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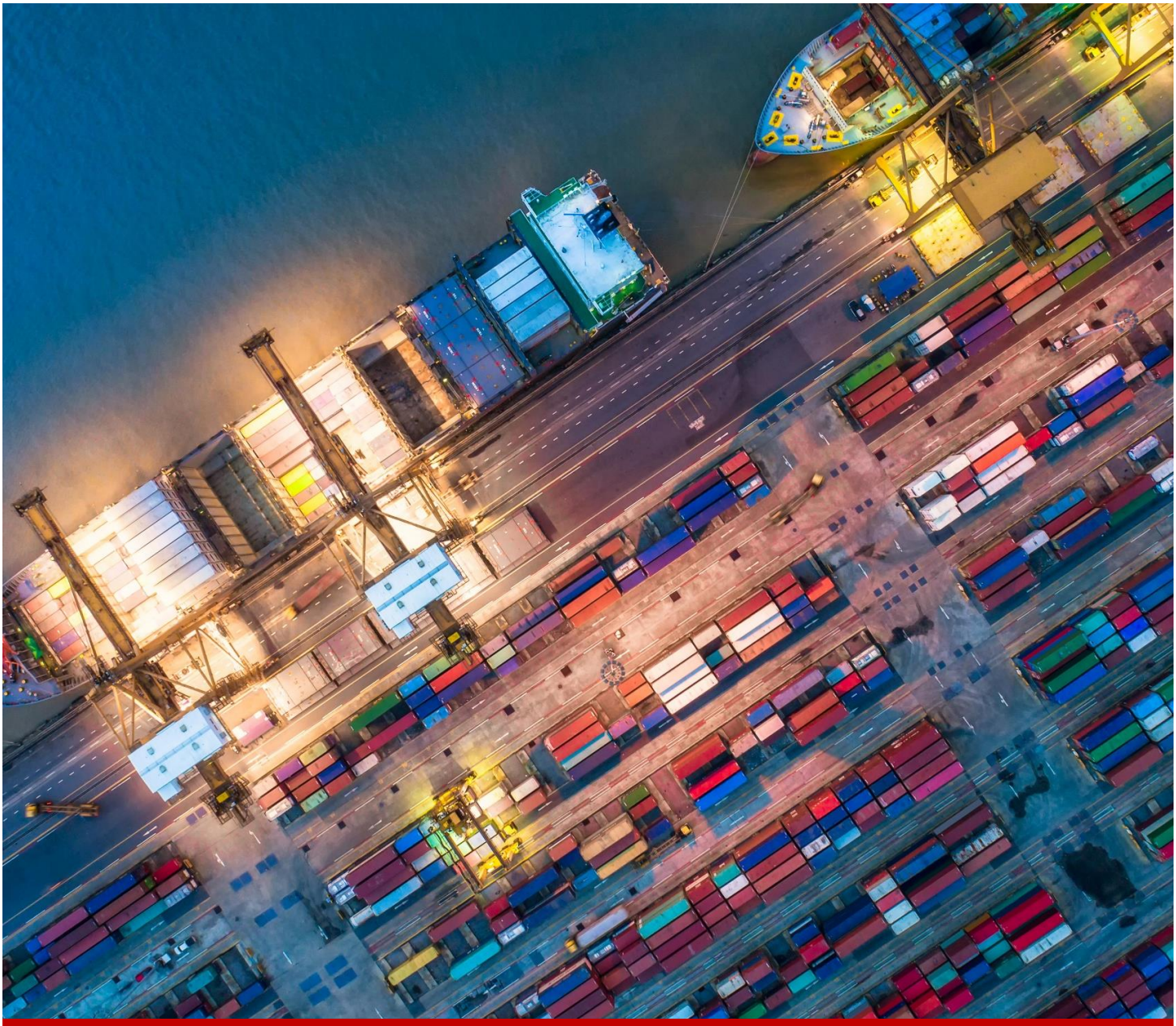

New EU-MERCOSUR Association Agreement: Quantitative Impact Assessment of the liberalization through Tariff Rate Quotas

Antonia Ngavozafy, David Suarez-Cuesta and Maria C. Latorre

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1. INTRODUCTION

On 15 July 2021, the European Commission made publicly available the tariff elimination schedules of the Association Agreement between the European Union (EU) and Mercosur countries, a mega-regional trade agreement that were concluded on 28 June 2019.

On the one side, Mercosur or the Southern Common Market (Mercado Común del Sur in Spanish or Mercado Comum do Sol in Portuguese) is a regional economic community (REC) that groups four[1] Latin American countries, namely Argentina, Brazil, Paraguay and Uruguay since 1991. Although the region applies a common nomenclature and a common external tariff[2], Mercosur has not yet achieved the status of a customs union. Indeed, intra-Mercosur trade is also governed by a set of partial trade agreements. On the other side, the European single market (EU) is composed of 27 countries and forms one territory where goods and services can be traded freely without any tariffs or regulatory barriers.

Together, the EU-Mercosur region accounts for 23% of the world GDP and opens a market of 9% of the world population or 714 million of people with GDP per capita ranging between 9,742 USD and 37,100 USD in 2019 according to statistics from the World Development Indicators. Exchanges between them are significant and bear immense potential. In the trade in goods alone for example and based on trade data extracted from Trade Map, Mercosur countries imports 247 billion USD and exports 304.6 billion USD worth of goods in 2019, whereas the EU's imports and exports of commodities amounted respectively to 5,370 billion USD and 5,640 billion USD the same year. Accordingly, the EU-Mercosur Association Agreement will bring about the second biggest trade-bloc ever created[3].

Tariffs barriers between Mercosur and EU countries are in average high with peaks in some sectors. EU27 applies an average tariff of 4.2%, while Argentina, Brazil, Paraguay and Uruguay apply 11.6%, 10.1%, 7.2% and 9.7%, respectively. In fact, trade between the two regions mostly happens under the Most-Favoured Nation (MFN) regime.

The current EU-Mercosur Association Agreement (EU-Mercosur AA) has three components: trade, political dialogue, and economic cooperation. Our study focuses on the trade pillar of the agreement, which draws our interest because of the systemic implications it may have on global trade of goods and services, particularly on the agricultural market.

Tariff reductions under the EU-Mercosur AA often take the form of linear cuts where both Parties will eliminate or reduce base rates in equal stages from the date of entry into force until the final years of implementation. Tariff-rate quotas (TRQ), either reciprocal or transitional, and specific treatments for some sensitive agri-food products are exceptions to these staging. Although they concern relatively smaller number of national tariff line, liberalization through TRQ is a key element of the EU-Mercosur AA.

On one hand, Mercosur countries do not grant market access to EU27 through TRQ under any regime. However, they will open two categories of TRQ, transitional and reciprocal TRQs, on sensitive and strategic commodities to their European counterpart once the agreement comes into effect. On the other hand, the EU currently grants TRQ to Mercosur countries under the World Trade Organization

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[1] Venezuela's memberships and rights are suspended.
[2] The common external tariff does not apply to certain industries: cars, sugar, textiles, etc.
[3] The Regional Comprehensive Economic Partnership (RCEP) accounts for 30% of world GDP and 30% of world population.

(WTO) regime, with country-specific reserved quantity. When the EU-Mercosur AA will apply, the EU will concede preferential TRQ, both transitional and reciprocal, to its American counterparts.

Our paper consists of a comprehensive study of the liberalization mechanism undertaken through TRQ under the EU-Mercosur AA. It also describes in detail the methodology used to estimate the ad valorem equivalent tariffs of TRQ used by Ngavozafy and Latorre (2021) [4]in their quantitative assessment the impact of EU-Mercosur AA on global trade in agricultural commodities. Finally, our paper also zooms in the results of the Computable General Equilibrium (CGE) simulations by Ngavozafy and Latorre (2021) for the impacted sectors.

To evaluate the impacts of the EU-Mercosur AA, we use a standard Computable General Equilibrium (CGE) model with 8 regions, including Mercosur4, EU27, the United States and China, and 36 sectors aggregated from the GTAP10 sectoral and regional classifications, which incorporate NTMs and TRQ.

We experiment the CGE model for a baseline scenario (a world without EU-Mercosur) and for FTA scenarios where the treaty is implemented at different points in time: on the date of entry into force, five, ten, and 15 years later. The quantitative impacts of the agreement are obtained by comparing the projections under the baseline and the FTA scenarios.

Our results show that [WILL BE ADDED].

The remainder of this paper is organized as the following. Section 2 sets the background. Section 3 presents a review of the most relevant literature related to the modelling TRQ in CGE models and describes our model and simulation strategies. In section 4, we present and discuss our results. Finally, section 6 concludes.

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2. BACKGROUND

2.1. Economics of Tariff Quota

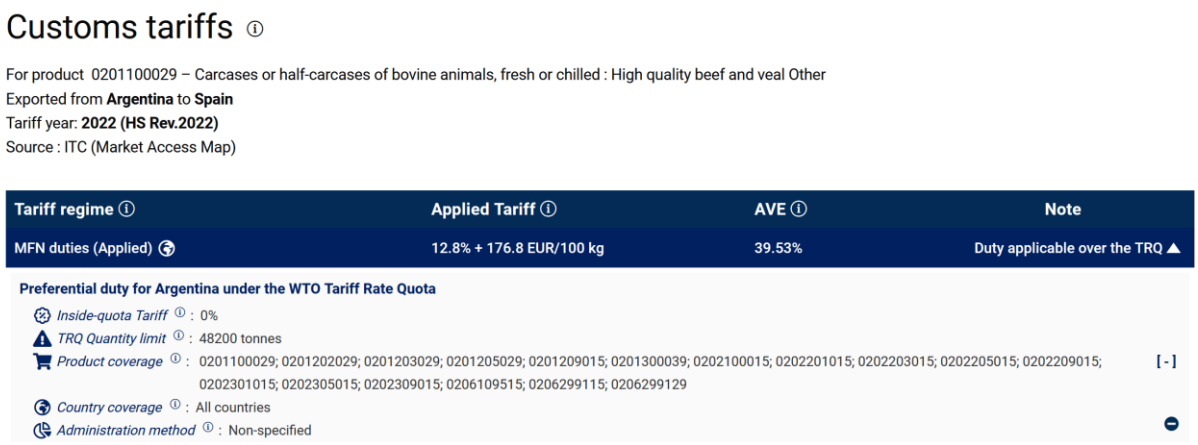
Tariff Quota (TQ) is a trade policy instrument introduced for the first time at the Uruguay Round Agreement on Agriculture (URAA). TQ is designed to enhance market access of traded goods, mostly agricultural commodities, which were subject to stringent measures such as highly prohibitive tariffs or quantitative restrictions (absolute quotas).

David W. Skully (2001) defines Tariff Quotas (TQ) as a "two-tiered tariff", where "in a given period, a lower in-quota tariff (t) is applied to the first Q units of imports and a higher over-quota (T) is applied to all subsequent imports." In this sense, TQ differs from absolute quota, also known as quantitative restriction, because the former does not limit the entry of the commodities when the quota volume is filled. Therefore, TQ generates a rent stemming from the opportunity to import inside the TQ at a lower cost.

Tariff Quotas have both tariff and non-tariff components. The tariff part can be ad valorem, specific, mixed, compound or technical (Figure 1), hence the term "Tariff Quota" is technically more accurate than "Tariff-rate Quota" although we use both phrases interchangeably in this paper. The non-tariff components consist of the volume/quantity limit also called contingent, the administration method as well as the product and partner-country coverage. Table 1 summarizes the main components of a TQ.

[4] New EU-MERCOSUR Association Agreement: Quantitative assessment of its Impacts on Global Trade in Agricultural Commodities. Antonia Ngavozafy and Maria C. Latorre (2021).

Figure 1: Tariff Quota applied by the European Union on high quality beef and veal carcases from Argentina[5]



Moreover, TQ impacts the willingness to imports and its effects on trade depends on the excess demand for imports. Decreux and Ramos (2007) named three regimes:

- The in-quota regime, when imports (M) < Q and IR applies, then quota is not binding;
- The at-quota regime, when M = Q and IR applies, then quota is binding and the equilibrium price includes a prime over the IR;
- The out-of-quota regime, when M > Q and OR applies, then quota is no longer binding.

Finally, the TQ administration methods (MA) affect the volume of trade and the distribution of the TQ rent (David W. Skully (2001)). In fact, MA should not create a barrier to imports other than the cost related to the in-quota tariff. On this basis, market methods, such as auctioning are the most efficient while historical allocation are the least desirable.

