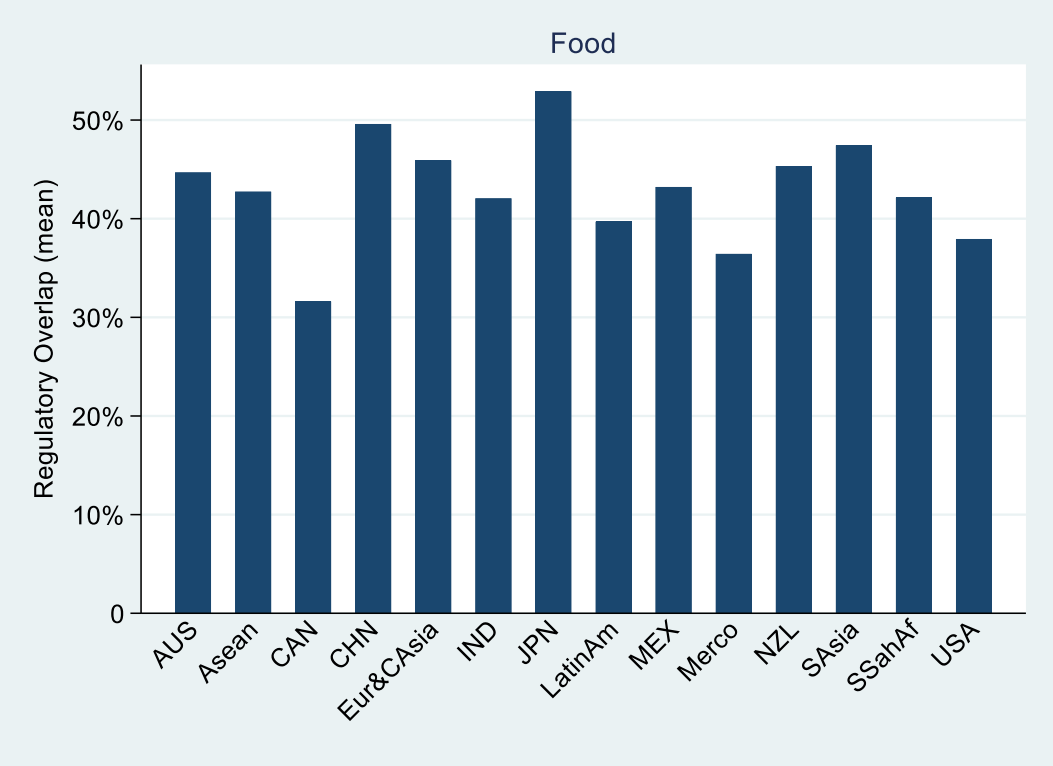




Source: Own elaboration based on UNCTAD NTMs Database.
Notes: Mean of RO over HS6 lines within GTAP sector and importers; % of NTM 4-digit categories applied by the importing region/country also applied by the EU; RO is replaced by 1 when the importer does not apply any NTM.

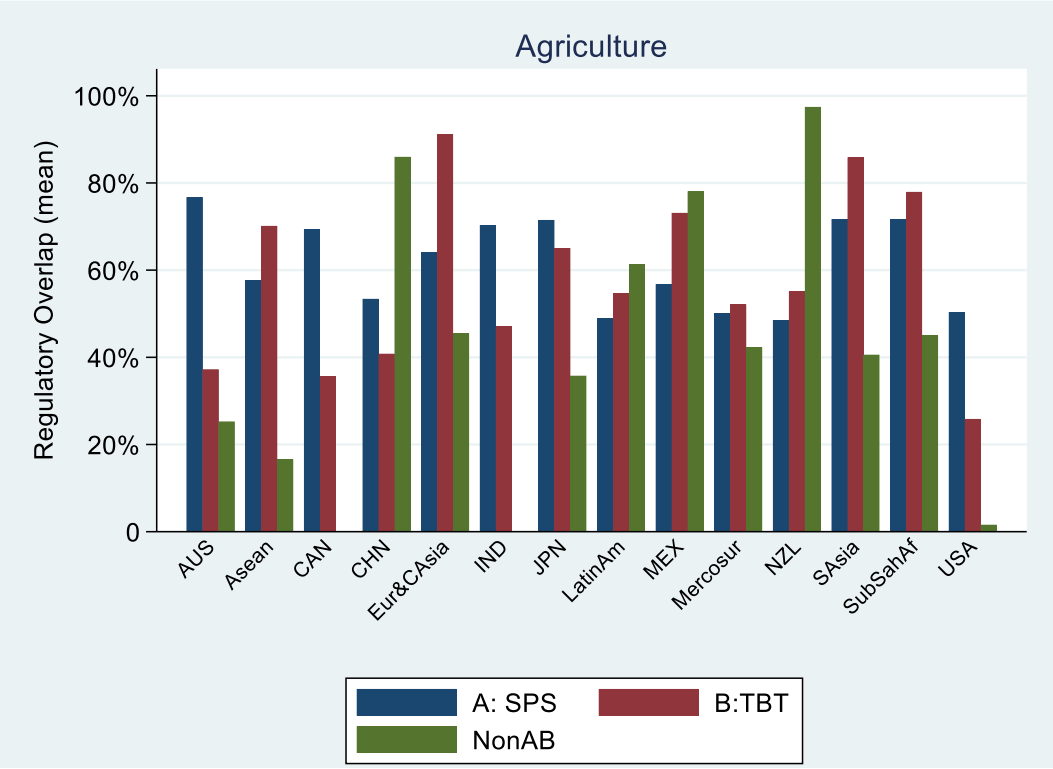
Figure 16: Regulatory Overlap (RO) in Agri-food, between the EU and selected regions (%)

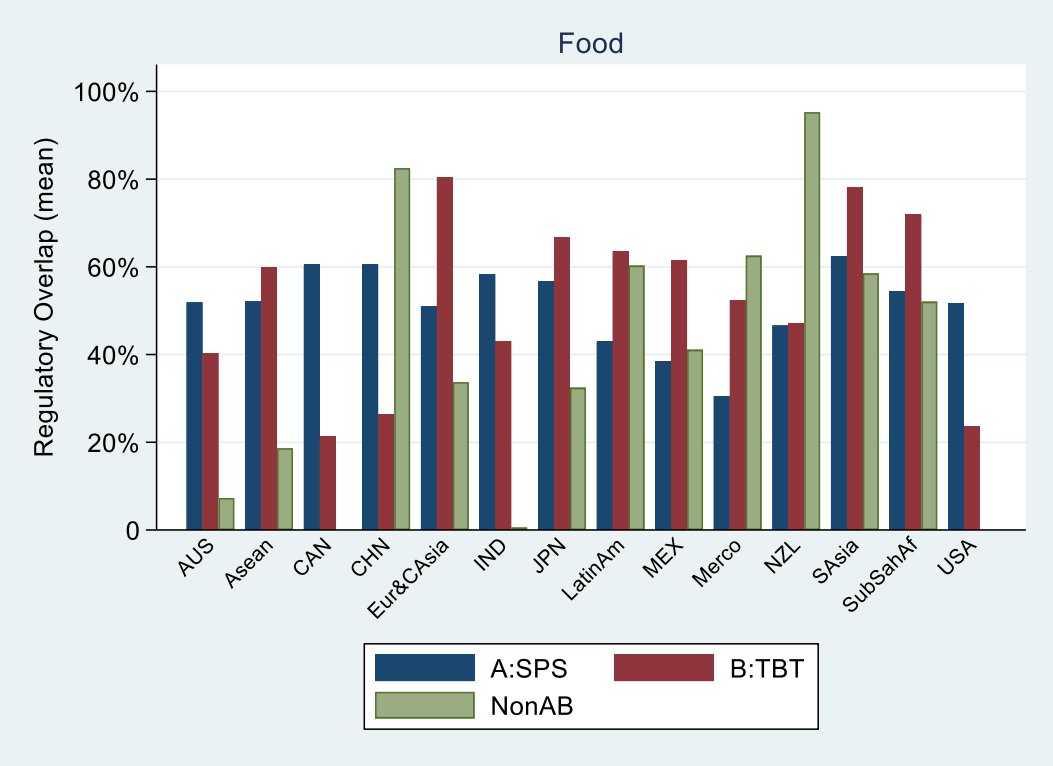




Source: Own elaboration based on UNCTAD NTMs Database.
Notes: Mean of RO over HS6 sectors; % of NTM 4-digit categories applied by the importing region/country also applied by the EU; RO is replaced by 1 when the importer does not apply any NTM.

Figure 17: Regulatory Overlap (RO) in Agri-food, between the EU and selected regions (%)





Source: Own elaboration based on UNCTAD NTMs Database.
Notes: Mean of RO over HS6 lines; % of NTM 4-digit categories applied by the importing region/country also applied by the EU, within each NTM category; RO is replaced by 1 when the importer does not apply any NTM.

