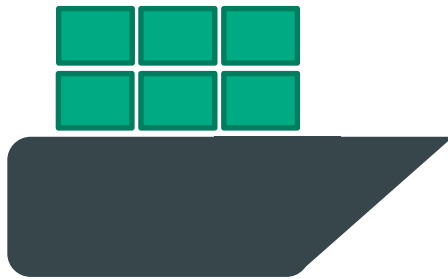


Modelling the complex interaction effects of TRQs

What are TRQs?



100% tariff 

5% tariff
 

What are TRQs?



100% tariff 

5% tariff 

What are TRQs?



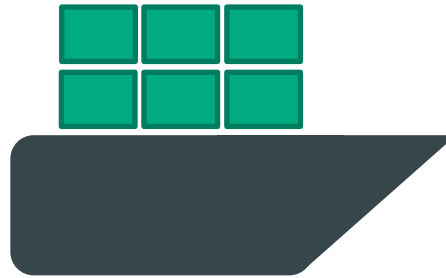
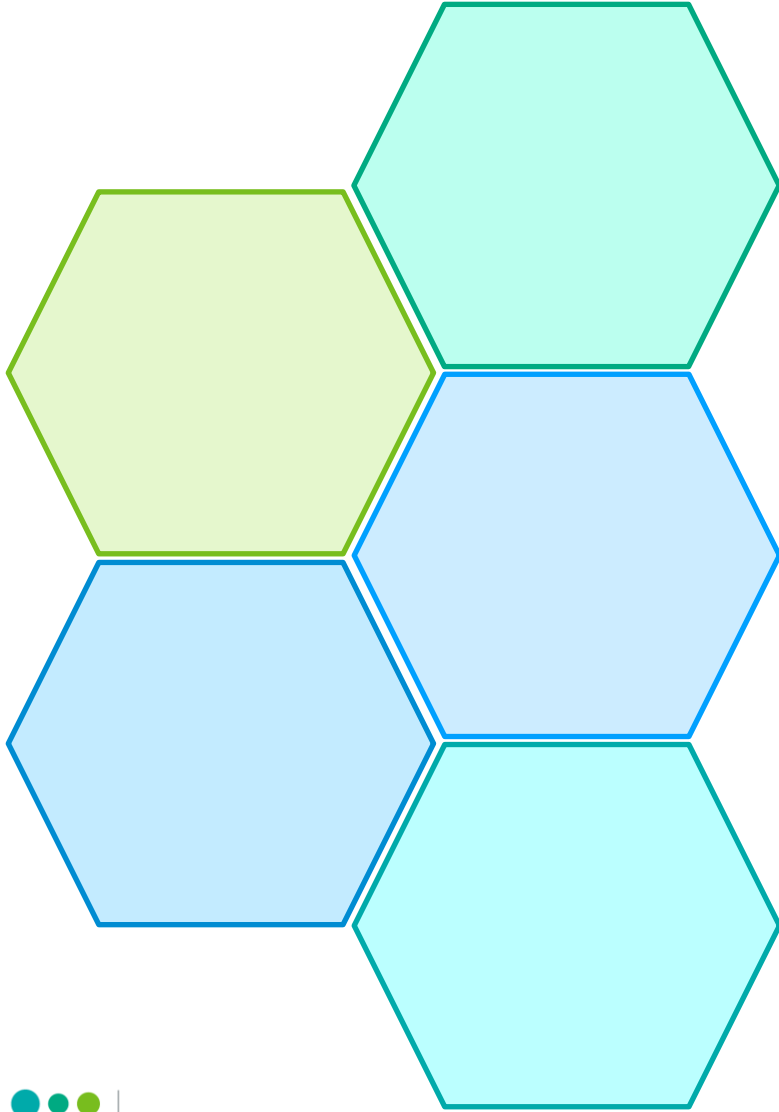
100% tariff 