Table 1: Components of a Tariff Quota

TQ component	Definition	Example[6]
In-quota Tariff (IQTR)	The in-quota tariff, aka inside-quota tariff, is the customs duty applicable to any products imported before the quantity limit is filled.	0%
Over-quota Tariff (OQTR)	The over-quota tariff, aka outside-quota tariff, is the customs duty applicable to any products imported after the quantity limit is filled.	12.8% + 171.3 EUR/100 kg equivalent to 44.33% AVE
Quantity limit (Q)	The quota quantity limit, aka quota volume or contingent. Until this specific quantity of goods is reached, the in-quota tariff applies. Once the contingent is filled, the product can continue to be imported	23,000,000 kilogrammes

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[5] Source: ITC Market Access Map (May 2022), https://www.macmap.org/en//query/results?reporter=724&partner=032&product=0201100029&level=8

[6] Source: ITC Market Access Map (May 2022), https://macmap.org/en//query/results?reporter=724&partner=032&product=0204100090&level=8

	without limitation, but at a higher tariff which is the outside-quota tariff rate.	
Opening period (OP)	The period during which imports are allowed under the TQ mechanism.	Not specified
Country coverage (CC)	The list of countries that can claim an allocation or a portion of the TQ.	All countries
Product coverage (PC)	The list of products eligible for the TQ.	34 NTLC
Administration method (MA)	The method used to manage the TQ allocation. The WTO identifies seven principal methods of TQ administration[7].	First-come, First-served (FC)

2.2. Tariff Rate Quota in the EU-Mercosur Association Agreement

Under the EU-Mercosur AA, tariff reductions often take the form of linear cuts where both Parties will eliminate or reduce base rates in equal stages from the date of entry into force until the final years of implementation. Tariff-rate quotas (TRQ), either reciprocal or transitional, and specific treatments for some sensitive agri-food products are exceptions to these staging. Transitional TRQs are in place pending liberalization while reciprocal TRQs remain in application as long as the agreement is active. Specific treatments for agri-food commodities, especially for the EU27, include the non-elimination of the entry price system and the non-ad valorem and agricultural components of the customs duty.

To date, no Mercosur country grants market access to EU27 through TRQ under any regime. Once the agreement will enter into force, Mercosur will open two categories of TRQ to their European counterpart: transitional and reciprocal TRQs. Transitional TRQs concern motor vehicles, sugar confectionery and chocolate and other food preparations containing cocoa, and tomatoes prepared or preserved otherwise than by vinegar or acetic acid (whole or in pieces). Contingents under this category of TRQ are phased out while both the inside- and outside-quota duties are eliminated gradually over the implementation periods. Additionally, Mercosur countries will operate the liberalization of products such as powdered milk, cheese, infant formula and garlic through reciprocal system of preferential TRQ. Access quantities are gradually increased over the implementation period then stay in application as long as the agreement is active or unless being renegotiated. Inside-quota tariffs are phased in 11 stages while the outside-quota tariffs stay at the base rates. Table 2 summarizes the liberalization scheme through TRQ in Mercosur's concession list.

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[7] See also Annex 1. Table 1.

Table 2: Mersosur's TRQ concession schedule

Mercosur's TRQ concession under the EU-Mercosur Association Agreement	Number of HS8 code affected (NCM 2012)	Category of TRQ
A quota of 30 000 t for **cheeses**, with in quota duties and volumes phased out/in over a 10 year period	8	Reciprocal TRQ
A quota of 30 000 t for **cheeses**, with in quota duties and volumes phased out/in over a 10 year period /E	8	Reciprocal TRQ
A quota of 5 000 t for **infant formula,** with in quota duties and volumes phased out/in over a 10 year period	3	Reciprocal TRQ
A quota of 10 000 t for **milk powder**, with in quota duties and volumes phased out/in over a 10 year period	1	Reciprocal TRQ
An quota of 50 000 units distributed across Mercosur countries for **motor vehicles**, with in-quota duties and out-quota duties phased out over a 9 year period.	10	Transitional TRQ
Quotas of 4760 tons and 17640 tons for **chocolates**, with in-quota duties and volumes phased out/in over a 9 year period.	2	Transitional TRQ
Quotas of 2030 tons, 150 tons and 4380 tons for **white chocolates, chocolate powder and preparations**, with in-quota duties and volumes phased out/in over a 14 year period.	6	Transitional TRQ
A quota of 15000 tons for **garlic**, with in-quota duties phased out in 7-year period and increasing contingent	1	Transitional TRQ
A quota of 7500 tons for **preserved tomatoes**, with in-quota duties phased out in 9-year period.	1	Transitional TRQ

Source: New EU-Mercosur trade agreement , The agreement in principle, published on 1 July 2019

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As of 2021, the EU grants TRQ to Mercosur countries under the WTO regime and bilaterally. The WTO TRQ cover products such as lamb and goat meat, high quality beef and veal, high quality bovine meat, poultry and preparation of poultry, garlic, or raw cane sugar[8]. Data from the EU tariff quota consultation database[9] in 2020 show that TRQ balance did not exceed the initial allocation in most TRQ. When the EU-Mercosur agreement will begin to apply, the EU will concede preferential TRQ, both transitional and reciprocal, to its American counterparts. Reciprocal TRQ concern comparable products as in Mercosur's concession, while transitional TRQ cover a wider range of sensitive agricultural products such as meat products, cereals, honey, sugar or ethanol[10]. In the case of the EU concession, contingent of transitional TRQ are phased out over the transitory period, then stay in application as long as the agreement is active. Additionally, the inside-quota duties are phase-in while the outside-quota tariffs remain at the base rate or reduced by some preferential margin. As a result, products subject to TRQ in the EU concession list (317 hs8 code) will not be fully liberalized at the end of the

[8] The EU TRQ allocation by product group and Mercosur country are listed in Annex 4
[9] https://ec.europa.eu/taxation_customs/dds2/taric/quota_consultation.jsp?Lang=en
[10] An exhaustive list of EU TRQ concession is summarized in the Annex 5

implementation period. Current EU's TRQ opened for Mercosur is summarized in Table 3 and EU's concession through TRQ is summarized in Table 4.

Table 3: Current TRQ access to the EU for Mercosur countries

Product group	Beneficiary	Quota Volume (Tonne)
Lamb and goat meat (bone in)	Argentina	17006
Lamb and goat meat (bone in)	Uruguay	4759
Lamb and goat meat (boneless)	Argentina	33949
Lamb and goat meat (boneless)	Uruguay	9518
High quality beef and veal (bone-in)	Argentina and Uruguay	48200
Buffalo meat (Boneless)	Argentina	200
Poutlry ("70% chickens and "65%" chickens)	Argentina and Brazil	6249
Poultry (Boneless, Frozen)	Argentina and Brazil	2305
Garlic	Argentina	13700
Poultrymeat (salted or in brine)	Brazil	170807
Preparation of poultry, turkey and other fowls meat or offal	Brazil	579192
Raw cane sugar	Brazil	412054
Dried birds' eggs	Argentina	7000
Frozen cuts and breasts of fowls of the species Gallus domesticus	Brazil	9432
Frozen cuts and breasts of fowls of the species Gallus domesticus	Argentina	3300
Frozen cuts, halves and quarters of turkey (bone-in and boneless)	Brazil	4285
Fresh,chilled, frozen bovine meat, thick and thin skirt (High quality	Argentina	30700
Fresh,chilled, frozen bovine meat, thick and thin skirt (High quality	Uruguay	6300
Fresh,chilled, frozen bovine meat, thick and thin skirt (High quality	Brazil	10000
Fresh,chilled, frozen bovine meat (High quality)	Paraguay	1000

Source: Aggregated data from ITC Market Access Map (https://macmap.org) and EU Tariff Quota Consultation Database (https://ec.europa.eu/taxation_customs/dds2/taric/quota_consultation.jsp?Lang=en), accessed april 2021

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Table 4: EU's TRQ concession schedule

EU's TRQ concession under the EU-Mercosur Association Agreement	Number of HS8 code affected (CN2013)	Category of TRQ
A quota of 54 450 t (cwe – carcass weight equivalent) for **fresh beef,** phased in in six equal stages, with in-quota duty of 7.5%.	7	Transitional TRQ
A quota of 44 550 t (cwe) for **frozen beef, including for processing**, phased in in six equal stages, with in-quota duty of 7.5%.	15	Transitional TRQ
A quota of 30 000 t for **cheeses**, with in quota duties and volumes phased out/in over a 10 year period	43	Reciprocal TRQ
A quota of 30 000 t for **cheeses**, with in quota duties and volumes phased out/in over a 10 year period /E	1	Reciprocal TRQ
A quota of 3 000 t (egg equivalent) for **egg products**, phased in over six equal stages, duty-free	5	Transitional TRQ
A quota of 3 000 t (egg equivalent) for **egg albumins**, phased in over six equal stages, duty-free	2	Transitional TRQ
A quota of 650 000 t for **ethanol**, phased in in six equal stages. 450 000 t of this quantity are reserved for the chemical industry, duty-free. For the remaining 200,000 t, the in-quota duty for the undenatured ethyl alcohol imported under sub-heading 2207.10 and tariff items 2208.90.91 and 2208.90.99 is 6.4 €/hl. The in-quota duty for the denatured ethyl alcohol imported under sub-heading 2207.20 is 3.4 €/hl.	4	Transitional TRQ
A quota of 15 000 t for **garlic**, with in quota duties and volumes phased out/in over a 7 year period	1	Transitional TRQ
A quota of 45 000 t for **honey** phased in over six equal stages, duty free	1	Transitional TRQ
A quota of 5 000 t for **infant formula,** with in quota duties and volumes phased out/in over a 10 year period	1	Reciprocal TRQ
A quota of 1 000 000 t for **maize** phased in in six equal stages, duty free	4	Transitional TRQ
A quota of 10 000 t for **milk powder**, with in quota duties and volumes phased out/in over a 10 year period	13	Reciprocal TRQ
A quota of 2 000 t for **other sugars** (Headings 1702 and 1806) with a 50% MFN tariff preference	16	Transitional TRQ
A quota of 25 000 t (cwe) for **fresh and chilled, frozen and prepared pigmeat** phased in in six equal stages. The in-quota duty shall be 83 €/t	42	Transitional TRQ
A quota of 90 000 t (cwe) for **boneless poultry meat, including poultry preparations,** phased in in six equal stages, duty free	25	Transitional TRQ
A quota of 90 000 t (cwe) for **bone-in poultry meat** phased in in six equal stages, duty free	85	Transitional TRQ
A quota of 60 000 t for **rice** phased in in six equal stages, duty free	32	Transitional TRQ
A quota of 2 400 t (pure alcohol equivalent) for **rum** in bulk, phased in over six equal stages, duty free,	2	Transitional TRQ
A quota of 1 000 t for **sweetcorn**, duty free	3	Transitional TRQ
A quota of 1 500 t for **maize starch and manioc starch** with a 50% MFN tariff preference (83 €/t)	2	Transitional TRQ
A quota of 600 t for **starch derivatives**, phased in in six equal stages, duty free	11	Transitional TRQ
A quota of 10 000 t for **sugar for refining** for Paraguay, duty free + lowering the in-quota of the EU WTO quota for Brazil from 98 €/t to zero for 180 000 t	2	Transitional TRQ

Source: New EU-Mercosur trade agreement , The agreement in principle, published on 1 July 2019

3. Model and Assessment strategy

3.1. Literature review

David Skully (2001) gave an easy-to-read introduction to the concept of TQ. The study is a cornerstone literature in the matter.

On the question of how to include TQ in a model, several studies have developed more and less elaborate strategies. Guyomard et al (2005) are the first to categorize methods to calculate ad valorem equivalent (AVE) of TQ, which are the market model estimations and the empirical price gap method. They also calculated ad valorem equivalent estimates (AVEs) of TQ through market model estimations using a single-commodity, multi-country partial equilibrium model to assess the effects of TQ on the EU banana market, assuming perfect competition. They assumed that the "unexplained" price gap[11] correspond to either the quota rent, or other "unexplained" margin not linked to TQ.

Replicating actual market behaviour when TQ apply remains limited in Computable General Equilibrium (CGE) models although many have tried. Döbeling and Pelikan (2019) addressed how AVEs of TQ calculation was done in Market Access Map (MAcMap) Database[12] which provides pre-calculated AVEs of TQ that can be directly incorporated in models. They also explained other correct and incorrect ways to estimates AVEs of TQ. Decreux and Ramos (2007) include bilateral TQs in a MIRAGE CGE model when running a scenario of bilateral trade agreement between the EU and Mercosur. They model TQ as bilateral TQs at the HS6 level to address some shortcomings of TQ modelling in CGE such as the possibility to capture policy changes and the allocation of TQ rents among exporters and importers. TQ are also modelled at an agreggate level in some GTAP (Elbehri and Pearson, 2000; Berrettoni and Cicowiez, 2002) and LINKAGE (van der Mensbrugghe, 2001; Van der Mensbrugghe et al., 2003) models. This strategy has the advantage of allowing a distribution of quota-rents among importers and exporters.