5.4. Association between bilateral NTM indicators

As a final check for the interdependence between the three alternative bilateral NTM indicators applied, Table 7 shows pairwise correlations between SI and the absolute values of RIG and SI and RO. We take the absolute value of RIG because it can be either positive or negative, depending on which direction, the importer or the exporter, regulatory intensity is higher. We compute correlations using observations at the HS 6-digit level within each GTAP sector, and for two samples: the full sample of all possible country pairs, and the subsample where the EU is the exporter.

Correlations between SI and the absolute value of RIG are negative and highly significant ($p<0.00$) throughout all GTAP sectors. We notice an increase of correlations within the EU subsample and a drop of the significance for two sectors (i.e. OCR and B_T). Thus, the Similarity Index and the Regulatory Intensity Gap move in opposite directions, and the RIG is a measure of dissimilarity.

Correlations between SI and RO are positive (as expected) and highly significant ($p<0.00$). The size of the correlations increase significantly throughout all GTAP sectors when reducing the regional sample, and significance drops for two GTAP sectors (WHT and WOL). Thus, both the Similarity Index and Regulatory Overlap are measures of the underlying similarity between the patterns of NTMs applied by the exporter and importer.

In sum, we consider that both, SI and RO indicators are the easiest to interpret when conducting sectoral and/or regional aggregations. They are bound and can be expressed as percentages. The RIG indicator, on the other hand, requires a framework for comparison (across sectors and/or regions), but it is clear that provides an interesting insight about the direction in which the regulatory intensity is higher or lower.

Table 7: Pairwise correlations between bilateral NTM indicators

	All countries pairs			EU as exporter		
GTAP	Corr SI-|RIG|	Corr SI-RO	No. Obs.	Corr SI-|RIG|	Corr SI-RO	No. Obs
Agriculture						
CTL	-0.11***	0.57***	23884	-0.15***	0.51***	510
C_B	-0.13***	0.67***	4526	-0.70***	0.48***	92
GRO	-0.19***	0.43***	34448	-0.41***	0.26***	744
OAP	-0.06***	0.48***	1.5×10^5	0.12***	0.27***	2900
OCR	-0.05***	0.53***	1.9×10^5	-0.01	0.47***	3440
OSD	-0.07***	0.55***	44698	-0.22***	0.45***	899
PDR	-0.12***	0.65***	6386	-0.52***	0.61***	112
PFB	-0.14***	0.43***	12067	0.15***	0.18***	243
V_F	-0.17***	0.64***	3.0×10^5	-0.39***	0.43***	5618
WHT	-0.14***	0.38***	5944	-0.34***	0.12	143
WOL	-0.25***	0.40***	13486	-0.34***	0.05	281
Food						
B_T	-0.05***	0.59***	93390	-0.03	0.53***	1701
CMT	-0.17***	0.59***	90109	-0.28***	0.29***	1677
MIL	-0.03***	0.56***	74703	-0.24***	0.12***	1345
OFD	-0.11***	0.59***	8.7×10^5	-0.25***	0.47***	16803
OMT	-0.13***	0.62***	1.5×10^5	-0.31***	0.36***	2849
PCR	-0.13***	0.66***	6274	-0.52***	0.72***	111
SGR	-0.09***	0.47***	21354	-0.58***	0.35***	400
VOL	-0.10***	0.52***	1.4×10^5	-0.15***	0.48***	2468

Source: Own elaboration based on UNCTAD NTMs database.
Notes: Number of observations used in the computation of correlations in parentheses, corresponding to the number of HS 6-digit lines times the number of countries in the region. ***, ** indicates significant at 1 and 5%, respectively.

6. Conclusions

Efforts from international organizations (i.e. FAO, OECD, WTO, WB, UNCTAD, ITC etc.) are continuously providing new data, tools and methodologies for better understanding today's international trade regulation landscape. These tools help researchers highlight differences in trade regulations among global players and across sectors. This has been the objective of this paper, to describe the regulatory patterns currently in place and to evaluate the relative distance in such patterns between the EU and selected trade partners.

Non-Tariff Measures play an important role in today's international trade policy where we note a prevalence of technical measures, which include SPS and TBT measures, respectively chapters A and B of the UNCTAD NTM Classification system. Comparing across a broad sectoral classification into agriculture, food and non agri-food sectors, we note a prevalence of SPS measures in the first two, and a more balanced situation for TBT measures. Despite their evident objective of safeguarding food safety, technical NTMs can have an unwanted trade restricting effect, increasing concerns and doubts on their use as protectionist measures.

We find out that there is a high level of heterogeneity in the utilization of NTMs across sectors and regions. These differences pose the next challenge for policy makers who intend to identify the right structure of NTMs, signalling the ideal trade-off between addressing food safety concerns and liberalizing trade.

As a word of caution, (UNCTAD, 2017c-p.12) warns about the fact that, despite the efforts to harmonize data collection across countries, the intrinsic differences in legislation may result in a systematically larger number of measures in specific countries, such as the USA.

The difference we see across regions and sectors can provide some general idea on the countries and sectors with more stringent NTM policy, thus hinting on the trade regimes that impose higher trade costs. Nonetheless, different types of NTMs affect trade differently; some may promote trade while some may restrict it. Trade promoting measures can include those related to health concerns in importing countries, which demand healthier and more controlled food (i.e. traceability measures), thus complying with these specific NTMs, strengthen demand in importing countries. On the other hand, compliance with trade impeding NTMs may increase costs so much that countries decide not to trade. In addition these measures, although they carry benevolent intentions, such as to protect human health, they block trade through unnecessarily increasing trade burdens and increasing prices for final consumers (i.e. geographic restrictions on eligibility – authorization of establishments). Therefore, the structure of the NTMs is more relevant to understand their effect on international trade, than the simple number of NTMs one country imposes to another. For this reason, an econometric estimation is crucial in order to find the specific trade effect of each NTM, achieved through calculation of their tariff equivalents (AVE), which is also our next endeavour.

Acknowledgements

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Appendixes

Appendix 1: EU agreements

Table A 1: EU agreements in the process of modernization, awaiting adoption, or being negotiated.

Type of agreement [1]	Date of entry into force	End of negotiations	GeoFigureical/Economic Region [2]	Countries
DCFTA	-	Previous EPA with Cameroon; under negotiation extension to other Central African countries	Central Africa	Cameroon, Central African Republic, Chad, Congo(Brazzaville), Democratic Republic of Kinshasa, Equatorial Guinea, Gabon, São Tomé, Principe
EPA	2016: provisional application	2014: awaiting adoption/ ratification	EAC	Burundi, Kenya, Rwanda, Tanzania, Uganda
DCFTA	-	Still under negociation	South Mediterranean	Egypt, Jordan
DCFTA	2012: previous agreement on Dispute Settlement Mechanism	2013: PA in the process of modernization (currently on hold)	South Mediterranean	Morocco
DCFTA	2011: previous agreement on Dispute Settlement Mechanism	2013: PA in the process of modernization	South Mediterranean	Tunisia
EPA	2016: provisional application	2014: awaiting adoption/ ratification	West Africa: ECOWAS and UEMOA	Benin Burkina Faso Guinea Bissau Ivory Coast Mali Niger Senegal Togo
EPA	2016: provisional application	2014: awaiting adoption/ ratification	ECOWAS	Cape Verde Ghana Guinea Liberia Nigeria
EPA	2016: provisional application	2014: awaiting adoption/ratification	Africa	Mauritius
CETA	2017: waiting National Parlaments approbation	2016: awaiting adoption/ ratification	America	Canada
FTA	-	Still under negociation	Mercosur	Argentina, Brazil, Paraguay, Uruguay (Venezuela)
FTA	-	2016: PA in the process of modernization of Global Agreement	America	Mexico

FTA (TTIP)		Currently on hold	America	USA
Investment agreement	-	Still under negociation	Asia	China
FTA	-	Still under negociation	Asia	India
FTA	-	Still under negociation	Asia	Indonesia
FTA			Gulf region	Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates,
FTA o EPA		2017 (expected)	Asia	Japan
FTA		Still under negotiation	ASEAN	Malaysia, Myanmar
FTA		Currently on hold	ASEAN	Thailand
FTA		2014: awaiting adoption/ratification	ASEAN	Singapore
FTA	2018 (expected)	2016: awaiting adoption/ratification	ASEAN	Vietnam
DCFTA	-	under negotiation extension EPAs with Papua New Guinea and Fiji to other Oceanian countries	Oceania	Papua New Guinea, Fiji
				Cook Islands, Kiribati, Marshall Islands, Micronesia, Federated States of Nauru, Niue, Palau, Papua New Guinea, Samoa (American and Western), Solomon Islands, Tonga, Tuvalu, Vanuatu
		Proposed negotiating directives in 2017	Oceania	Australia, New Zealand