5% tariff



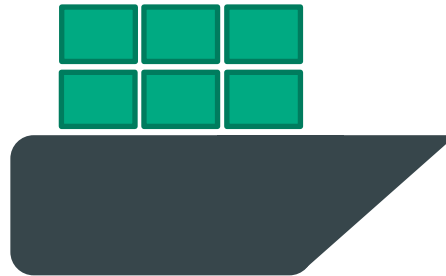
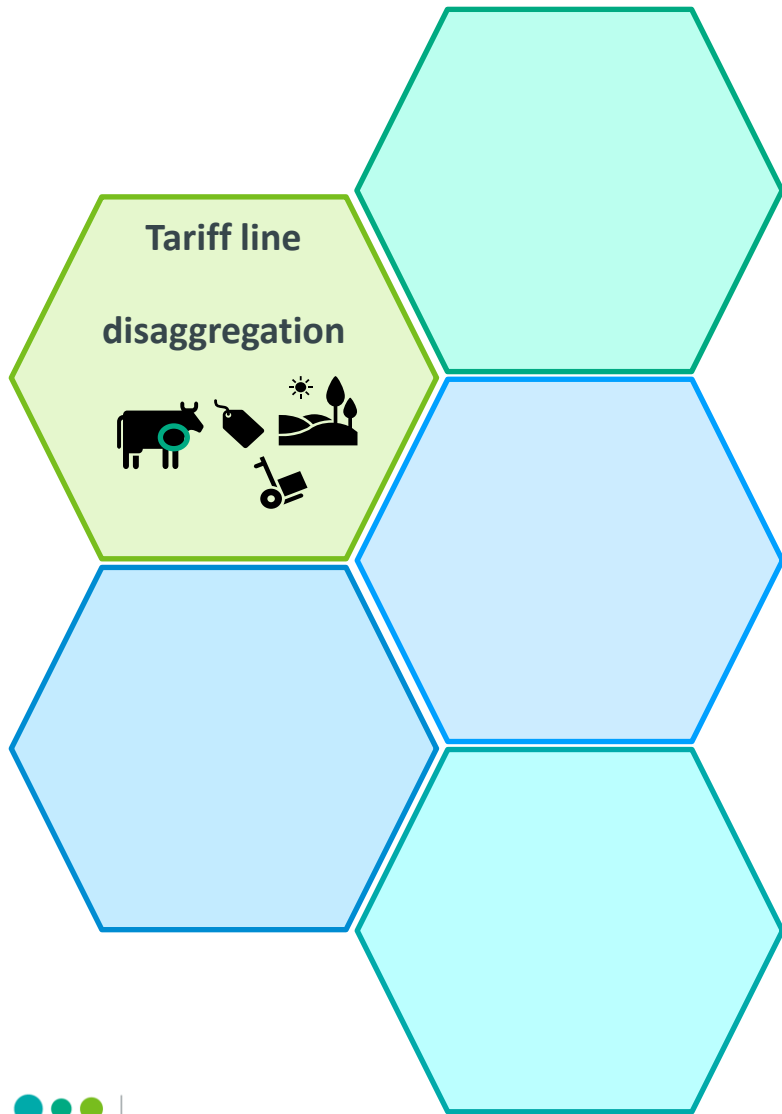
What's the problem with TRQs?



100% 

5% 

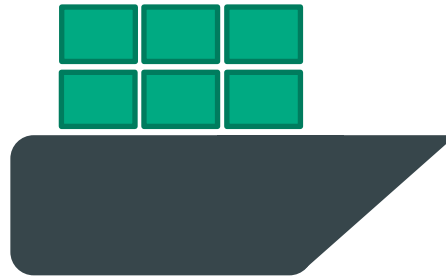
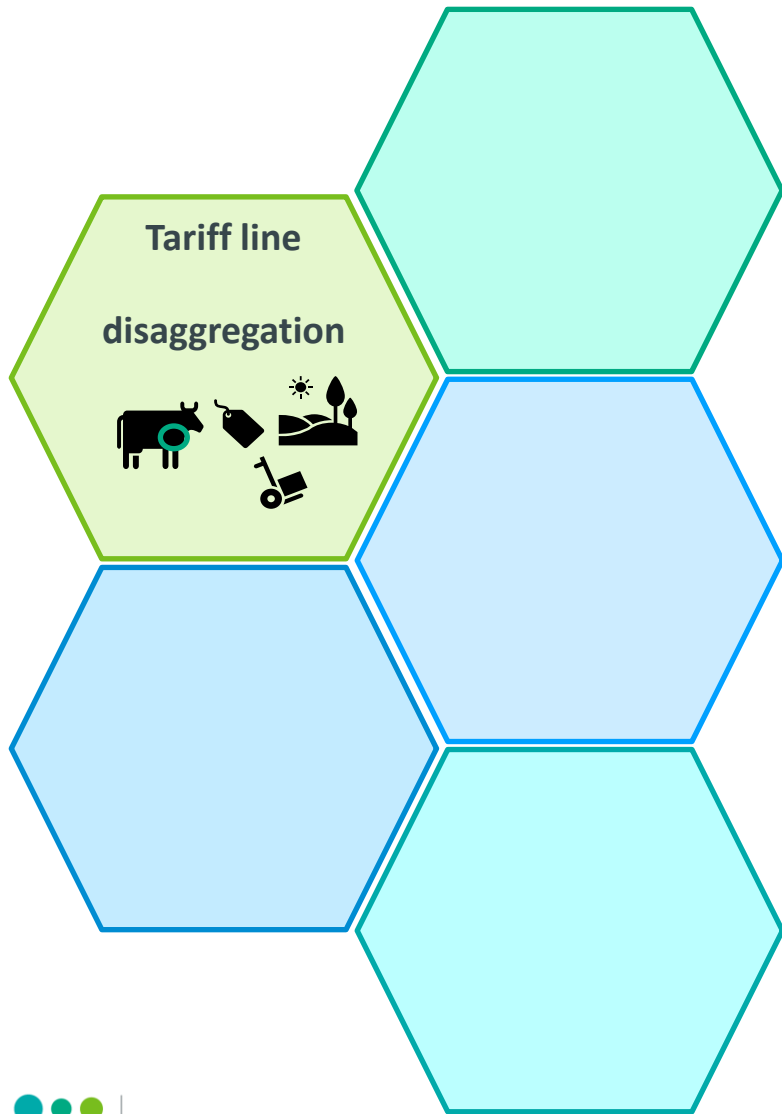
What's the problem with TRQs?