Our study opts for a market model estimation of the AVEs of TQ. Moreover, we conducted the estimation at the detailed tariff line level. We also make the assumption that all TQ rents accrue to exporters.

3.2. Model

To evaluate the impacts of the EU-Mercosur AA, we use a standard Computable General Equilibrium (CGE) model with 8 regions (Table 5) and 36 sectors (Table 6) aggregated from the GTAP10 sectoral and regional classifications, which incorporate TRQ. A standard CGE model consist of a before-after comparison of an economy when a shock, in this case the decrease of trade protection measures induced by the trade agreement, causes it to reallocate its productive resources in more or less efficient ways. Thanks to this model, we can tell which countries will be the ultimate winners and losers from the implementation of the EU-Mercosur AA and how the volume of trade will vary.

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[11] "unexplained price gap = CIF price – FOB price – Tariff – (estimated insurance, freight and other insurance)
[12] The methodology is detailed here https://macmap.org/en/about/methodology

Table 5: Regional Aggregation

No.	GTAP_code	Description
1	EU_27	European Union without the UK
2	BRAZIL	Brazil
3	ARGENTINA	Argentina
4	URUGUAY	Uruguay
5	PARAGUAY	Paraguay
6	USA	United States
7	CHINA	China
8	ROW	Rest of the World

Table 6: Sectoral Aggregation

No.	String	Code	Description	Group	Aggregated from GTAP sectors
1	c_cer	CER	Cereals	Agricultural and agro-industry products	1, 2, 3, 5, 23
2	c_v_f	V_F	Vegetables, fruits, nuts	Agricultural and agro-industry products	4
3	c_sgr	SGR	Sugar	Agricultural and agro-industry products	6, 24
4	c_ocr	OCR	Plant & animal fiber, others	Agricultural and agro-industry products	7, 8, 12, 14
5	c_cmt	CMT	Bovine and other rumiant meats	Agricultural and agro-industry products	9, 19
6	c_oap	OAP	Other animal products	Agricultural and agro-industry products	10
7	c_mil	MIL	Dairy products	Agricultural and agro-industry products	22
8	c_frs	FRS	Forestry	Agricultural and agro-industry products	13
9	c_gas_	GAS	Gas, coal, oil extraction or distribution	Manufacturing	15, 16, 17, 18, 47
10	c_omt	OMT	Live animals, meat and animal products	Agricultural and agro-industry products	20
11	c_vol	VOL	Vegetable oils and fats	Agricultural and agro-industry products	21
12	c_ofd	OFD	Food products nec	Agricultural and agro-industry products	25
13	c_b_t	B_T	Beverages and tobacco products	Agricultural and agro-industry products	26
14	c_tex	TEX	Textiles	Manufacturing	27
15	c_wap	WAP	Wearing apparel	Manufacturing	28
16	c_lea	LEA	Leather products	Manufacturing	29
17	c_l_p	L_P	Wood products	Manufacturing	30, 31
18	c_pch	PCH	Petroleum, coal and other chemical products	Manufacturing	32, 33
19	c_bph	BPH	Pharmaceutical products	Manufacturing	34
20	c_rpp	RPP	Rubber and plastic products	Manufacturing	35
21	c_omf_	OMF	Other manufactures	Manufacturing	36, 45
22	c_mmp	MMP	Metals and metal products	Manufacturing	37, 38, 39
23	c_elq	ELQ	Electronic products	Manufacturing	40
24	c_oma	OMA	Other machinery	Manufacturing	41, 42
25	c_mvh	MVH	Motor vehicles and parts	Manufacturing	43
26	c_otn	OTN	Transport equipment	Manufacturing	44
27	c_ose	OSE	Other services	Services	48,50,52,55,62,63,64,65
28	c_cns	CNS	Construction	Services	49
29	c_afs	AFS	Hotels and Restaurants	Services	51
30	c_wtp	WTP	Maritime Transport	Services	53
31	c_atp	ATP	Air Transport	Services	54
32	c_cmn	CMN	Communication	Services	56
33	c_ofi	OFI	Banking	Services	57
34	c_ins	INS	Insurance	Services	58
35	c_obr	OBR	Business Services	Services	59, 60
36	c_ros	ROS	Personal Services	Services	61

3.3. Experiment design and simulations

We experiment the CGE model for a baseline scenario (a world without EU-Mercosur) and for FTA scenarios where the treaty is implemented at different points in time: on the date of entry into force (assumed to be in 2022), five, ten, and 15 years later. Shocks stem from the tariff reduction. The quantitative impacts of the agreement are obtained by comparing the projections under the baseline and the FTA scenarios.

3.3.1. Construction of the tariff reduction schedules

We construct the tariff reduction schedules of both parties under the EU-Mercosur AA by combining information extracted from the "EU-Mercosur trade agreement: The Agreement in Principle and its texts"[13] published by the European Commission on 1 July 2019 and the detailed tariff offers made publicly available by Argentina[14]. For each NTLC, preferential tariffs applicable each year result from the dismantling of the base duties according to the corresponding staging categories. Both ad valorem (AV) and non-ad valorem (NAV) duties are phase-in accordingly. When NAV duties apply, we compute the ad valorem equivalent (AVE) of the staged tariffs following the World Tariff Profile Methodology[15] i.e., using unit values, taking 2014 as a reference year.

To evaluate the extent of TRQ, we opt for an estimation of their AVE for each of the NTLC impacted and consider three possible equilibria situation:

- Regime-1: Demand with supply below the quota;
- Regime-2: Demand with supply at the quota;
- Regime-3: Demand with supply over the quota.

In regime-1, the AVE is equal to the IQTR, in regime-3 it is equal to the OQTR, and in regime-2 it is equal to the IQTR plus a quota premium that depends on the quota administration method. The AVE of the staged rates at the NTLC are first aggregated at the HS6 level by simple average, then aggregated at the model sectoral level using GTAP-10 methodology using three-year (2012,2013,2014) bilateral imports average as weight.

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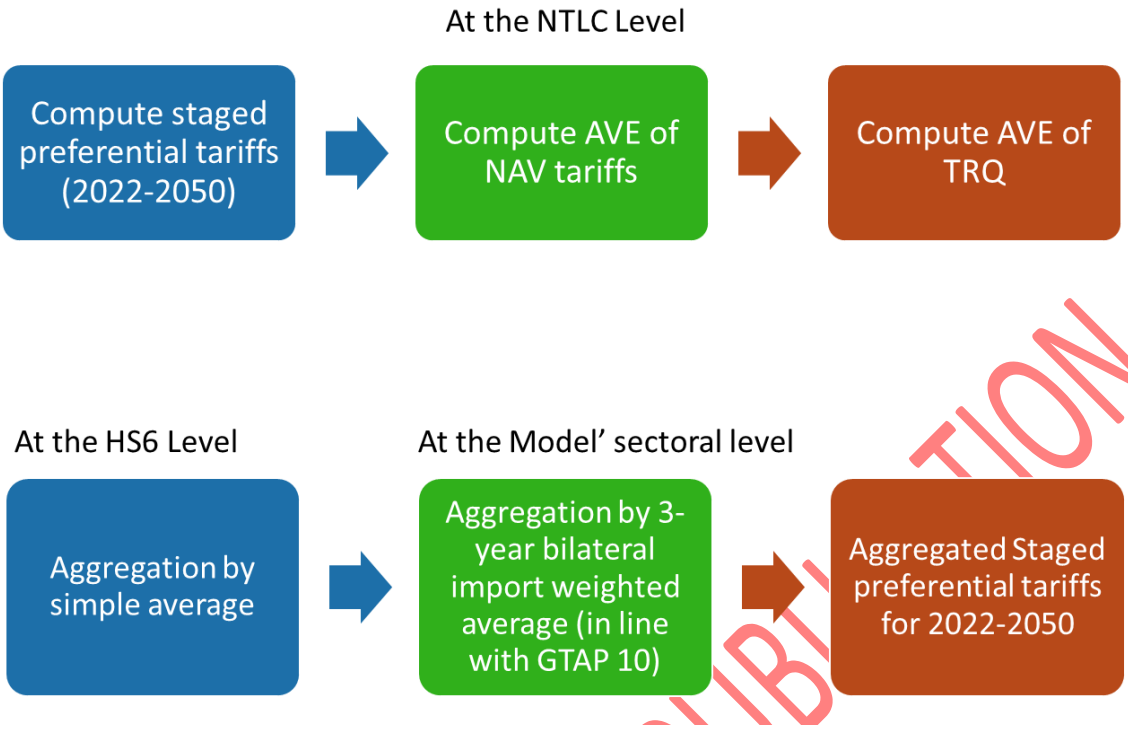
[13] https://trade.ec.europa.eu/doclib/press/index.cfm?id=2048
[14] https://www.cancilleria.gob.ar/en/node/101016
[15] World Tariff Profile 2006, Technical Annexes A-C, pp. 179-204. (https://www.wto.org/english/res_e/publications_e/world_tariff_profiles06_e.htm)

Figure 2: Construction of tariff reduction schedules



Source: Antonia Ngavozafy and Maria C. Latorre (2021)

4. RESULTS

4.1. TRQ regimes throughout the implementation of EU-Mercosur AA

From the three possible equilibria situation, regime-1 and regime-3 appear throughout the implementation of the EU-Mercosur AA in the schedules of both parties.

In Mercosur'schedule tariff-quotas on most products fall in the regime-1, below the quota. The quota opened for cheese, milk powder and chocolates and preparations containing cocoa exceed the demand of those products in 2019 from the first two years of implementation of the agreement. Therefore, the quota is not binding. As a result, the AVEs equal the inside-quota tariffs. Since the inside-quota tariffs on these commodities are gradually reduced to become duty-free from year-9 onwards, these products will be fully liberalized.

However, some TQ in Mercosur'schedule fall in the over-quota regime (Regime-3). That is the case for the quotas on garlic (HS 070320), white chocolates (HS 170490), and preserved tomatoes (HS 200210). Demands on these group of products exceeds the opened quota, even at the end of the implementation period. Although the quota volume of garlic is for example increasing from 2 143 tons to 15 000 tons in seven years, the contingents are still below the demand (17314 tons in 2019). Therefore, the AVEs of these products are equal to the outside-quota tariffs (OQTR). Additionally, the OQTR on garlic remain at the base rate of 25% during the implementation period so there is no effective liberalization. Regarding white chocolates and preserved tomatoes, their effective liberalization happens from year-14 and year-9 respectively, when the OQTR become duty-free.

Finally, commodities such as Infant formulas and filled chocolates switch regimes throughout the implementation period. The quota volume on Infant formulas grows from 500 to 5000 tons with an increment of 500 tons in 10 years. Regime-1 applies until the opened quota is below Mercosur's annual demand of 3168 tons. The quota is not binding, AVE is the OQTR at 16%. As soon as the quota volume

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becomes higher than Mercosur's annual demand of infant formulas, the quota regime switches to regime-3, over the quota, and the AVE is the IQTR, which gradually decreases to become free by year-10. Filled chocolates show a similar pattern with an effective liberalization starting from year-9.

In the European Union' schedule, the quota regimes vary depending on the type of commodities and their sensitivities for the EU market. The Tariff quotas on bovine meat (HS 0201), meat offal (HS 0210), maize (HS 1005), rice (HS 1006), maize and potato starch (HS 110812 and HS 110814), meat preparations such as ham (HS 16024*, 160250, 160290), cane sugar (HS 170113 and HS 170114), and rum and spirits (HS 220840) fall under the over-quota regime (regime-3). The demands on these commodities exceed the opened tariff quota. As a result, the AVEs are equal to the OQTR. Additionally, because the OQTR remain at the base rates for all of the cited commodities, there is no effective liberalization on those products which are already subject to very high tariffs.

The liberalization is effective from the day the agreement enters into force (year-0) for swine meat (HS 0203), fresh or chilled bovine offal (HS 020610), other frozen bovine offal (HS 020629) and fat (HS 020990). The demands on those products are lower than the opened quota so that the IQTR apply as the AVE and the TQs are not binding. The resulting preferential margins are significant: between 0.24 pp and 1.32 pp.