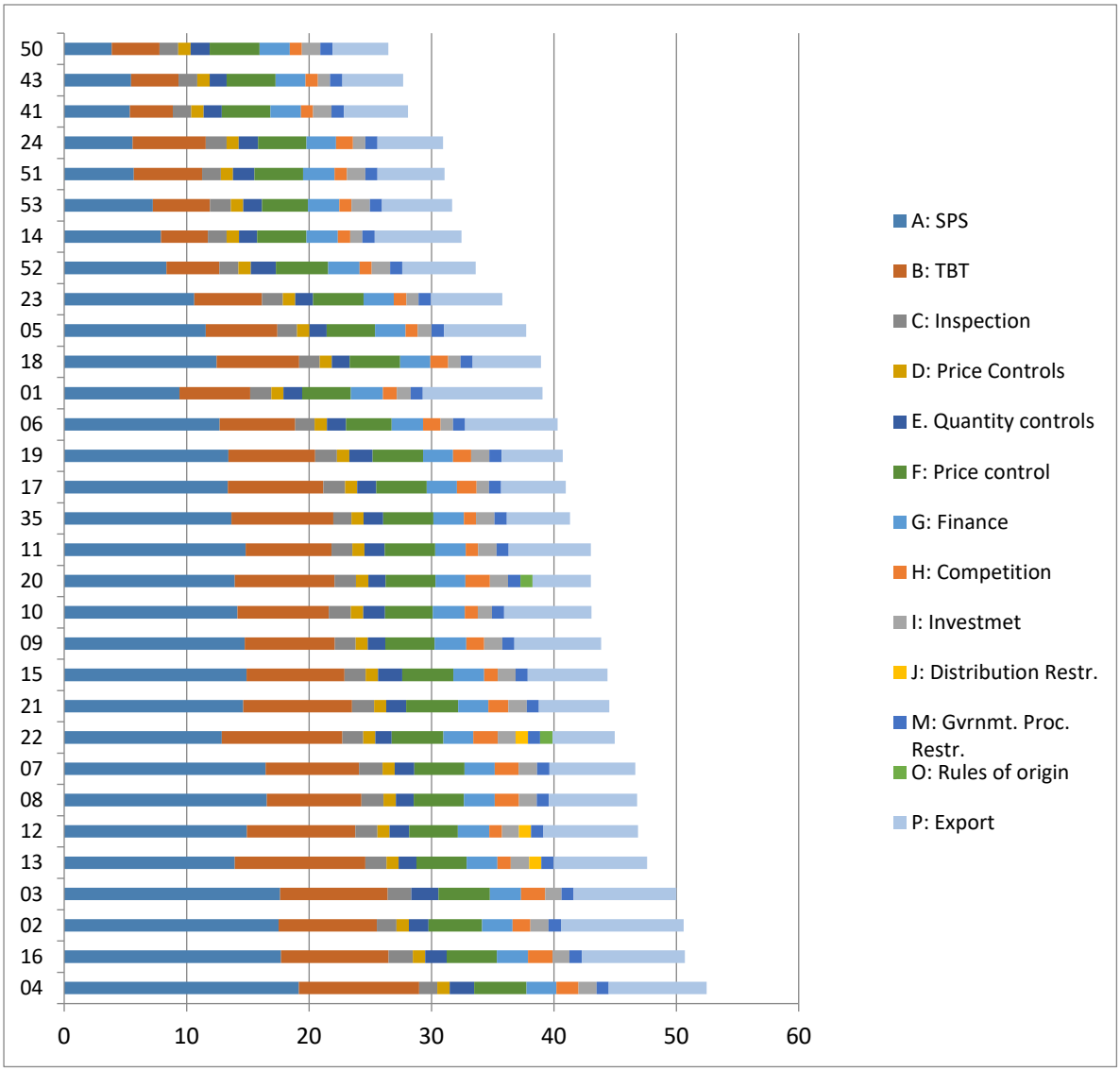
Source: (European Commission, 2017b, 2017c, 2017a)

Notes: [1]EPA: Economic Partnership Agreement; DCFTA: Deep and Comprehensive Free Trade Area; FTA: Free Trade Area; CETA: Comprehensive and Economic Trade Agreement; PA: Preferential Agreement; TTIP: Trans-Atlantic Trade and Investment Partnership. [2] EAC: East African Countries; ECOWAS: Economic Community of West African States; UEMOA: West African Economic and Monetary Union; Mercosur: South American Trade Bloc; ASEAN: Association of South-East Asia Nations.

Appendix 2: complementary calculations on unilateral Regulatory Intensity in agri-food sectors.

Figure A.1 shows the Regulatory Intensity or total number of measures applied per HS 2-digit and 1-digit NTM categories. Note however, that as the number of HS 6-digit lines differs between 2-digit sectors, this is not a very accurate figure about regulatory intensity. Nevertheless, the number of measures is bigger in sectors 04 (dairy), 02 (meats), 16 (preparations of meat and fish), 03 (fish), 12(oilseeds), 08 (fruits), 07(vegetables), and 22 (beverages).

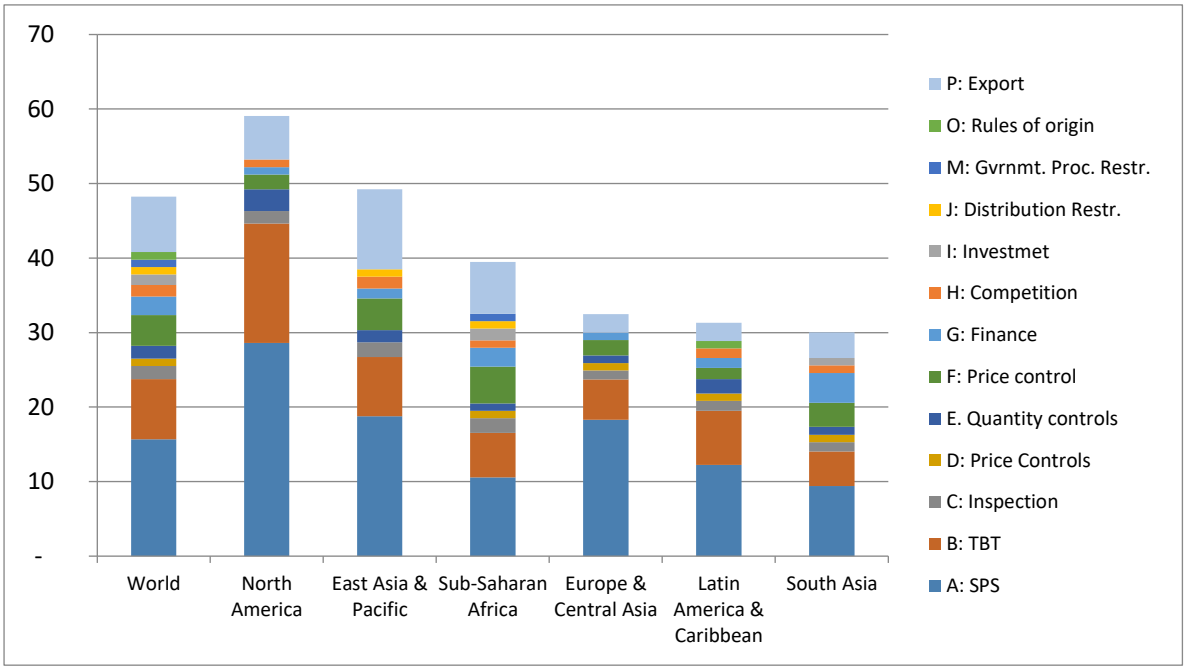
Figure A. 1: Regulatory Intensity or number of NTMs at HS 2-digit (agri-food)



Source: Own elaboration based on UNCTAD TRAINS database
Notes: Number of measures applied per HS 2-digit (i.e. adding measures affecting to the HS 6-digit lines within each 2-digit sector, per reporter) and averaged over the 57 countries.

Figure A.2 shows the average regulatory intensity or number of non-tariff measures, of different categories, globally and across geographical regions. In any region, regulations come principally from SPS measures, followed by TBT. Price control (type F) and export measures (type P) have certain weight in East Asia & Pacific as well as in Sub-Saharan African countries, and Financial measures (G) in South Asia. Comparing across regions, regulatory intensity is higher in North America, followed by East Asia & Pacific, while the rest of regions (excluding type P) show a similar number of measures, with the main difference that SPS are much more prominent in Europe & Central Asia than other countries in Asia, Africa or Latin America.