100% 

5% 

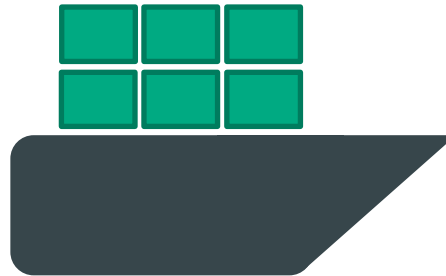
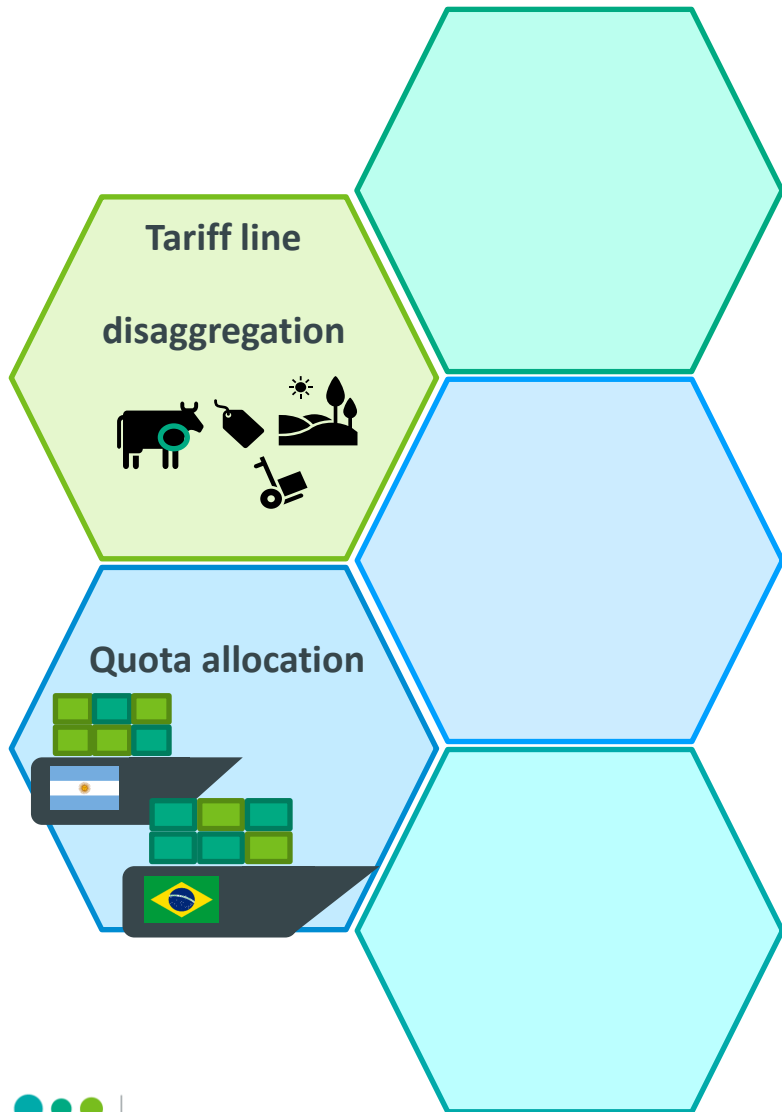
What's the problem with TRQs?