The TQ are not also binding for powdered milk (HS 040210 and 040221), cheese (HS 0406*) and eggs (HS 0408*). The AVEs are the IQTR. In fact, the quota regime is regime-3 below the quota as the demands are far lower than the opened contingents. For example, the EU commits to open a quota of 30000 tons on cheese while its current demand from Mercosur is merely 17.2 tons. Additionally, the IQTR on powdered milk, cheese and eggs will be gradually reduced to zero in nine instalments from the day the agreement enters into force. Liberalization could be effective.

Tariff quotas on the remaining products i.e., poultry meat and offal, natural honey (HS 040900) and garlic (070320) go through regime-1 then regime-3 during the implementation period. For instance, EU's annual demands of poultry meat and offal (HS 0207) from Mercosur of 65 286 tons exceed the opened quota for the first four years, during which the AVEs are equal to the OQTR (= base tariffs) and the quota volume accrues from 15 000 tons to 60 000 tons. From year-4 onwards, the contingent keeps on growing from 75 000 tons up to 90 000 tons. Therefore, the AVE is equal to the IQTR of 0% from year-4 onwards, making the liberalization effective. The AVEs for natural honey (HS 040900) equal to the OQTR (17.3%) in year-0 and year-1 and the contingents are 7 500 tons and 15 000 tons.

The evolution of TRQ regimes throughout the implementation of the EU-Mercosur AA in the schedules of the EU and Mercosur is summarized in figure 1 to 9 in the Annex 1.

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4.2. CGE results

Welfare and GDP impact

Table 7 reports the relative changes in the real GDP compared to the baseline on the day the agreement enters into force (EIF) assumed in 2022 and 15 years later (EIF +15).

As soon as the agreement enters into force, their GDP relatively increases for Mercosur countries but remain constant for the European Union. The agreement has no significative effects on the GDP of third countries.

As the liberalization goes deeper 15 years later (EIF +15) and tariffs reduced further, the impacts on real GDP are stronger. Among the parties to the treaty, Uruguay appears to be greatest beneficiary with 0.88% increase of its real GDP. In the opposite, the EU27 does gain much from the EU-Mercosur

AA in relative terms. However, EU27's gain is still sizeable in monetary values. In fact, the EU is expected to gain 3.8 billion USD in real GDP when the agreement is implemented.

Table 7: Percentage change in real GDP due EU-Mercosur AA

Changes in real GDP (in percent) due to EU-Mercosur AA

Country	At EIF (2022)	At EIF +15 years (2037)
EU_27	0	0.02
Brazil	0.05	0.34
Argentina	0.04	0.36
Uruguay	0.07	0.88
Paraguay	0.04	0.18
United States	0	0
China	0	0
Rest of the World	0	0.01

Note: Results report GTAP qgdp
Source: Authors' CGE modelling results using GTAP10 database

Table 8: Changes in real GDP due to the EU-Mercosur AA

Changes in real GDP (in USD millions) due to EU-Mercosur AA

Country	At EIF (2022)	At EIF +15 years (2037)
EU_27	247	3790
Brazil	1339.25	8858
Argentina	247.38	2117.5
Uruguay	44.23	524.74
Paraguay	12.76	56
United States	-4	-74
China	12	178
Rest of the World	110	1716

Note: Results report GTAP qgdp
Source: Authors' CGE modelling results using GTAP10 database

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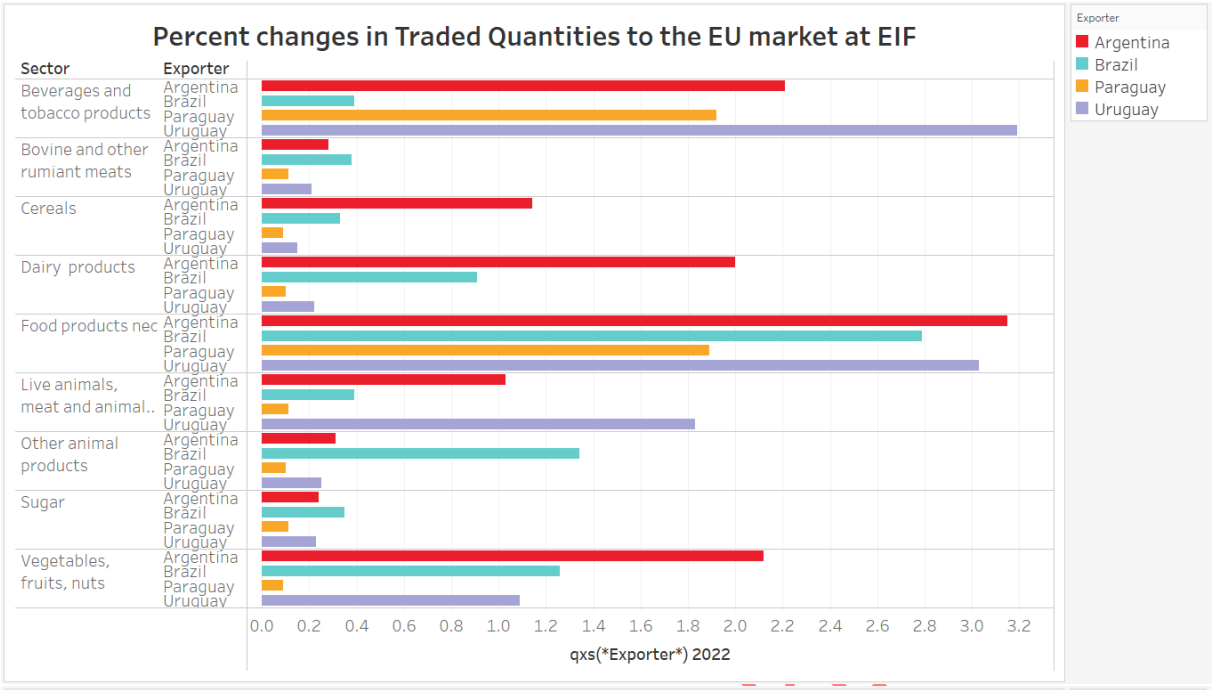
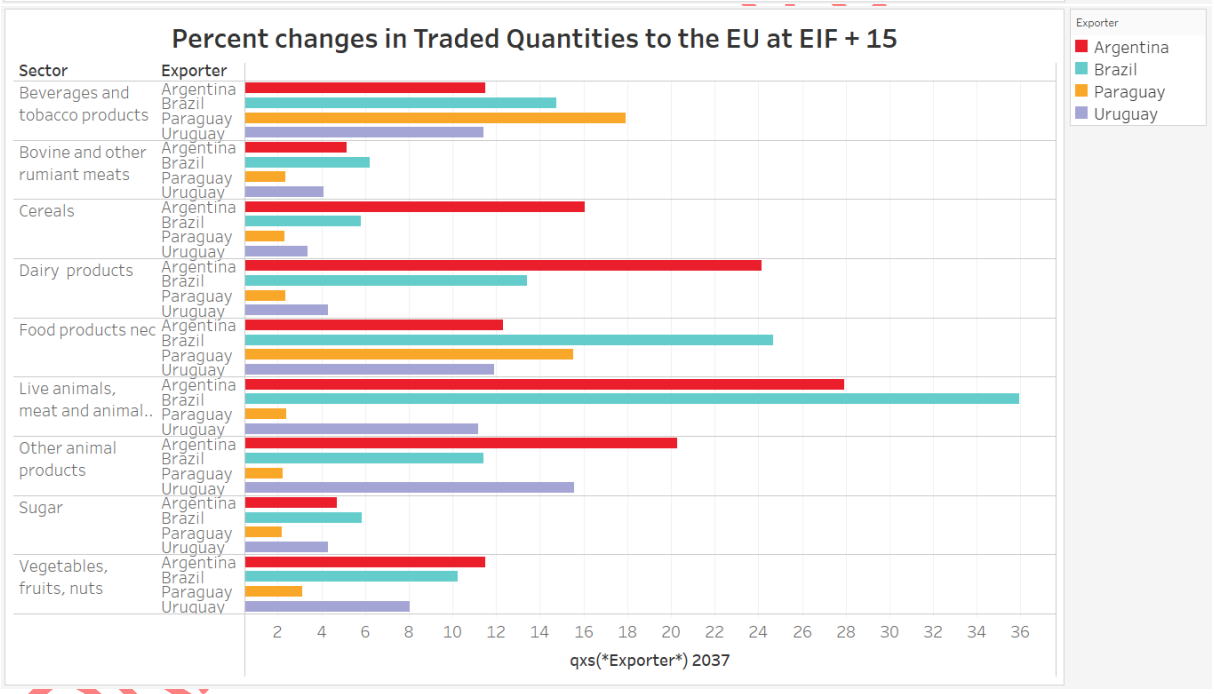
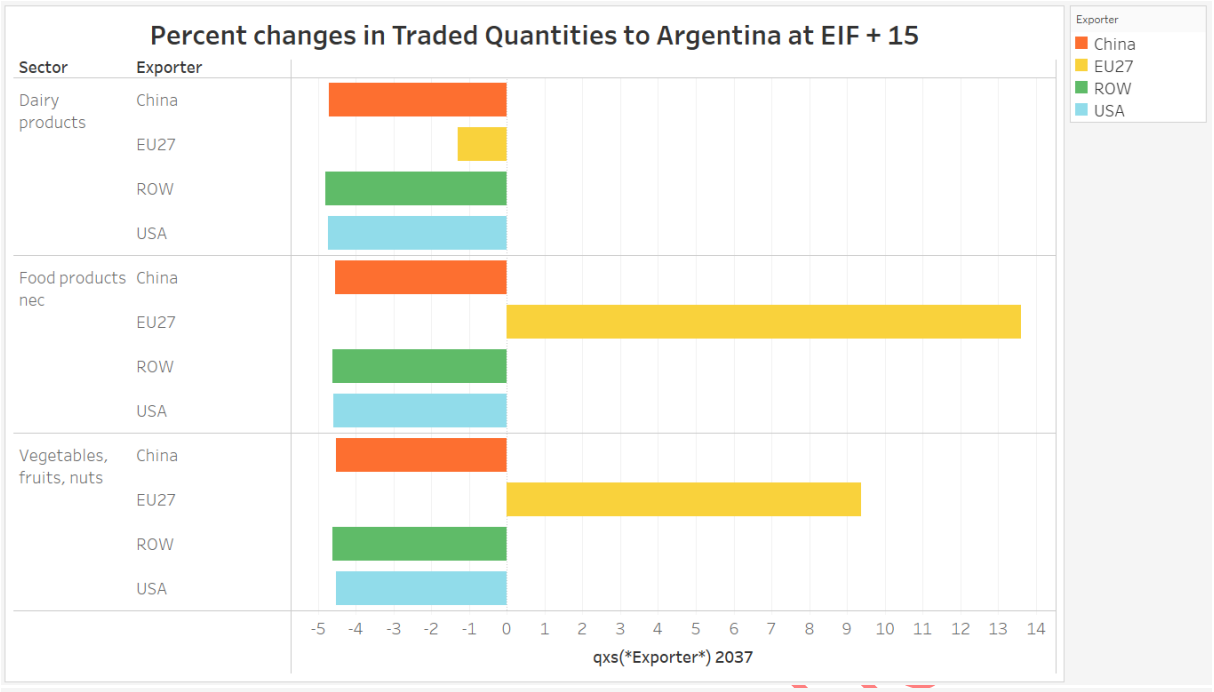
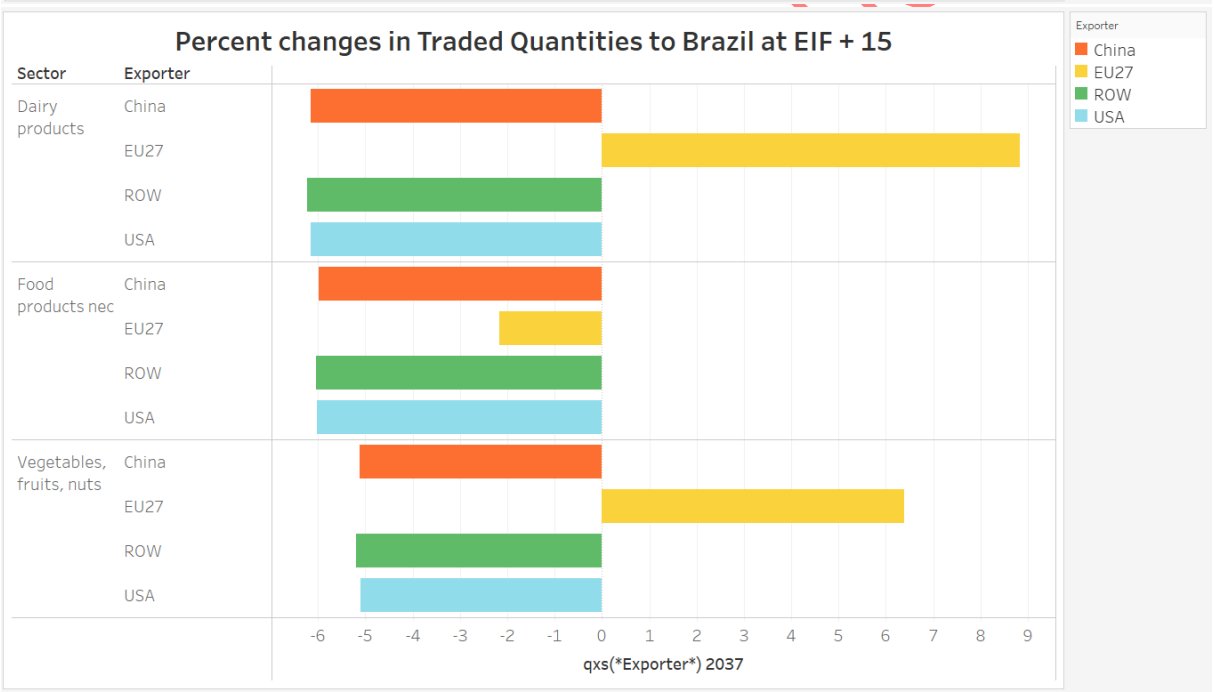
Trade Impact