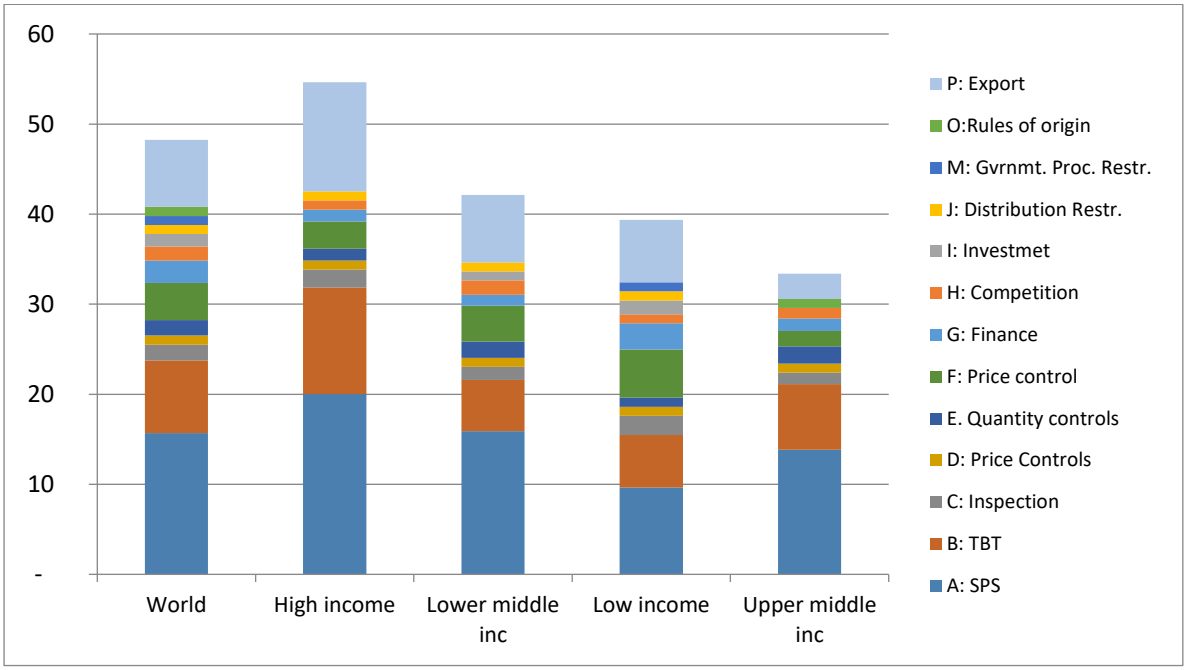
Figure A. 2: Average number of NTMs imposed by regions defined geographiically.



Source: own calculations based on UNCTAD NTMs database

Classifying the countries by income group, there is evidence that the number of regulations on non-tariff measures decreases with economic development (Figure A.3), while high-income countries make a more intensive use of SPS and TBT types.

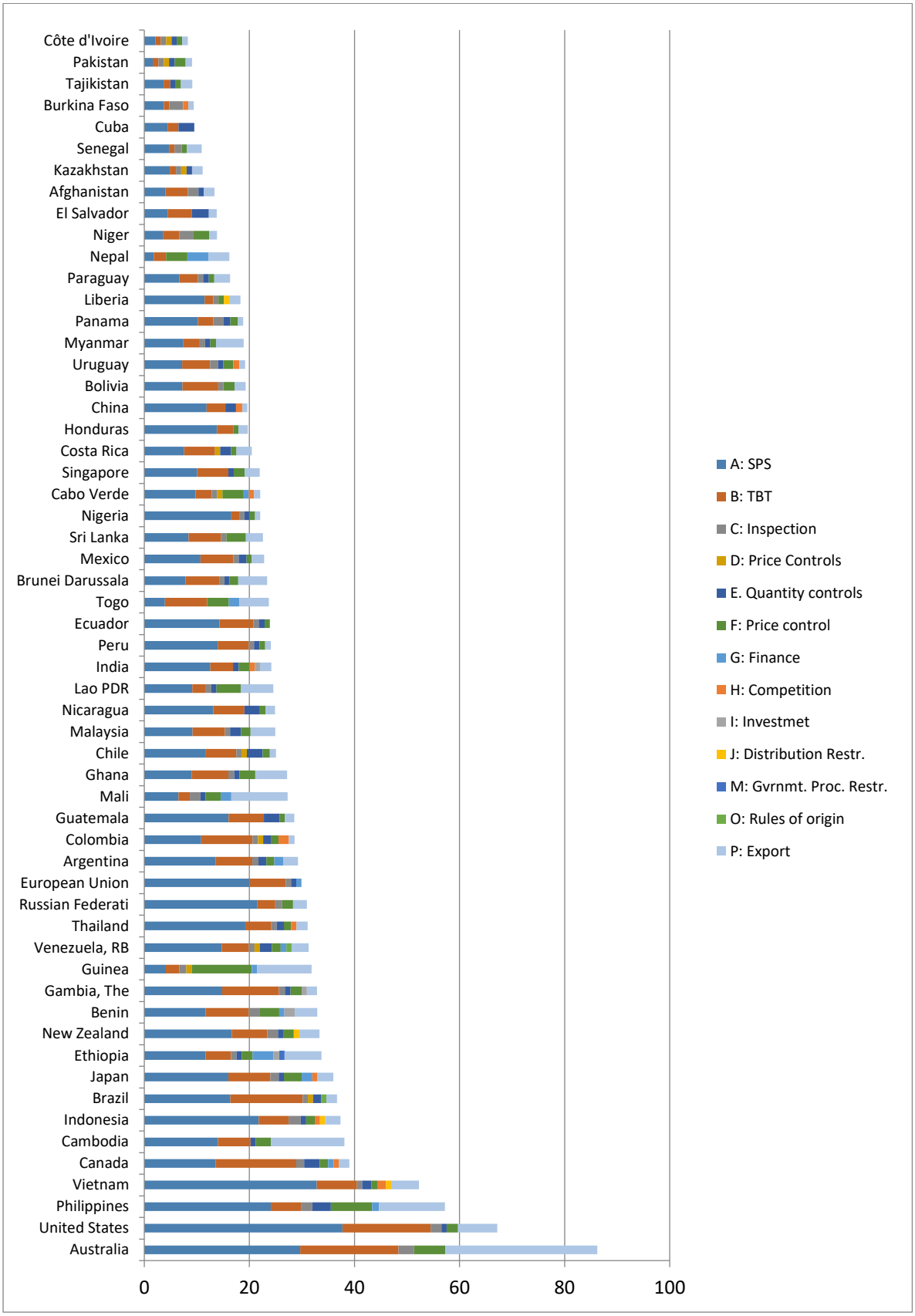
Figure A. 3: Average number of NTMs imposed by country income groups.



Source: Own elaboration based on UNCTAD TRAINS database

Finally, Figure A.4 presents regulatory intensity by individual countries. Australia, USA and Canada stand out as some of the countries with a higher number of non-tariff measures, while the EU occupies an intermediate position.

Figure A. 4: Average number of NTMs imposed by each reporter



Source: Own elaboration based on UNCTAD TRAINS database

Appendix 3: Bilateral NTMs indicators with the EU to different countries/regions, and for each GTAP sector.

Table A.2 presents the averages of the three bilateral NTMs indicators, Similarity Index, Regulatory Intensity Gap and Regulatory Overlap, between the EU as exporter and each of the rest of regions (classified as in Table 5), and for each GTAP sector. The indicators are also reported for SPS, TBT and other types (excluding those affecting exports – type P).

Table A 2: Bilateral NTMs indicators with the EU as exporter (mean)

Panel A. Agriculture

	Regulatory Overlap				Similarity Index				Regulatory Intensity Gap			
GTAP	**All**	**A:SPS**	**B:TBT**	**NonAB**	**All**	**A:SPS**	**B:TBT**	**NonAB**	**All**	**A:SPS**	**B:TBT**	**NonAB**
AUS												
CTL	0.13	1.00	0.14	0.42	0.05	0.00	0.12	0.42	0.00	-8.50	8.50	0.17
C_B	0.61	0.79	0.38	0.00	0.44	0.50	0.35	0.00	0.05	-6.50	12.50	2.00
GRO	0.48	0.92	0.52	0.33	0.07	0.00	0.19	0.17	-0.06	-14.33	3.00	0.33
OAP	0.26	0.87	0.25	0.75	0.11	0.08	0.14	0.70	0.01	-5.34	6.67	0.41
OCR	0.42	0.73	0.42	0.11	0.24	0.26	0.27	0.10	0.07	1.46	8.53	1.51
OSD	0.46	0.69	0.30	0.00	0.31	0.34	0.25	0.00	0.04	-7.50	12.30	2.00
PDR	0.56	0.71	0.38	0.00	0.38	0.45	0.28	0.00	0.05	-5.50	12.50	1.50
PFB	0.53	1.00	0.53	1.00	0.21	0.80	0.23	0.80	-0.01	-0.80	0.00	-0.20
V_F	0.54	0.67	0.40	0.00	0.38	0.42	0.33	0.00	0.11	2.37	13.61	2.51
WHT	0.81	1.00	0.82	0.75	0.02	0.00	0.06	0.00	-0.11	-15.75	-1.25	-1.25
WOL	0.42	1.00	0.42	1.00	0.11	0.17	0.23	1.00	-0.03	-5.83	1.33	0.00
Asean												
CTL	0.29	0.49	0.56	0.19	0.15	0.16	0.29	0.15	0.00	-2.53	1.17	1.55
C_B	0.50	0.64	0.75	0.20	0.22	0.24	0.25	0.20	-0.12	-19.10	-3.95	2.20
GRO	0.48	0.57	0.86	0.25	0.12	0.14	0.13	0.20	-0.04	-6.34	-2.40	1.54
OAP	0.31	0.51	0.55	0.26	0.13	0.13	0.17	0.24	-0.02	-4.89	0.06	1.50
OCR	0.40	0.50	0.70	0.21	0.18	0.22	0.21	0.20	-0.01	-2.38	-1.72	1.90