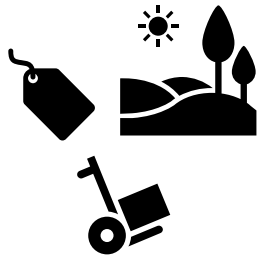
100% 

5%      

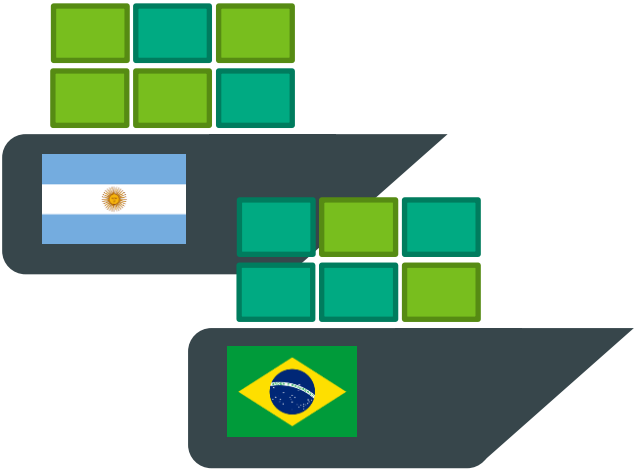
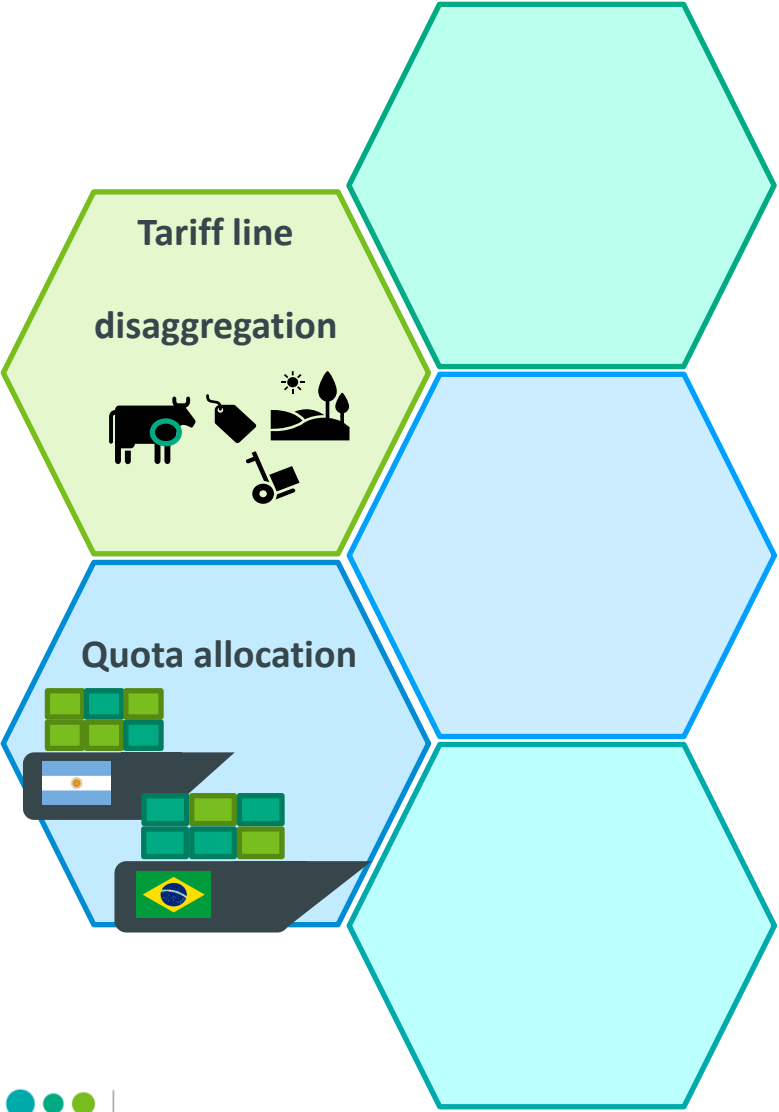
What's the problem with TRQs?



100% 

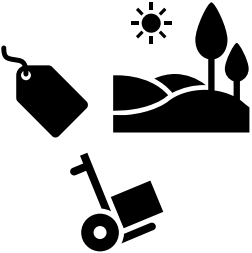
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What's the problem with TRQs?