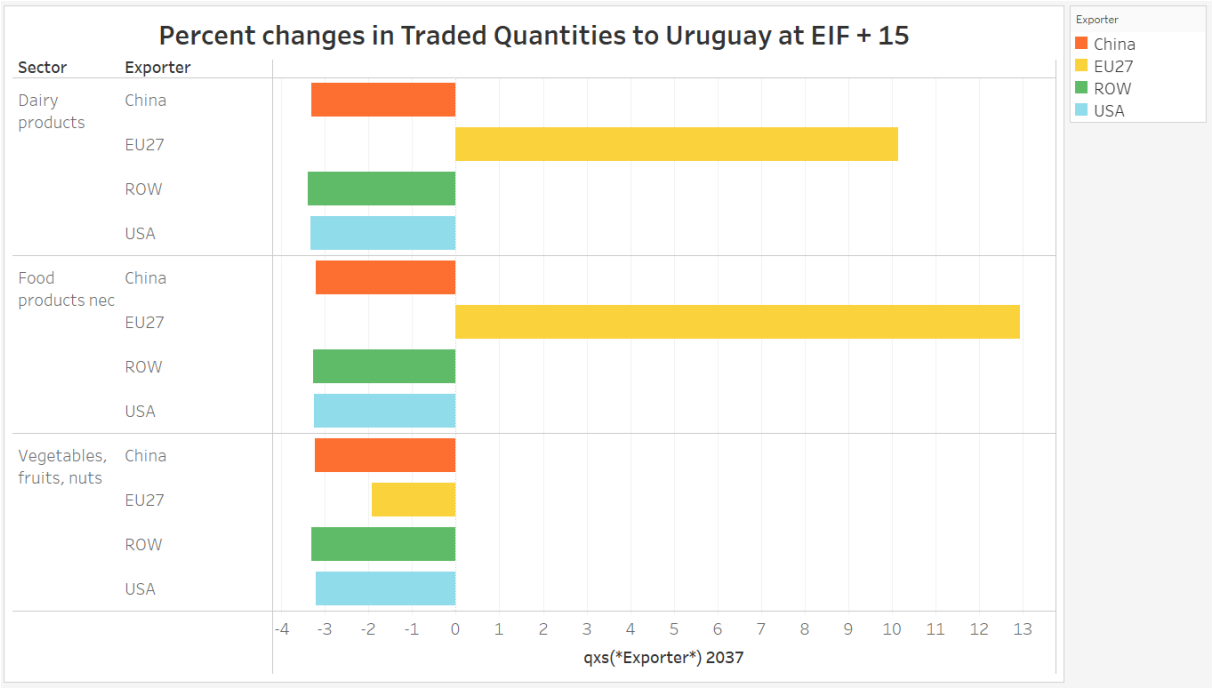


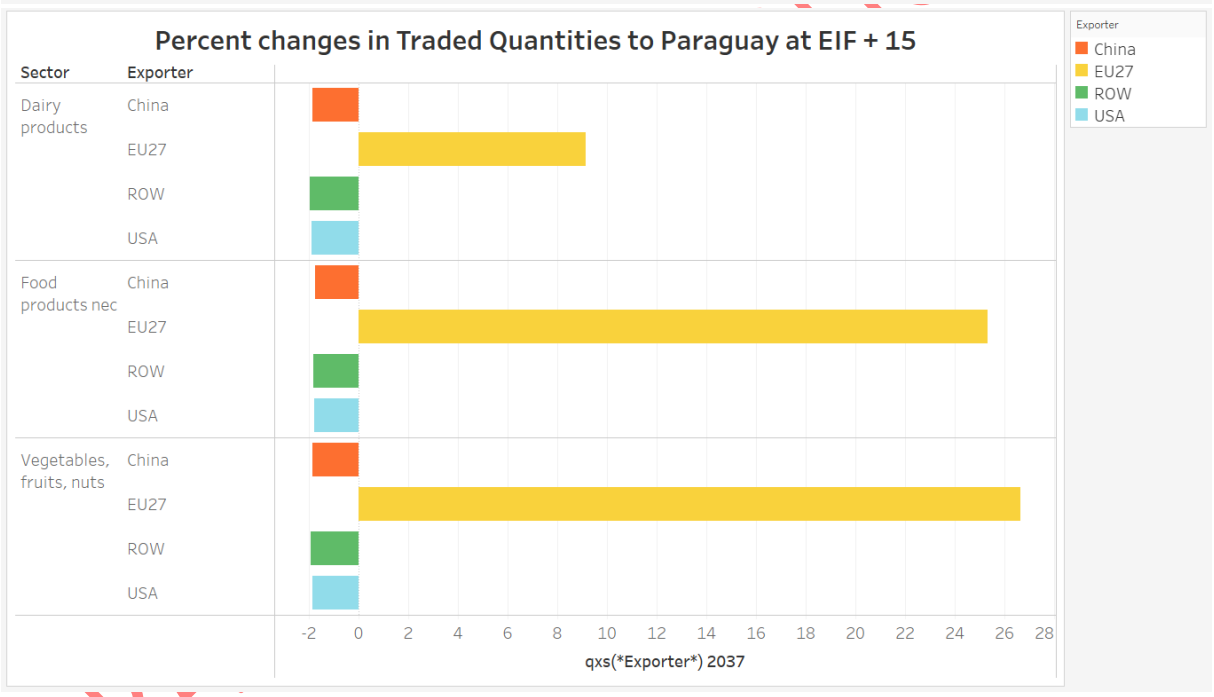



Percent changes in Traded Quantities to Argentina at EIF + 15
Sector
Exporter
Dairy products
Food products nec
Vegetables, fruits, nuts
China
EU27
ROW
USA
-5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
qxs(*Exporter*) 2037
Exporter
China
EU27
ROW
USA


Percent changes in Traded Quantities to Brazil at EIF + 15
Sector
Exporter
Dairy products
Food products nec
Vegetables, fruits, nuts
China
EU27
ROW
USA
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9
qxs(*Exporter*) 2037
Exporter
China
EU27
ROW
USA

DRA





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5. CONCLUSION

[...].

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ANNEX 1 TRQ regimes during the implementation of the EU-Mercosur AA.