OSD	0.43	0.56	0.79	0.16	0.18	0.19	0.25	0.13	-0.09	-14.01	-3.03	2.22
PDR	0.45	0.61	0.59	0.00	0.21	0.23	0.33	0.00	-0.08	-15.55	-0.55	3.10
PFB	0.27	0.46	0.68	0.68	0.03	0.35	0.04	0.54	0.00	3.02	-3.38	0.34
V_F	0.53	0.67	0.77	0.03	0.24	0.26	0.25	0.03	-0.05	-8.10	-3.42	2.31
WHT	0.57	0.69	0.82	0.35	0.13	0.16	0.12	0.05	-0.06	-7.95	-2.38	0.18
WOL	0.37	0.64	0.49	0.65	0.04	0.10	0.06	0.65	-0.04	-4.84	-2.02	0.35
CAN												
CTL	0.39	0.50	0.83	0.00	0.28	0.36	0.42	0.00	0.02	0.08	1.33	2.50
C_B	0.41	0.91	0.13	0.00	0.22	0.32	0.10	0.00	-0.07	-21.50	6.50	3.00
GRO	0.30	0.63	0.15	0.00	0.22	0.33	0.13	0.00	0.07	-4.22	13.78	3.22
OAP	0.34	0.43	0.69	0.00	0.22	0.24	0.48	0.00	0.02	-2.56	2.79	3.08
OCR	0.33	0.77	0.30	0.00	0.21	0.35	0.19	0.00	0.04	-4.79	8.53	3.93
OSD	0.37	0.68	0.14	0.00	0.25	0.37	0.12	0.00	0.02	-13.10	12.65	3.60
PDR	0.38	1.00	0.13	0.00	0.17	0.22	0.11	0.00	-0.12	-27.50	6.50	0.00
PFB	0.30	1.00	0.42	0.00	0.25	0.80	0.36	0.00	0.05	-0.80	7.20	2.80
V_F	0.41	0.82	0.24	0.00	0.26	0.33	0.21	0.00	0.02	-10.46	10.92	3.78
WHT	0.33	0.68	0.15	0.00	0.24	0.42	0.13	0.00	0.08	-4.75	13.25	5.25
WOL	0.31	0.45	0.43	0.00	0.24	0.30	0.43	0.00	0.05	-1.00	6.17	2.67
CHN												
CTL	0.34	0.34	1.00	1.00	0.26	0.28	0.40	0.80	0.03	6.20	-1.20	-0.40
C_B	0.71	0.83	0.00	1.00	0.40	0.48	0.00	1.00	-0.13	-19.00	-3.00	0.00
GRO	0.40	0.42	1.00	0.60	0.21	0.26	0.00	0.60	-0.02	-0.40	-3.60	0.80
OAP	0.28	0.31	0.78	0.61	0.19	0.23	0.09	0.57	-0.01	-0.45	-1.59	0.55
OCR	0.38	0.40	0.73	0.90	0.23	0.28	0.02	0.88	-0.01	1.40	-3.73	0.10
OSD	0.63	0.69	0.44	1.00	0.33	0.41	0.00	0.89	-0.08	-9.67	-3.89	-0.11
PDR	0.55	0.72	0.00	0.00	0.31	0.42	0.00	0.00	-0.08	-13.00	-3.50	2.00

PFB	0.00	1.00	0.00	0.80	0.00	0.80	0.00	0.60	-0.02	-0.80	-3.40	0.40
V_F	0.64	0.73	0.01	1.00	0.35	0.46	0.00	0.94	-0.06	-5.54	-4.18	-0.12
WHT												
WOL	0.02	0.00	0.04	0.67	0.01	0.00	0.03	0.67	0.02	-2.33	3.50	2.33
Europe & Central Asia												
CTL	0.48	0.52	0.95	0.45	0.23	0.26	0.30	0.36	-0.02	-2.36	-1.27	0.09
C_B	0.72	0.83	1.00	0.25	0.23	0.26	0.18	0.25	-0.15	-22.25	-4.75	1.75
GRO	0.47	0.53	0.82	0.36	0.20	0.23	0.23	0.29	0.00	1.21	-1.93	1.57
OAP	0.51	0.59	0.78	0.47	0.22	0.26	0.12	0.45	-0.02	-3.35	-1.66	0.71
OCR	0.45	0.50	0.89	0.45	0.18	0.25	0.12	0.44	-0.04	-4.63	-3.67	1.15
OSD	0.66	0.69	1.00	0.47	0.20	0.23	0.16	0.42	-0.09	-13.66	-4.08	1.32
PDR	0.53	0.60	0.67	0.67	0.17	0.19	0.14	0.33	-0.15	-21.17	-4.33	0.00
PFB	0.11	0.48	0.93	0.64	0.02	0.33	0.00	0.50	-0.02	0.50	-4.36	0.50
V_F	0.71	0.79	1.00	0.44	0.20	0.24	0.11	0.41	-0.09	-11.86	-5.33	2.01
WHT	0.43	0.45	1.00	0.00	0.29	0.33	0.38	0.00	0.05	7.75	-1.25	1.50
WOL	0.41	0.52	0.78	0.67	0.14	0.26	0.00	0.67	-0.02	-1.28	-3.61	0.61
IND												
CTL	0.05	1.00	0.80	0.05	0.01	0.00	0.20	0.04	-0.03	-7.80	-0.80	3.60
C_B	0.50	0.86	0.25	0.00	0.25	0.30	0.20	0.00	-0.13	-25.00	0.00	3.00
GRO	0.36	0.49	0.50	0.00	0.26	0.31	0.36	0.00	0.02	-1.00	0.20	4.20
OAP	0.10	0.80	0.55	0.00	0.05	0.02	0.24	0.00	-0.03	-8.41	-0.30	3.39
OCR	0.29	0.38	0.43	0.00	0.18	0.17	0.28	0.00	0.00	-2.35	-0.47	3.18
OSD	0.44	0.60	0.44	0.00	0.26	0.29	0.35	0.00	-0.07	-14.78	0.00	3.33
PDR	0.46	0.65	0.38	0.00	0.30	0.38	0.30	0.00	-0.08	-17.50	-0.50	3.50
PFB	0.19	1.00	0.36	0.00	0.13	0.80	0.22	0.00	0.02	-0.80	0.80	3.80
V_F	0.57	0.81	0.47	0.00	0.33	0.40	0.31	0.00	-0.05	-9.63	-1.16	2.89