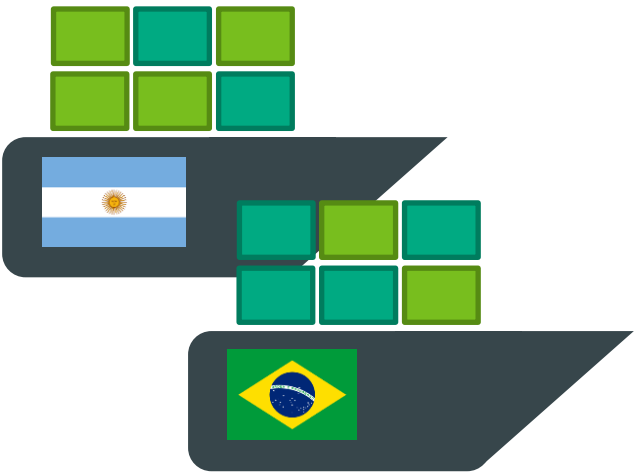
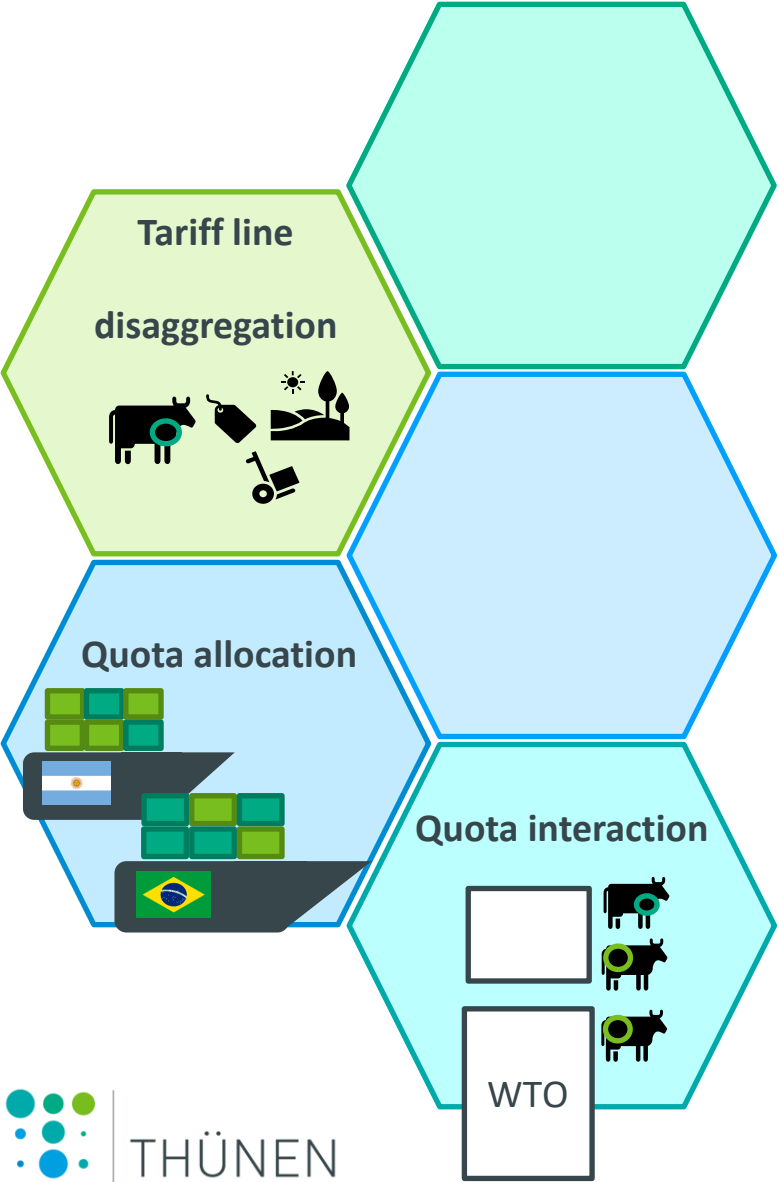


70% 

100% 

5%    

What's the problem with TRQs?

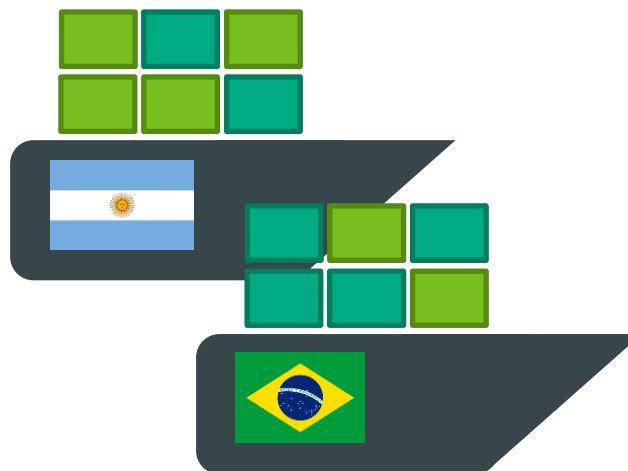
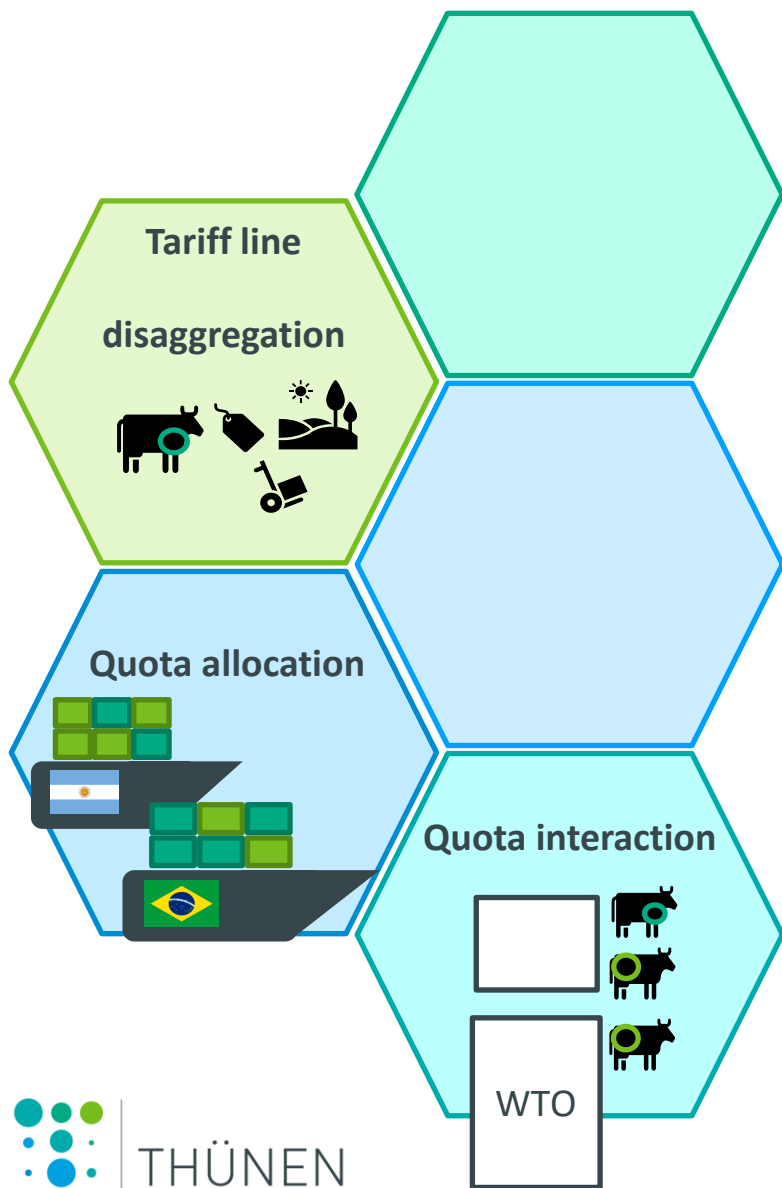