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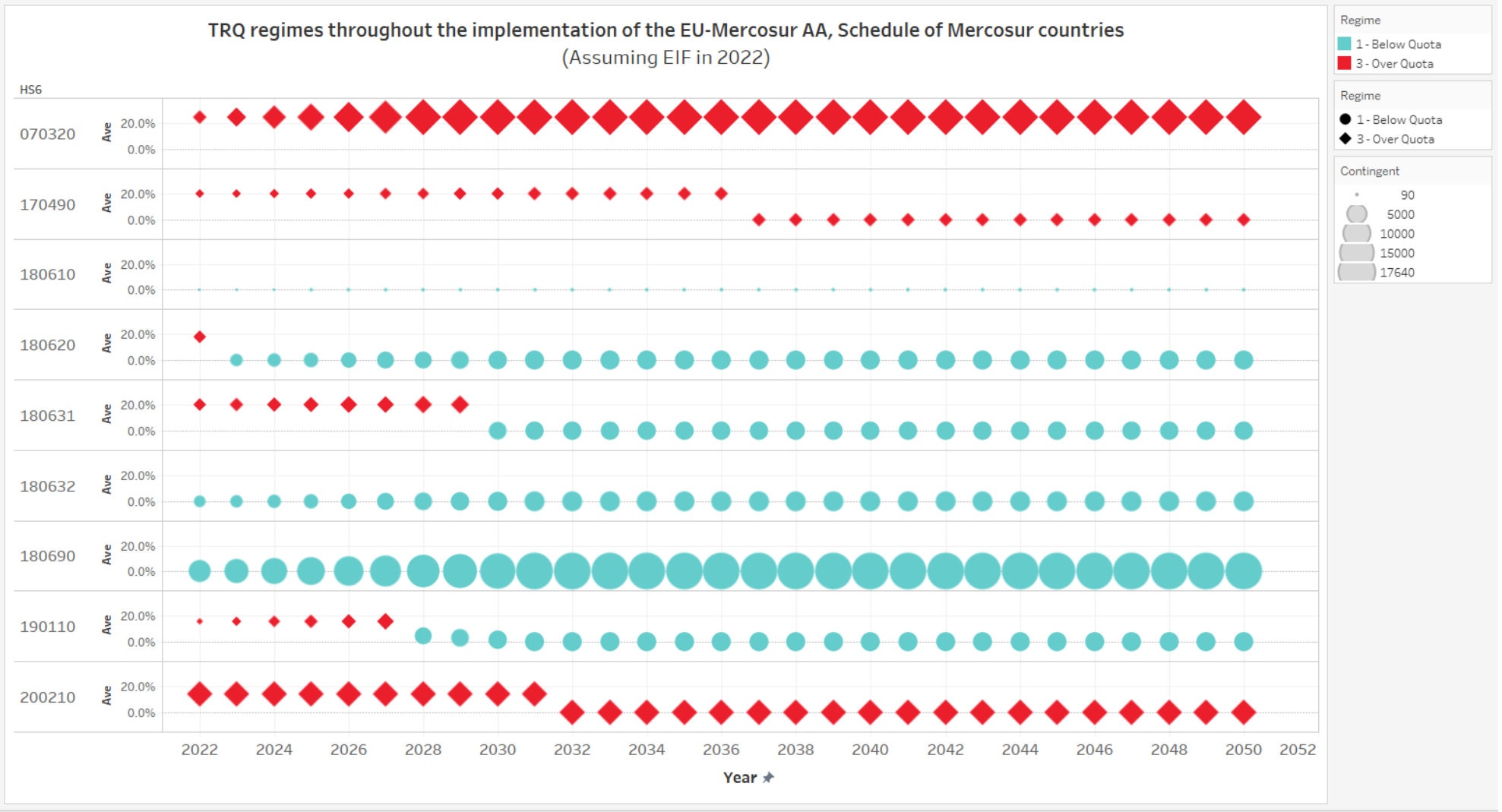
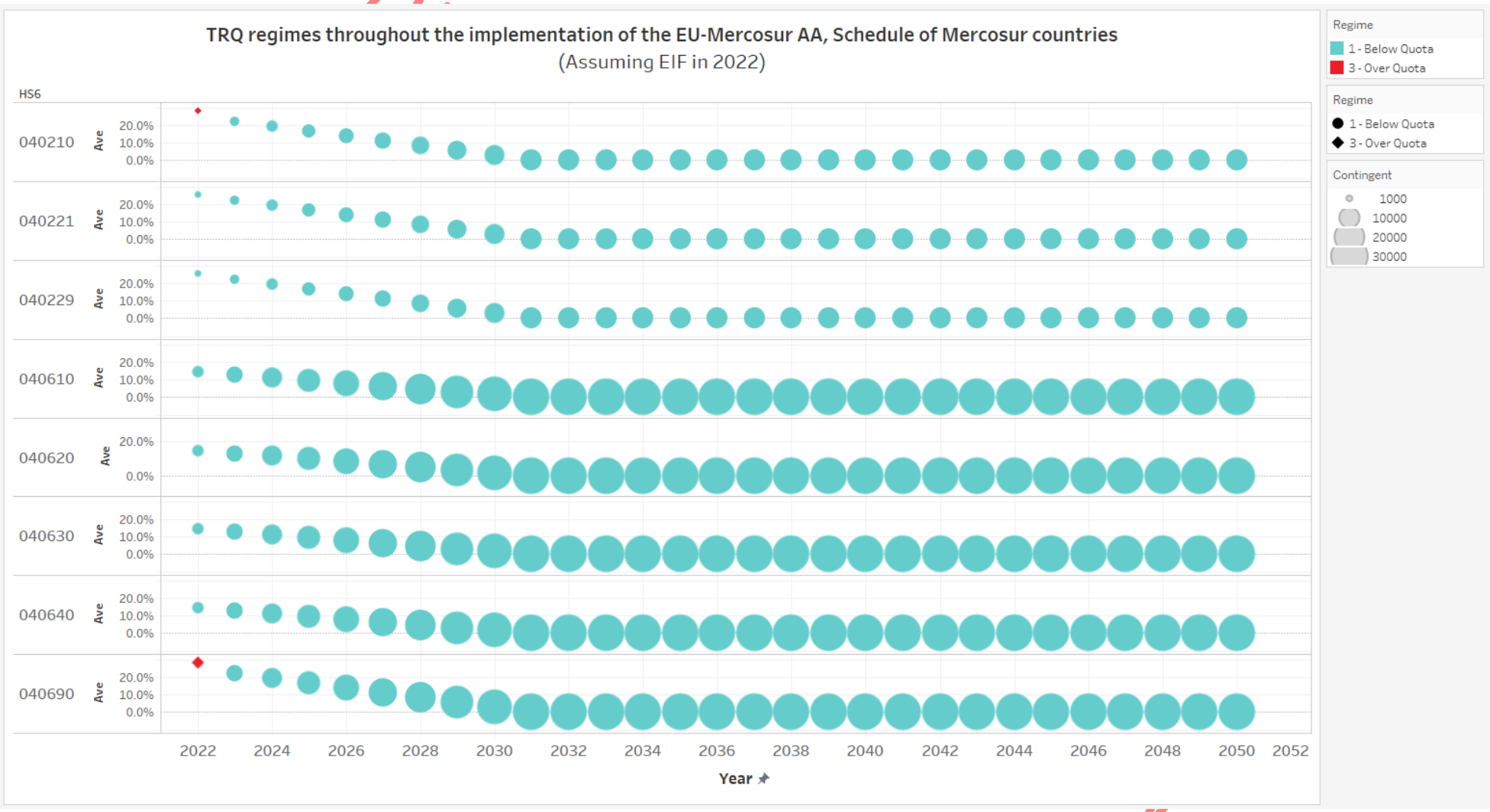
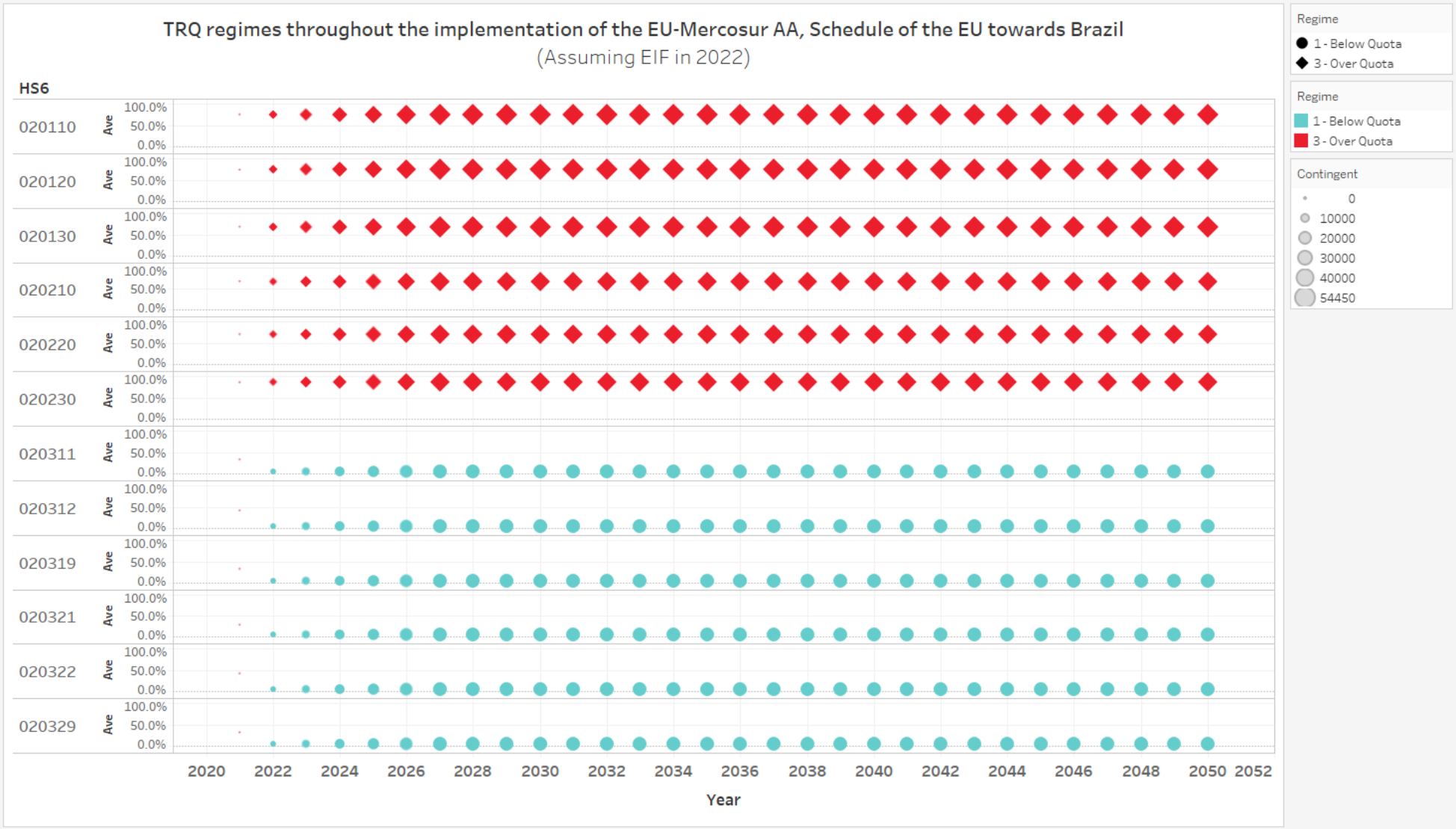
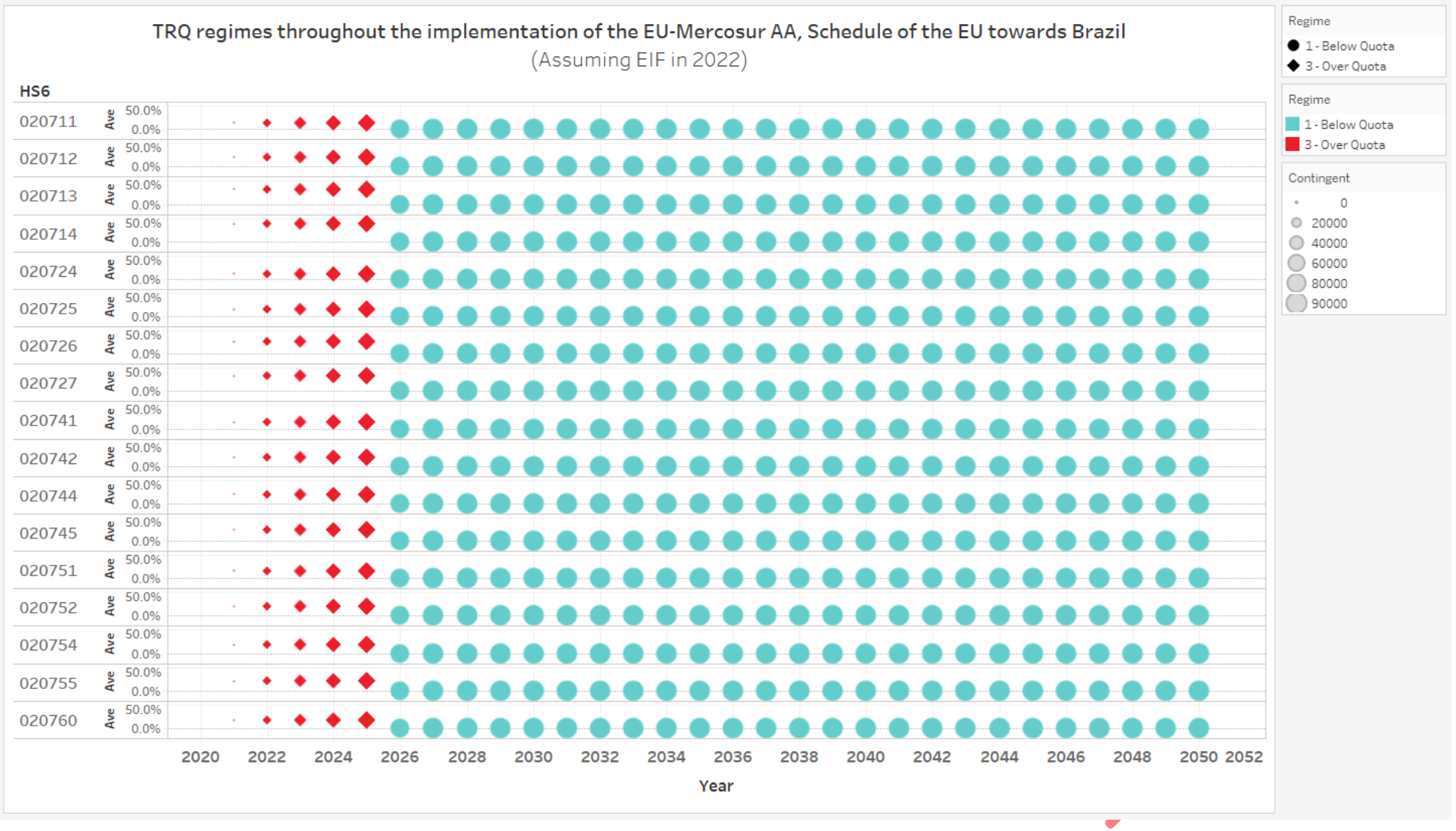
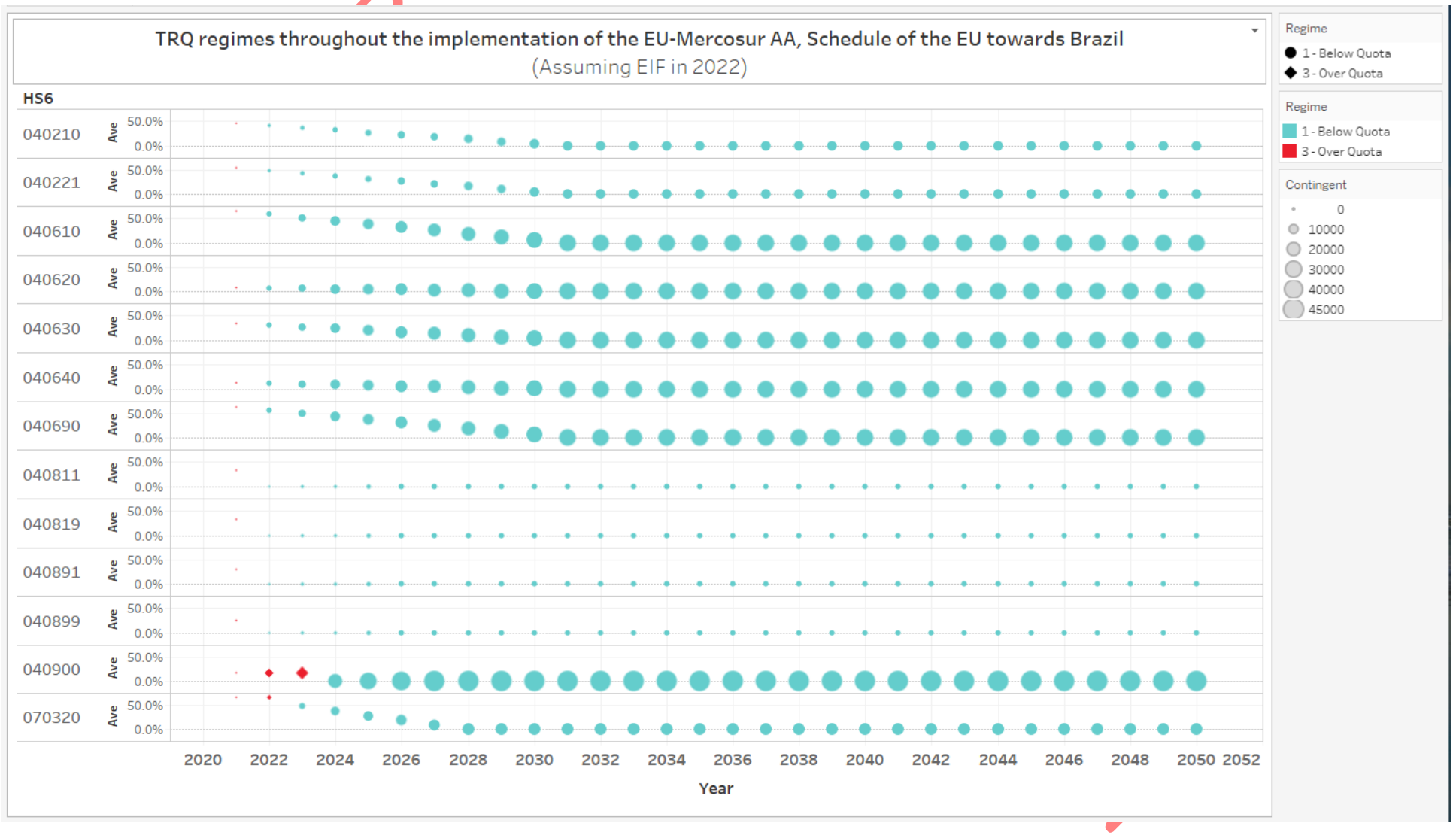
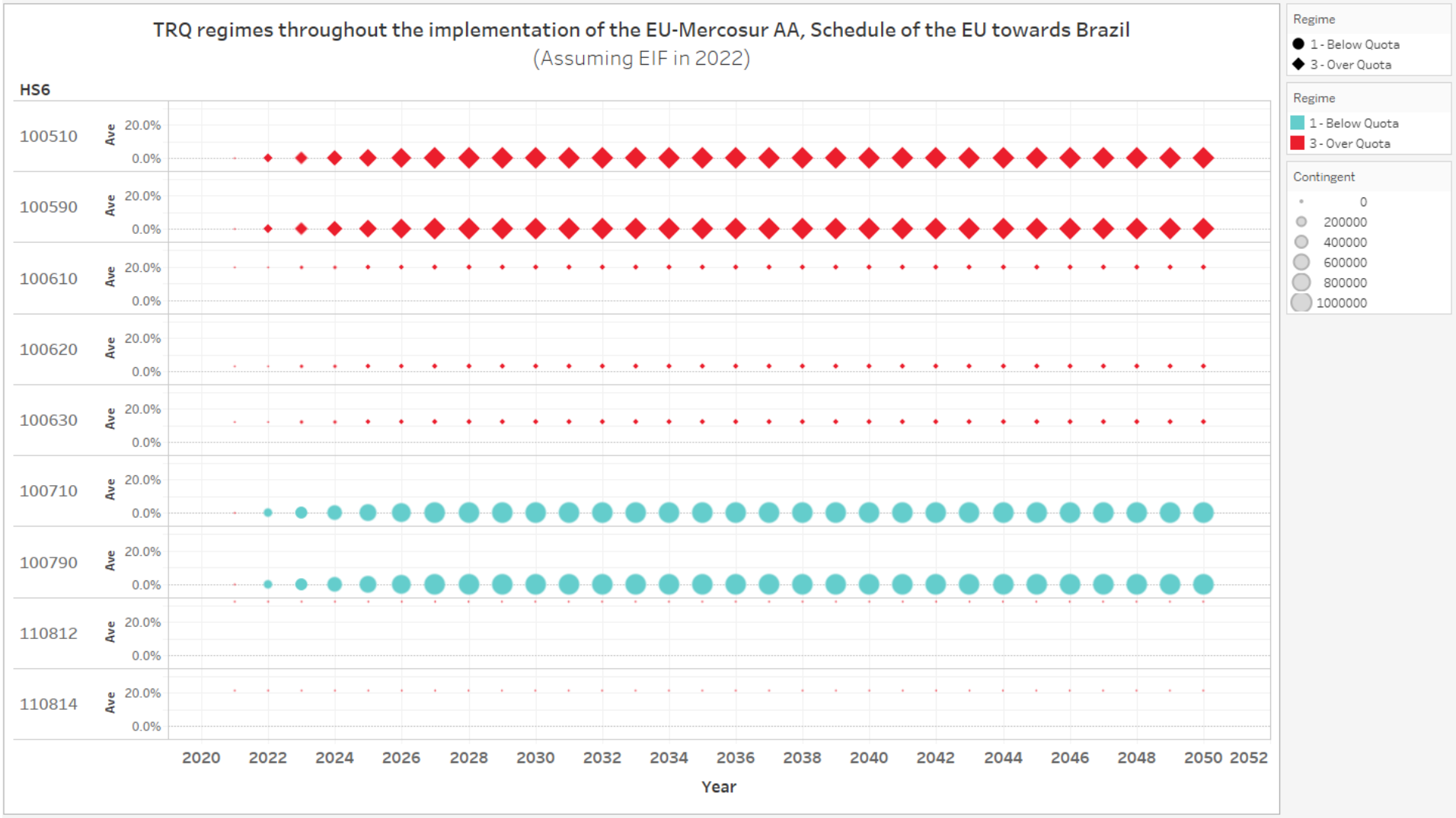

TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of Mercosur countries
(Assuming EIF in 2022)
HS6
070320
170490
180610
180620
180631
180632
180690
190110
200210
Ave
20.0%
0.0%
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
90
5000
10000
15000
17640

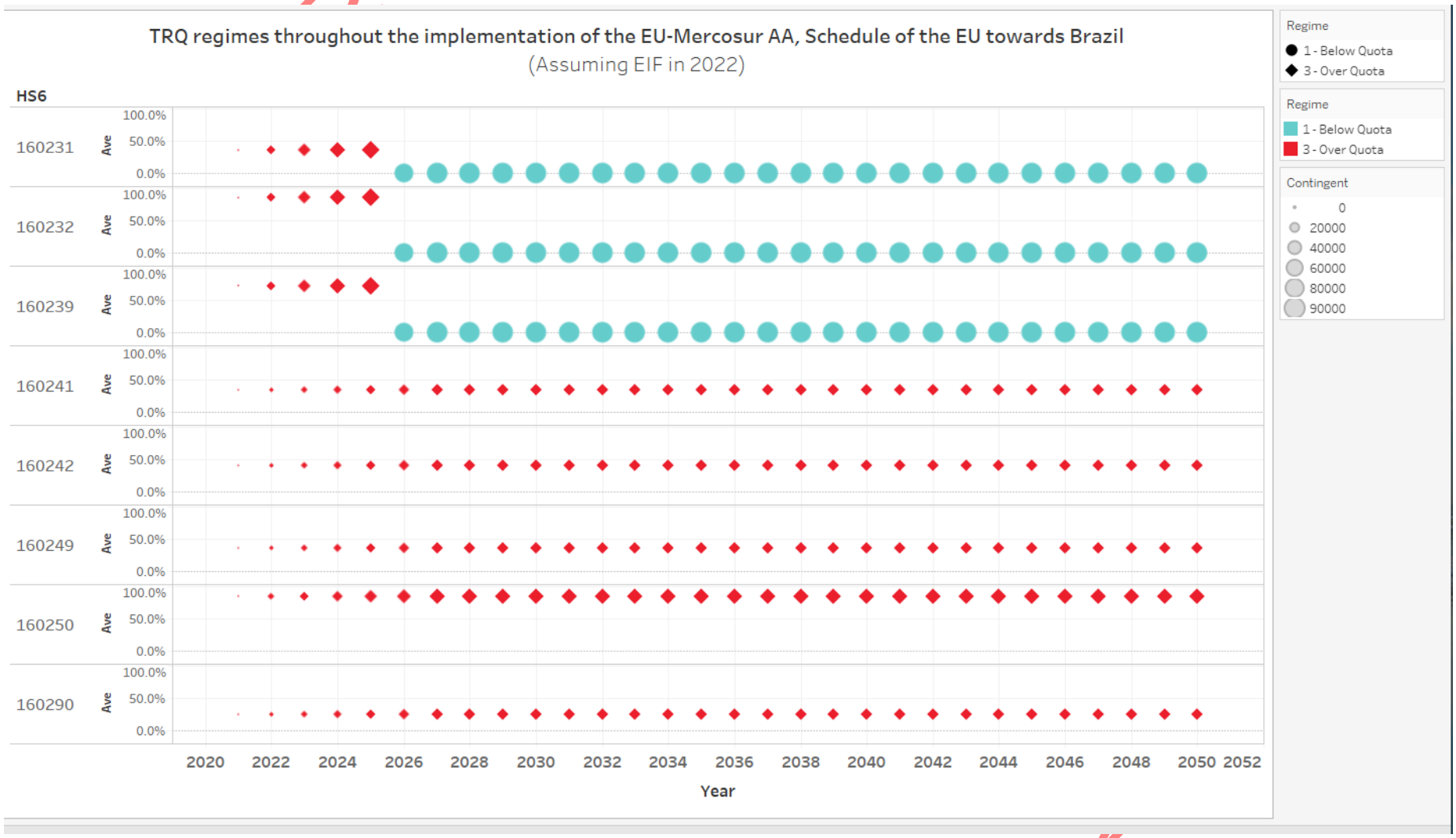

TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of Mercosur countries
(Assuming EIF in 2022)
HS6
040210
040221
040229
040610
040620
040630
040640
040690
Ave
20.0%
10.0%
0.0%
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
1000
10000
20000
30000

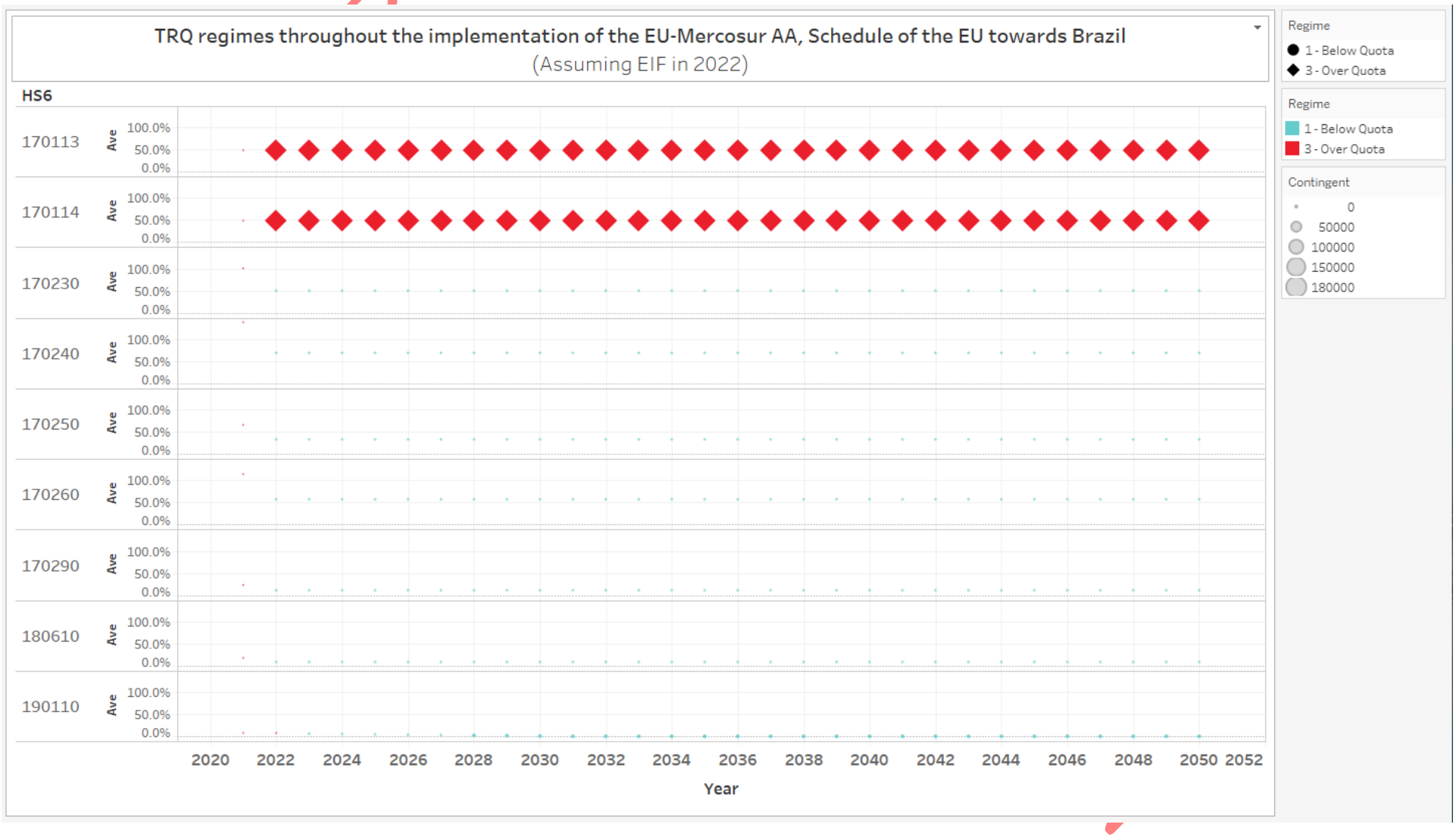

TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of the EU towards Brazil
(Assuming EIF in 2022)
HS6
020110
020120
020130
020210
020220
020230
020311
020312
020319
020321
020322
020329
Ave
100.0%
50.0%
0.0%
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
0
10000
20000
30000
40000
54450


TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of the EU towards Brazil
(Assuming EIF in 2022)
HS6
020711
020712
020713
020714
020724
020725
020726
020727
020741
020742
020744
020745
020751
020752
020754
020755
020760
Ave
50.0%
0.0%
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
0
20000
40000
60000
80000
90000


TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of the EU towards Brazil
(Assuming EIF in 2022)
HS6
040210
040221
040610
040620
040630
040640
040690
040811
040819
040891
040899
040900
070320
Ave
50.0%
0.0%
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
0
10000
20000
30000
40000
45000


TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of the EU towards Brazil
(Assuming EIF in 2022)
HS6
100510
100590
100610
100620
100630
100710
100790
110812
110814
Ave
20.0%
0.0%
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
0
200000
400000
600000
800000
1000000


TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of the EU towards Brazil
(Assuming EIF in 2022)
HS6
160231
160232
160239
160241
160242
160249
160250
160290
Ave
100.0%
50.0%
0.0%
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
0
20000
40000
60000
80000
90000


TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of the EU towards Brazil
(Assuming EIF in 2022)
HS6
170113
170114
170230
170240
170250
170260
170290
180610
190110
Ave
100.0%
50.0%
0.0%
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
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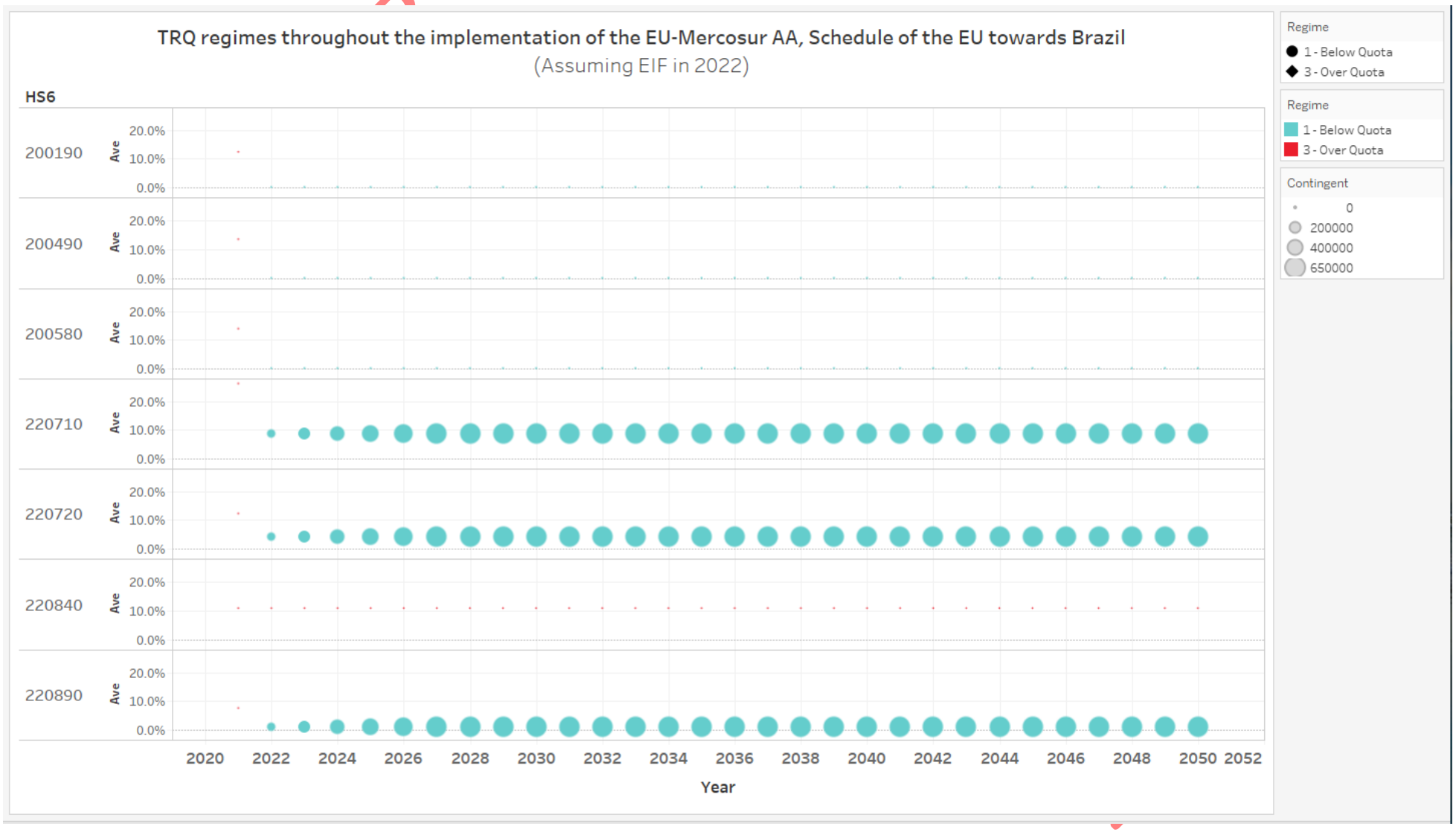
50000
100000
150000
180000


TRQ regimes throughout the implementation of the EU-Mercosur AA, Schedule of the EU towards Brazil
(Assuming EIF in 2022)
HS6
200190
200490
200580
220710
220720
220840
220890
Ave
20.0%
10.0%
0.0%
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
Year
Regime
1 - Below Quota
3 - Over Quota
Regime
1 - Below Quota
3 - Over Quota
Contingent
0
200000
400000
650000

ANNEX 2 Trade Impacts of the EU-Mercosur AA (Agricultural products subject to TRQ only)

Table 9: Percent Changes in Bilateral Traded Quantities, EIF

Commo..	Exporter	Importer Argentina	Brazil	EU27	Paraguay	Uruguay
c_b_t	Argentina	0.02	-0.12	2.21	0.18	0.10
	Brazil	0.12	0.00	0.39	0.29	0.21
	EU27	11.17	7.96	0.01	31.75	6.82
	Paraguay	-0.12	-0.26	1.92	0.05	-0.03
	Uruguay	0.02	-0.12	3.19	0.20	0.13
c_cer	Argentina	0.08	-0.09	1.14	0.19	0.11
	Brazil	0.17	0.05	0.33	0.30	0.23
	EU27	4.22	26.47	0.01	16.52	1.87
	Paraguay	-0.06	-0.21	0.09	0.07	-0.03
	Uruguay	-0.01	-0.17	0.15	0.11	0.04
c_cmt	Argentina	0.04	-0.10	0.28	0.12	0.09
	Brazil	0.13	0.01	0.38	0.28	0.20
	EU27	-0.02	-0.26	0.01	16.04	-0.01
	Paraguay	-0.14	-0.27	0.11	0.02	-0.06
	Uruguay	-0.04	-0.18	0.21	0.09	0.04
c_mil	Argentina	0.01	-0.14	2.00	0.17	0.09
	Brazil	0.11	-0.01	0.91	0.28	0.21
	EU27	-0.26	0.55	0.01	0.66	-0.16
	Paraguay	-0.16	-0.30	0.10	0.01	-0.07
	Uruguay	-0.05	-0.19	0.22	0.12	0.05
c_oap	Argentina	0.08	-0.08	0.31	0.21	0.54
	Brazil	0.05	0.02	1.34	0.24	0.59
	EU27	-0.14	-0.37	0.01	0.12	0.30
	Paraguay	-0.15	-0.28	0.10	0.01	0.39
	Uruguay	0.00	-0.14	0.25	0.15	0.55
c_ofd	Argentina	0.03	-0.14	3.15	0.17	0.10
	Brazil	0.12	-0.01	2.79	0.27	0.20
	EU27	3.65	0.47	0.01	1.63	2.34
	Paraguay	-0.12	-0.27	1.89	0.05	-0.04
	Uruguay	-0.06	-0.21	3.03	0.09	0.04
c_omt	Argentina	0.03	-0.12	1.03	0.18	0.15
	Brazil	0.12	0.00	0.39	0.29	0.25
	EU27	0.07	-0.13	0.01	0.87	0.88
	Paraguay	-0.15	-0.29	0.11	0.01	-0.02
	Uruguay	-0.05	-0.19	1.83	0.11	0.08
c_sgr	Argentina	0.03	-0.13	0.24	0.14	0.09
	Brazil	0.12	0.01	0.35	0.25	0.20
	EU27	0.60	0.44	0.01	0.64	1.28
	Paraguay	-0.11	-0.25	0.11	0.02	-0.04
	Uruguay	0.01	-0.13	0.23	0.12	0.08
c_v_f	Argentina	0.01	-0.12	2.12	0.12	0.06
	Brazil	0.08	0.01	1.26	0.20	0.15
	EU27	14.75	10.63	0.00	2.84	1.60
	Paraguay	-0.15	-0.25	0.09	0.00	-0.06
	Uruguay	-0.10	-0.21	1.09	0.05	-0.01

Table 10: Percent Changes in Bilateral Traded quantities, EIF + 15

Commo..	Exporter	Importer Argentina	Brazil	EU27	Paraguay	Uruguay
c_b_t	Argentina	0	-2	12	3	1
	Brazil	1	-1	15	4	2
	EU27	61	39	0	448	39
	Paraguay	-3	-4	18	0	-1
	Uruguay	-1	-3	11	2	0
c_cer	Argentina	1	-1	16	2	1
	Brazil	2	0	6	3	3
	EU27	11	1894	0	127	21
	Paraguay	-1	-3	2	0	-1
	Uruguay	0	-3	3	1	1
c_cmt	Argentina	0	-1	5	2	1
	Brazil	1	0	6	4	2
	EU27	-4	-6	0	14	-3
	Paraguay	-3	-4	2	0	-2
	Uruguay	-1	-3	4	1	0
c_mil	Argentina	0	-2	24	3	1
	Brazil	1	-1	13	4	2
	EU27	-1	9	0	9	10
	Paraguay	-3	-4	2	0	-2
	Uruguay	-1	-3	4	2	0
c_oap	Argentina	1	-1	20	3	4
	Brazil	0	0	11	3	4
	EU27	-4	-6	0	-2	0
	Paraguay	-3	-4	2	0	1
	Uruguay	-1	-2	16	2	3
c_ofd	Argentina	0	-2	12	3	1
	Brazil	1	0	25	4	2
	EU27	14	-2	0	25	13
	Paraguay	-3	-4	16	0	-1
	Uruguay	-2	-3	12	1	0
c_omt	Argentina	0	-2	28	3	2
	Brazil	1	0	36	4	3
	EU27	-2	-4	0	14	7
	Paraguay	-3	-4	2	0	-1
	Uruguay	-1	-3	11	2	1
c_sgr	Argentina	0	-2	5	2	1
	Brazil	1	0	6	3	2
	EU27	0	-2	0	2	7
	Paraguay	-3	-4	2	0	-1
	Uruguay	-1	-2	4	2	1
c_v_f	Argentina	0	-2	11	2	0
	Brazil	0	0	10	3	1
	EU27	9	6	0	27	-2
	Paraguay	-3	-4	3	0	-2
	Uruguay	-2	-3	8	1	0