WHT												
WOL	0.09	1.00	0.17	0.00	0.05	0.17	0.12	0.00	0.00	-5.83	2.50	4.00
JPN												
CTL	0.28	0.32	0.21	0.92	0.14	0.15	0.18	0.67	-0.02	-5.00	1.17	-0.42
C_B	0.81	0.90	0.50	0.00	0.56	0.66	0.25	0.00	-0.06	-8.50	-3.50	1.00
GRO	0.55	0.71	0.38	0.78	0.27	0.30	0.23	0.72	-0.04	-7.00	0.28	0.17
OAP	0.28	0.51	0.28	0.64	0.17	0.15	0.22	0.59	0.00	-3.92	3.07	0.67
OCR	0.62	0.68	0.77	0.54	0.34	0.41	0.31	0.54	-0.01	-0.84	-1.50	0.69
OSD	0.68	0.77	0.50	0.00	0.43	0.50	0.26	0.00	-0.07	-10.05	-2.45	0.90
PDR	0.73	0.86	0.50	0.00	0.51	0.63	0.29	0.00	-0.08	-12.00	-2.50	1.00
PFB	0.44	1.00	0.47	0.80	0.15	0.80	0.18	0.60	-0.02	-0.80	-2.20	0.20
V_F	0.78	0.85	0.93	0.01	0.45	0.52	0.27	0.01	-0.06	-7.78	-4.00	1.01
WHT	0.45	0.78	0.35	0.00	0.23	0.26	0.29	0.00	-0.04	-9.25	1.75	0.50
WOL	0.33	1.00	0.36	0.83	0.10	0.17	0.20	0.83	-0.03	-5.83	0.17	0.17
Latin America & Caribbean												
CTL	0.34	0.38	0.75	0.69	0.18	0.20	0.25	0.49	0.01	1.35	-0.17	0.15
C_B	0.54	0.69	0.48	0.64	0.16	0.16	0.19	0.64	-0.15	-24.80	-2.44	0.72
GRO	0.37	0.42	0.60	0.62	0.18	0.18	0.23	0.54	-0.01	-3.18	0.24	0.61
OAP	0.35	0.44	0.60	0.64	0.16	0.18	0.15	0.62	-0.02	-3.04	-0.69	0.81
OCR	0.35	0.42	0.51	0.62	0.18	0.18	0.25	0.61	-0.01	-2.30	0.31	0.77
OSD	0.41	0.49	0.44	0.65	0.15	0.14	0.22	0.49	-0.10	-17.21	0.04	0.64
PDR	0.41	0.55	0.57	0.31	0.19	0.19	0.31	0.12	-0.10	-17.85	-0.50	1.19
PFB	0.16	0.36	0.49	0.42	0.03	0.30	0.01	0.33	0.01	3.42	-2.86	1.61
V_F	0.46	0.59	0.54	0.60	0.19	0.19	0.20	0.57	-0.06	-9.45	-1.75	0.80
WHT	0.41	0.44	0.64	0.64	0.19	0.20	0.25	0.15	0.00	-0.77	0.57	-0.38
WOL	0.23	0.45	0.42	0.47	0.07	0.13	0.00	0.47	-0.01	-1.69	-2.18	1.62

MEX												
CTL	0.39	0.65	0.17	0.00	0.19	0.27	0.13	0.00	0.01	-0.08	1.25	0.50
C_B	0.72	0.67	0.83	1.00	0.26	0.19	0.63	1.00	-0.13	-22.50	-0.50	0.00
GRO	0.67	0.62	1.00	0.78	0.47	0.44	0.72	0.72	-0.01	-0.56	-0.83	-0.06
OAP	0.45	0.66	0.32	0.25	0.24	0.26	0.28	0.20	0.01	-1.72	1.92	0.85
OCR	0.46	0.37	0.76	0.96	0.22	0.17	0.52	0.94	-0.03	-4.75	-0.38	0.01
OSD	0.72	0.63	1.00	1.00	0.23	0.15	0.73	0.75	-0.12	-19.65	-1.00	-0.25
PDR	0.65	0.60	1.00	1.00	0.36	0.33	0.83	0.50	-0.11	-14.50	-3.00	-1.00
PFB	0.10	0.10	1.00	1.00	0.05	0.07	0.00	0.75	-0.01	3.00	-4.50	-0.25
V_F	0.70	0.62	0.91	0.98	0.22	0.16	0.53	0.93	-0.11	-15.96	-2.88	-0.08
WHT	0.66	0.62	1.00	0.75	0.45	0.44	0.75	0.25	0.00	2.25	-0.75	-1.25
WOL	0.50	0.67	0.00	1.00	0.17	0.25	0.00	1.00	-0.03	-2.00	-3.00	0.00
Mercosur												
CTL	0.27	0.29	0.65	0.46	0.15	0.17	0.17	0.33	0.02	2.13	0.76	0.28
C_B	0.62	0.80	0.61	0.50	0.20	0.19	0.29	0.50	-0.16	-24.88	-3.38	0.50
GRO	0.43	0.49	0.51	0.42	0.21	0.17	0.43	0.38	0.00	-3.01	2.65	0.32
OAP	0.30	0.32	0.51	0.55	0.17	0.16	0.24	0.53	0.00	-1.64	1.29	0.66
OCR	0.38	0.40	0.49	0.47	0.22	0.20	0.35	0.47	0.01	-1.25	2.14	0.79
OSD	0.41	0.59	0.41	0.38	0.19	0.17	0.31	0.25	-0.08	-15.29	1.05	0.51
PDR	0.46	0.51	0.56	0.00	0.21	0.16	0.53	0.00	-0.08	-17.00	3.00	0.25
PFB	0.17	0.08	0.88	0.70	0.10	0.06	0.15	0.55	0.02	5.55	-3.30	0.70
V_F	0.55	0.67	0.53	0.32	0.25	0.22	0.41	0.31	-0.04	-9.84	0.71	1.57
WHT	0.50	0.56	0.55	0.50	0.24	0.21	0.50	0.13	-0.01	-4.00	2.69	-0.88
WOL	0.48	0.44	0.75	0.56	0.15	0.11	0.33	0.56	-0.01	-2.11	-0.89	0.89
NZL												

CTL	0.49	0.48	0.92	0.92	0.36	0.39	0.33	0.67	0.01	2.67	-1.08	-0.42
C_B	0.63	0.69	0.33	1.00	0.35	0.39	0.20	1.00	-0.11	-16.50	-2.00	0.00
GRO	0.38	0.36	1.00	1.00	0.11	0.12	0.05	0.83	-0.08	-9.28	-3.67	-0.33
OAP	0.26	0.33	0.55	0.89	0.16	0.16	0.19	0.84	0.00	0.74	-0.90	0.25
OCR	0.42	0.42	0.68	1.00	0.26	0.27	0.22	0.99	0.00	0.40	-1.20	-0.03
OSD	0.52	0.53	0.54	1.00	0.29	0.30	0.23	0.75	-0.08	-11.45	-1.80	-0.25
PDR	0.56	0.61	0.33	1.00	0.33	0.36	0.23	0.50	-0.09	-13.50	-0.50	-1.00
PFB	0.20	0.20	1.00	1.00	0.00	0.00	0.00	0.80	-0.01	2.80	-4.40	-0.20
V_F	0.59	0.64	0.34	1.00	0.39	0.45	0.18	0.95	-0.02	-2.58	-1.26	-0.11
WHT	0.50	0.50	1.00	1.00	0.15	0.19	0.00	0.25	-0.08	-8.75	-3.75	-1.50
WOL	0.18	0.21	0.50	1.00	0.06	0.08	0.00	1.00	-0.03	-2.33	-3.33	0.00
South Asia												
CTL	0.27	0.55	1.00	0.58	0.10	0.12	0.37	0.47	-0.04	-5.21	-1.26	0.16
C_B	0.54	0.75	0.83	0.50	0.08	0.08	0.08	0.50	-0.18	-29.50	-3.25	1.00
GRO	0.30	0.59	0.38	0.56	0.04	0.05	0.00	0.50	-0.08	-11.38	-2.88	0.00
OAP	0.38	0.74	0.94	0.57	0.05	0.06	0.09	0.53	-0.05	-7.80	-1.93	0.38
OCR	0.33	0.66	0.84	0.48	0.06	0.14	0.04	0.46	-0.06	-7.94	-3.72	0.81
OSD	0.43	0.78	0.80	0.44	0.06	0.06	0.05	0.39	-0.14	-21.61	-3.89	0.94
PDR	0.52	0.66	0.58	0.75	0.09	0.09	0.08	0.38	-0.19	-28.13	-3.50	-0.75
PFB	0.42	0.53	0.93	0.67	0.01	0.35	0.00	0.53	-0.02	0.27	-4.33	0.27
V_F	0.50	0.74	0.85	0.23	0.08	0.08	0.07	0.21	-0.13	-19.12	-4.66	1.18
WHT												
WOL	0.67	1.00	1.00	0.67	0.00	0.17	0.00	0.67	-0.05	-5.83	-3.83	0.33
Sub-Saharan Africa												
CTL	0.44	0.60	0.91	0.41	0.12	0.16	0.30	0.34	-0.03	-5.57	-1.14	1.02
C_B	0.58	0.80	0.72	0.41	0.20	0.21	0.18	0.41	-0.16	-25.18	-3.47	1.59