70% 

100% 

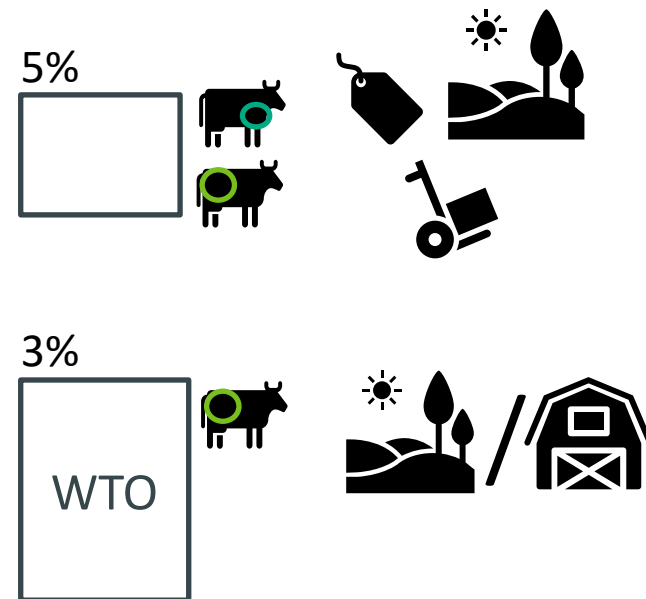
5%    

What's the problem with TRQs?

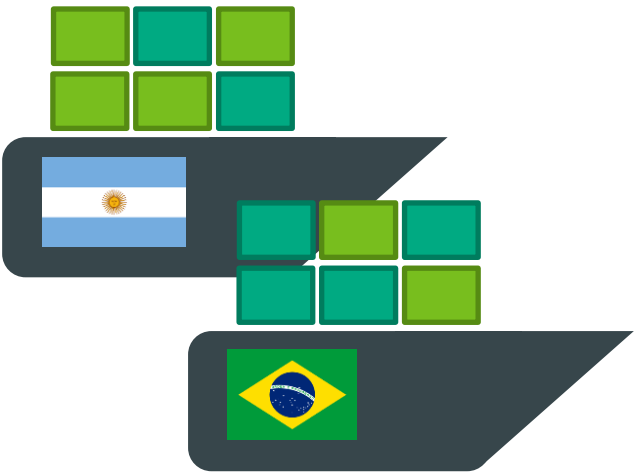
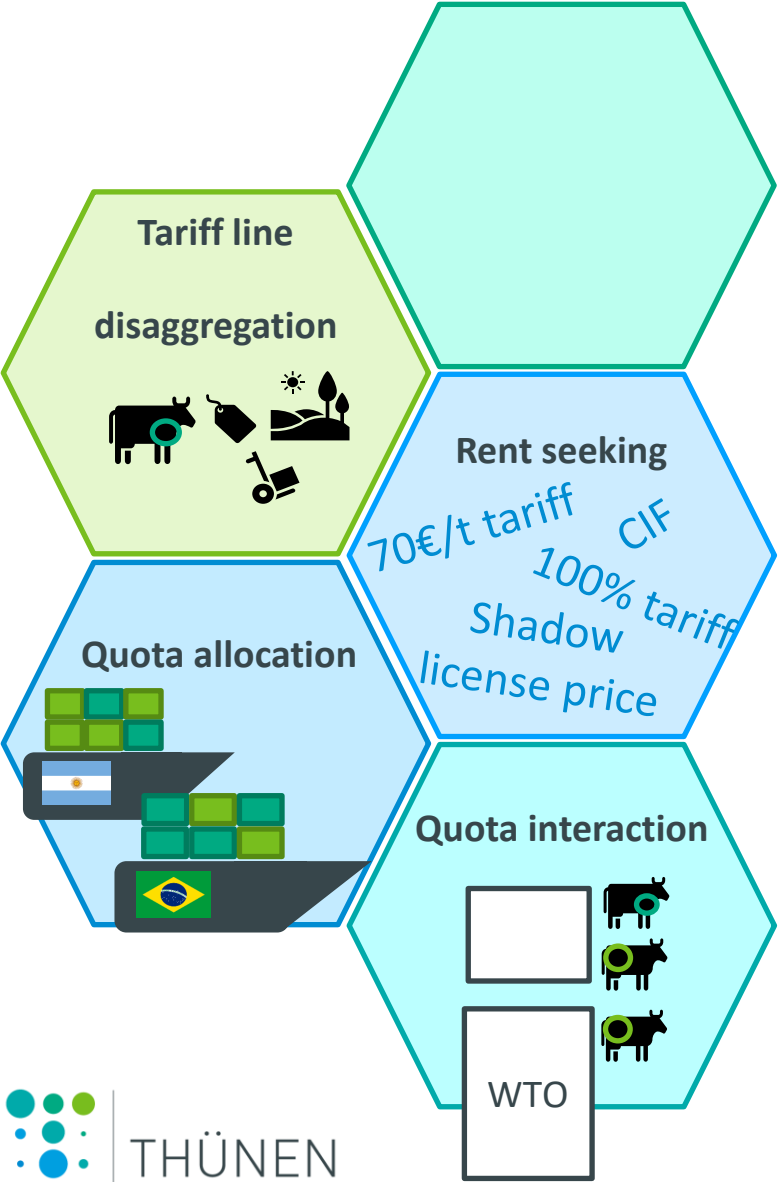


70% 

100% 

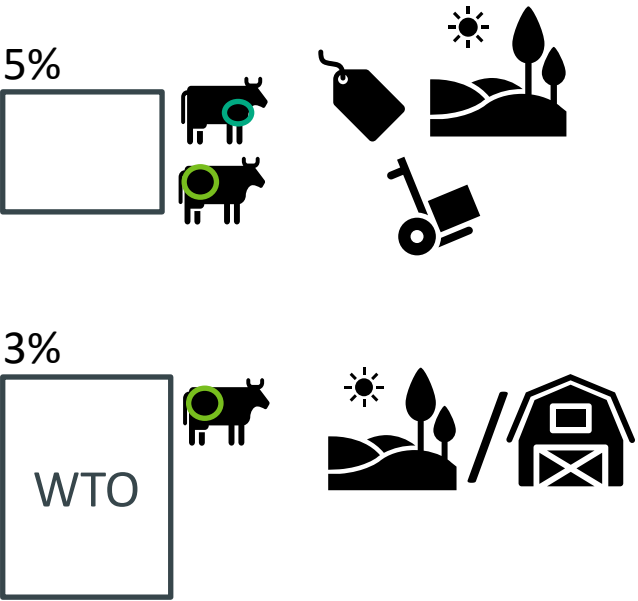


What's the problem with TRQs?