GRO	0.34	0.61	0.84	0.25	0.07	0.07	0.07	0.18	-0.08	-11.91	-2.55	0.96
OAP	0.51	0.72	0.80	0.58	0.10	0.12	0.10	0.54	-0.04	-7.03	-1.64	1.25
OCR	0.45	0.64	0.80	0.39	0.13	0.20	0.13	0.38	-0.05	-6.26	-3.05	1.44
OSD	0.52	0.76	0.71	0.29	0.15	0.16	0.15	0.26	-0.12	-19.19	-2.84	1.41
PDR	0.48	0.67	0.69	0.32	0.18	0.19	0.19	0.14	-0.14	-23.57	-2.61	1.25
PFB	0.34	0.62	0.81	0.43	0.02	0.47	0.02	0.35	-0.02	0.00	-3.99	1.25
V_F	0.57	0.77	0.74	0.46	0.20	0.22	0.17	0.43	-0.10	-15.14	-3.72	1.66
WHT	0.23	0.56	0.90	0.25	0.10	0.09	0.22	0.00	-0.09	-13.08	-2.50	-0.75
WOL	0.51	0.84	0.82	0.57	0.03	0.17	0.00	0.57	-0.04	-5.15	-3.58	1.43
USA												
CTL	0.26	0.42	0.40	0.00	0.21	0.34	0.06	0.00	0.12	10.42	5.00	5.75
C_B	0.64	0.86	0.25	0.00	0.45	0.57	0.18	0.00	-0.01	-5.50	3.50	1.00
GRO	0.14	0.22	0.00	0.00	0.08	0.10	0.00	0.00	0.01	1.00	0.22	0.67
OAP	0.22	0.29	0.24	0.08	0.17	0.21	0.16	0.05	0.15	11.52	9.18	5.00
OCR	0.31	0.39	0.26	0.00	0.23	0.28	0.14	0.00	0.16	21.31	5.34	1.20
OSD	0.45	0.55	0.24	0.00	0.34	0.41	0.20	0.00	0.06	6.85	3.35	0.95
PDR	0.54	0.69	0.24	0.00	0.41	0.51	0.21	0.00	0.08	6.50	6.50	0.00
PFB	0.19	0.83	0.24	0.00	0.12	0.82	0.14	0.00	0.02	1.40	0.80	1.20
V_F	0.58	0.73	0.31	0.00	0.45	0.57	0.23	0.00	0.11	12.93	4.62	1.42
WHT	0.15	0.23	0.00	0.00	0.08	0.11	0.00	0.00	0.00	0.75	0.25	-0.50
WOL	0.14	0.17	0.21	0.00	0.07	0.17	0.15	0.00	0.00	-4.17	2.83	1.00

Panel B. Food

	Regulatory Overlap				Similarity Index				Regulatory Intensity Gap			
GTAP	**All**	**A:SPS**	**B:TBT**	**NonAB**	**All**	**A:SPS**	**B:TBT**	**NonAB**	**All**	**A:SPS**	**B:TBT**	**NonAB**
AUS												
B_T	0.42	0.66	0.31	0.31	0.25	0.52	0.19	0.25	0.11	6.91	11.38	1.25
CMT	0.40	0.43	0.45	0.03	0.31	0.31	0.41	0.03	0.12	7.64	11.70	1.45
MIL	0.36	0.45	0.32	0.00	0.26	0.34	0.21	0.00	0.10	3.64	11.52	1.92
OFD	0.45	0.52	0.38	0.05	0.31	0.37	0.24	0.04	0.11	7.34	10.29	1.78
OMT	0.38	0.42	0.39	0.02	0.29	0.31	0.30	0.02	0.11	6.86	11.00	1.89
PCR	0.59	0.64	0.50	0.00	0.36	0.41	0.33	0.00	0.03	-3.00	8.00	0.00
SGR	0.39	0.41	0.46	0.00	0.23	0.27	0.19	0.00	0.05	4.88	3.38	0.25
VOL	0.64	0.68	0.63	0.26	0.24	0.38	0.17	0.24	0.01	-1.26	2.02	1.41
Asean												
B_T	0.35	0.62	0.53	0.17	0.17	0.33	0.28	0.13	-0.01	-3.94	0.00	1.84
CMT	0.40	0.50	0.52	0.07	0.29	0.33	0.33	0.06	0.01	-1.78	0.80	1.85
MIL	0.45	0.55	0.53	0.14	0.25	0.31	0.27	0.02	-0.06	-8.72	-1.18	-0.22
OFD	0.43	0.51	0.62	0.19	0.23	0.24	0.29	0.17	-0.03	-4.49	-2.28	1.93
OMT	0.42	0.51	0.52	0.12	0.29	0.33	0.30	0.11	-0.01	-3.04	-0.69	2.12
PCR	0.40	0.51	0.54	0.01	0.19	0.21	0.33	0.01	-0.06	-12.80	0.90	1.60
SGR	0.38	0.51	0.58	0.23	0.15	0.14	0.23	0.06	-0.08	-8.24	-4.96	0.19
VOL	0.46	0.54	0.68	0.35	0.15	0.19	0.20	0.33	-0.08	-9.27	-5.41	1.39
CAN												
B_T	0.24	0.80	0.24	0.00	0.16	0.41	0.18	0.00	0.06	-8.31	12.59	6.03
CMT	0.22	0.31	0.12	0.00	0.17	0.22	0.10	0.00	0.05	-3.18	9.00	2.30
MIL	0.27	0.53	0.18	0.00	0.18	0.28	0.14	0.00	-0.02	-17.00	8.40	4.40
OFD	0.35	0.66	0.24	0.00	0.25	0.34	0.19	0.00	0.02	-7.02	8.44	2.85
OMT	0.23	0.34	0.14	0.00	0.18	0.23	0.11	0.00	0.03	-4.98	8.00	2.64
PCR	0.38	1.00	0.13	0.00	0.17	0.24	0.11	0.00	-0.11	-25.00	7.00	-1.00

SGR	0.32	0.75	0.23	0.00	0.17	0.22	0.17	0.00	-0.04	-14.13	4.75	2.50
VOL	0.31	0.61	0.21	0.00	0.17	0.20	0.15	0.00	-0.03	-12.28	4.04	3.11
CHN												
B_T	0.36	0.66	0.39	0.67	0.20	0.40	0.13	0.60	-0.02	-5.23	1.27	0.07
CMT	0.53	0.60	0.04	1.00	0.40	0.52	0.00	0.69	-0.03	-2.27	-2.50	-0.62
MIL	0.50	0.64	0.10	0.52	0.31	0.44	0.01	0.09	-0.09	-9.65	-3.91	-1.35
OFD	0.54	0.63	0.30	0.90	0.29	0.35	0.12	0.81	-0.06	-6.80	-2.82	-0.04
OMT	0.51	0.59	0.11	0.89	0.39	0.50	0.06	0.84	-0.03	-2.80	-2.84	0.18
PCR	0.47	0.62	0.00	0.00	0.27	0.36	0.00	0.00	-0.08	-12.00	-3.00	1.00
SGR	0.09	0.00	0.72	0.08	0.03	0.00	0.05	0.07	-0.12	-17.50	-5.50	2.33
VOL	0.38	0.53	0.29	0.67	0.15	0.21	0.03	0.63	-0.11	-12.46	-7.28	0.78
Europe&CentralAsia												
B_T	0.27	0.51	0.48	0.12	0.13	0.32	0.23	0.10	-0.03	-5.92	-1.64	1.80
CMT	0.66	0.67	1.00	0.54	0.25	0.29	0.19	0.42	-0.04	-4.39	-3.44	0.48
MIL	0.64	0.73	0.62	0.32	0.21	0.29	0.12	0.03	-0.10	-11.79	-4.59	-0.20
OFD	0.45	0.49	0.83	0.33	0.19	0.23	0.20	0.29	-0.06	-6.98	-4.70	1.44
OMT	0.65	0.71	0.88	0.35	0.28	0.32	0.23	0.33	-0.05	-6.28	-4.26	1.48
PCR	0.30	0.31	0.67	0.67	0.13	0.15	0.17	0.00	-0.14	-20.00	-4.00	-1.00
SGR	0.21	0.23	0.78	0.33	0.11	0.13	0.11	0.06	-0.11	-11.39	-7.94	-0.56
VOL	0.22	0.25	0.76	0.39	0.11	0.14	0.07	0.37	-0.11	-12.08	-7.70	0.90
IND												
B_T	0.44	0.71	0.50	0.00	0.27	0.39	0.31	0.00	-0.02	-5.60	-2.00	3.33
CMT	0.36	0.49	0.28	0.08	0.26	0.32	0.21	0.06	-0.03	-7.92	0.46	2.81
MIL	0.32	0.43	0.36	0.00	0.20	0.26	0.21	0.00	-0.06	-11.65	-1.39	2.00
OFD	0.45	0.62	0.46	0.00	0.29	0.35	0.25	0.00	-0.04	-6.54	-2.64	2.91
OMT	0.35	0.48	0.34	0.01	0.25	0.31	0.21	0.00	-0.04	-8.25	-0.95	2.98
PCR	0.43	0.62	0.25	0.00	0.27	0.36	0.20	0.00	-0.08	-15.00	0.00	2.00
SGR	0.47	0.54	0.83	0.00	0.26	0.31	0.33	0.00	-0.07	-6.83	-6.50	1.33
VOL	0.43	0.54	0.42	0.00	0.27	0.33	0.23	0.00	-0.03	-5.17	-3.76	3.04
JPN												

B_T	0.48	0.74	0.75	0.16	0.30	0.56	0.39	0.16	-0.01	-2.59	-1.03	2.53
CMT	0.37	0.40	0.35	0.61	0.28	0.30	0.30	0.55	0.06	4.15	6.18	0.88
MIL	0.33	0.38	0.31	0.12	0.22	0.27	0.20	0.00	0.03	0.80	3.96	0.16
OFD	0.57	0.59	0.72	0.26	0.39	0.41	0.43	0.25	-0.02	-3.74	-0.72	1.54
OMT	0.41	0.41	0.55	0.50	0.32	0.32	0.38	0.48	0.01	1.27	0.61	0.50
PCR	0.67	0.79	0.50	0.00	0.44	0.55	0.33	0.00	-0.07	-10.00	-1.50	0.00
SGR	0.50	0.60	0.73	0.25	0.27	0.36	0.27	0.13	0.00	-7.13	3.75	2.63
VOL	0.64	0.67	0.76	0.63	0.44	0.49	0.36	0.61	-0.04	-5.26	-3.02	1.22
Latin Amerca & Caribbean												
B_T	0.29	0.45	0.55	0.25	0.10	0.19	0.23	0.22	-0.04	-7.88	-0.76	1.14
CMT	0.41	0.44	0.54	0.65	0.21	0.21	0.24	0.50	-0.05	-7.42	-0.97	0.44
MIL	0.38	0.46	0.46	0.59	0.19	0.21	0.23	0.05	-0.07	-10.83	-0.34	-0.69
OFD	0.41	0.42	0.66	0.63	0.17	0.15	0.26	0.54	-0.07	-9.74	-2.85	0.68
OMT	0.42	0.45	0.60	0.64	0.21	0.22	0.24	0.61	-0.06	-8.44	-2.10	0.96
PCR	0.35	0.44	0.56	0.40	0.15	0.14	0.32	0.00	-0.10	-16.08	-0.84	-0.16
SGR	0.34	0.36	0.69	0.54	0.12	0.08	0.22	0.09	-0.10	-10.95	-5.16	-0.49
VOL	0.36	0.41	0.69	0.61	0.14	0.12	0.24	0.59	-0.11	-14.34	-5.09	1.02
MEX												
B_T	0.41	0.55	0.55	0.50	0.17	0.11	0.44	0.41	-0.04	-8.47	1.97	0.34
CMT	0.44	0.41	0.65	0.00	0.24	0.17	0.63	0.00	-0.04	-7.48	-0.18	0.52
MIL	0.41	0.47	0.36	0.12	0.27	0.32	0.31	0.04	-0.01	-7.52	6.20	-0.56
OFD	0.44	0.40	0.60	0.44	0.21	0.15	0.48	0.40	-0.05	-9.29	-0.36	0.45
OMT	0.44	0.48	0.56	0.02	0.26	0.23	0.52	0.02	-0.03	-6.54	0.09	1.38
PCR	0.57	0.50	1.00	1.00	0.30	0.26	1.00	0.00	-0.10	-13.00	-3.00	-2.00
SGR	0.50	0.00	1.00	1.00	0.09	0.00	0.50	0.13	-0.14	-16.13	-6.88	-1.75
VOL	0.35	0.05	0.87	0.96	0.08	0.02	0.26	0.91	-0.14	-17.33	-6.41	0.00
Mercosur												
B_T	0.19	0.22	0.35	0.36	0.08	0.15	0.22	0.31	-0.02	-7.63	2.26	1.24
CMT	0.42	0.42	0.46	0.74	0.21	0.19	0.37	0.57	-0.04	-9.42	2.02	-0.02
MIL	0.42	0.44	0.46	0.61	0.21	0.21	0.37	0.04	-0.06	-12.91	2.61	-0.79

OFD	0.37	0.28	0.54	0.66	0.17	0.11	0.36	0.58	-0.05	-9.58	0.50	0.60
OMT	0.40	0.42	0.51	0.60	0.21	0.19	0.39	0.57	-0.04	-10.30	1.76	0.92
PCR	0.40	0.37	0.62	0.00	0.16	0.11	0.62	0.00	-0.08	-14.88	1.50	-0.75
SGR	0.36	0.26	0.61	0.19	0.14	0.06	0.37	0.06	-0.07	-9.47	-1.91	-0.16
VOL	0.36	0.28	0.60	0.56	0.14	0.09	0.27	0.54	-0.08	-12.28	-2.77	0.55
NZL												
B_T	0.52	0.67	0.49	0.28	0.27	0.51	0.21	0.25	0.01	-0.22	1.22	0.81
CMT	0.39	0.37	0.42	1.00	0.31	0.30	0.38	0.76	0.02	1.76	2.00	-0.48
MIL	0.35	0.35	0.32	0.96	0.24	0.26	0.22	0.04	-0.04	-5.24	0.28	-1.80
OFD	0.45	0.45	0.49	0.99	0.29	0.29	0.29	0.86	0.00	-0.54	0.09	-0.16
OMT	0.36	0.36	0.36	1.00	0.28	0.28	0.28	0.96	0.01	-0.50	1.59	-0.07
PCR	0.53	0.57	0.33	1.00	0.31	0.35	0.25	0.00	-0.08	-11.00	0.00	-2.00
SGR	0.57	0.58	0.54	1.00	0.34	0.40	0.27	0.13	-0.06	-4.13	-4.63	-1.75
VOL	0.65	0.68	0.61	1.00	0.25	0.37	0.21	0.96	-0.07	-8.74	-2.80	-0.07
SouthAsia												
B_T	0.37	0.63	0.79	0.39	0.05	0.20	0.10	0.33	-0.08	-10.64	-3.08	0.39
CMT	0.47	0.60	0.84	0.38	0.14	0.15	0.10	0.28	-0.09	-13.36	-2.92	0.17
MIL	0.46	0.62	0.66	0.67	0.08	0.09	0.08	0.08	-0.16	-21.48	-4.03	-1.50
OFD	0.49	0.61	0.83	0.62	0.08	0.09	0.09	0.56	-0.11	-15.22	-4.38	0.39
OMT	0.50	0.62	0.76	0.52	0.11	0.11	0.09	0.51	-0.11	-16.09	-3.78	0.45
PCR	0.44	0.63	0.58	0.63	0.08	0.09	0.08	0.00	-0.17	-25.63	-2.88	-1.63
SGR	0.48	0.81	0.79	0.79	0.03	0.04	0.03	0.17	-0.16	-18.63	-8.13	-1.38
VOL	0.45	0.66	0.55	0.64	0.06	0.14	0.08	0.61	-0.15	-19.05	-6.43	0.33
Sub-Saharan												
B_T	0.33	0.50	0.65	0.31	0.11	0.23	0.17	0.25	-0.04	-6.85	-2.25	1.92
CMT	0.51	0.66	0.66	0.56	0.23	0.27	0.18	0.40	-0.07	-10.53	-2.39	1.09
MIL	0.52	0.66	0.68	0.62	0.20	0.24	0.17	0.04	-0.12	-17.03	-3.85	-0.27
OFD	0.41	0.52	0.72	0.55	0.15	0.16	0.17	0.48	-0.08	-10.77	-3.66	1.35
OMT	0.48	0.62	0.68	0.56	0.23	0.25	0.19	0.54	-0.08	-11.95	-3.28	1.57
PCR	0.42	0.56	0.72	0.36	0.15	0.17	0.20	0.00	-0.14	-21.18	-2.64	0.14

SGR	0.41	0.48	0.84	0.42	0.07	0.07	0.11	0.09	-0.13	-15.07	-7.34	0.00
VOL	0.38	0.47	0.85	0.42	0.11	0.16	0.15	0.40	-0.11	-14.72	-6.99	1.87
USA												
B_T	0.33	0.71	0.20	0.00	0.26	0.58	0.16	0.00	0.14	7.19	14.59	3.00
CMT	0.28	0.39	0.19	0.00	0.25	0.34	0.18	0.00	0.20	19.33	9.67	5.03
MIL	0.34	0.47	0.21	0.00	0.29	0.42	0.20	0.00	0.49	49.92	29.92	4.68
OFD	0.40	0.52	0.25	0.00	0.32	0.39	0.22	0.00	0.16	15.12	10.41	2.31
OMT	0.31	0.40	0.21	0.00	0.29	0.37	0.20	0.00	0.27	32.39	10.18	4.88
PCR	0.50	0.71	0.14	0.00	0.34	0.48	0.13	0.00	0.05	1.00	8.00	-1.00
SGR	0.48	0.70	0.25	0.00	0.33	0.51	0.17	0.00	0.06	7.13	2.13	1.00
VOL	0.42	0.53	0.26	0.00	0.29	0.36	0.19	0.00	0.03	-0.04	3.13	1.63

Source: Own elaboration based on UNCTAD NTMs Database.