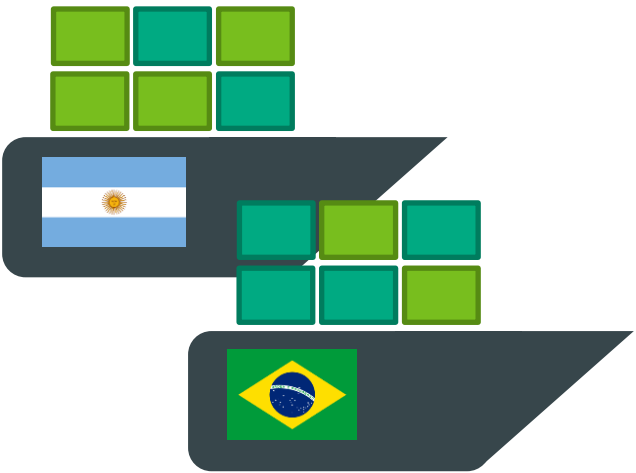
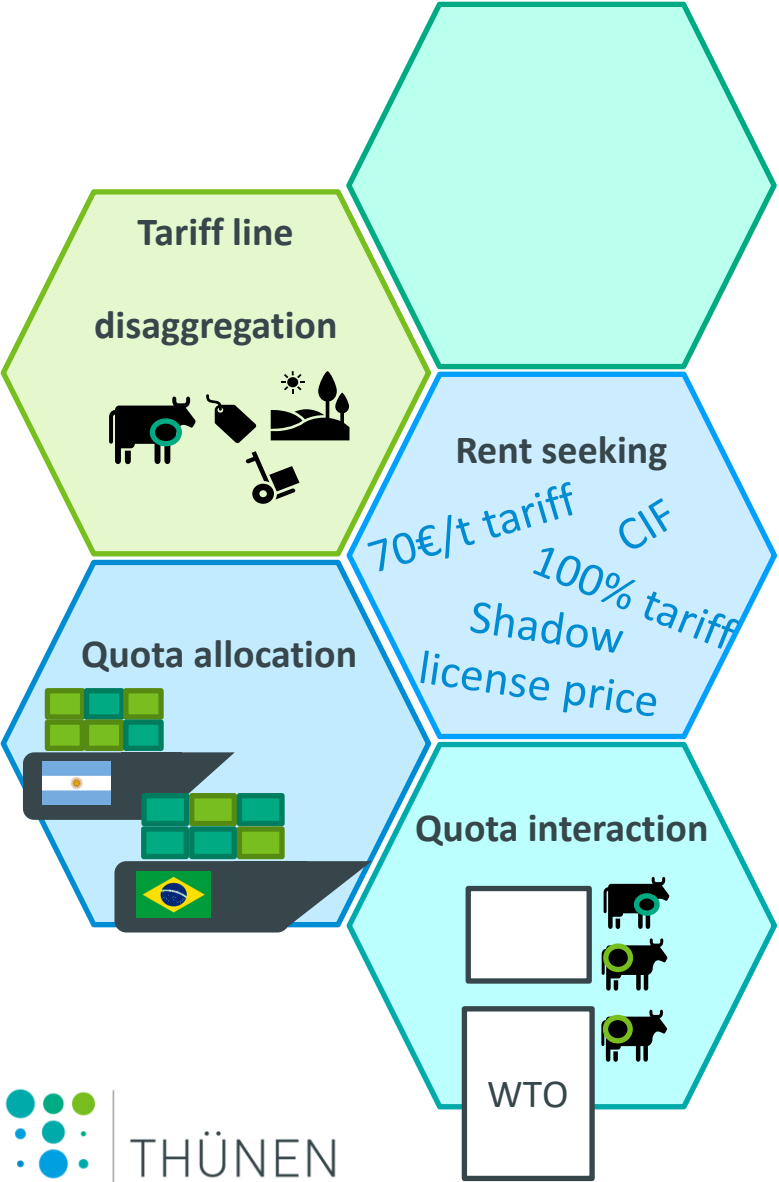


70%

100%

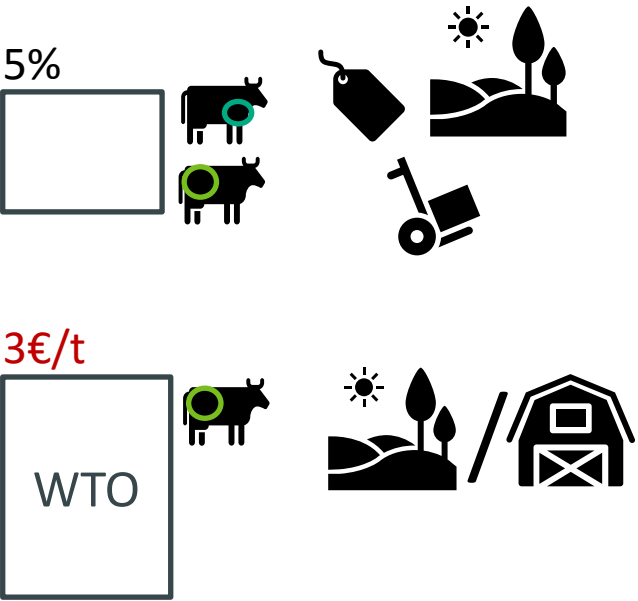


What's the problem with TRQs?

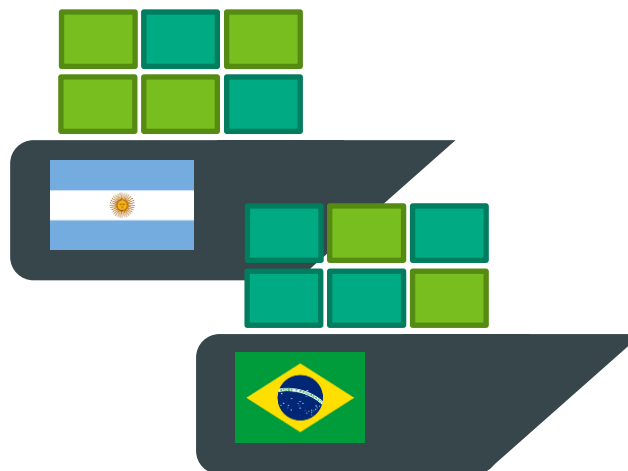
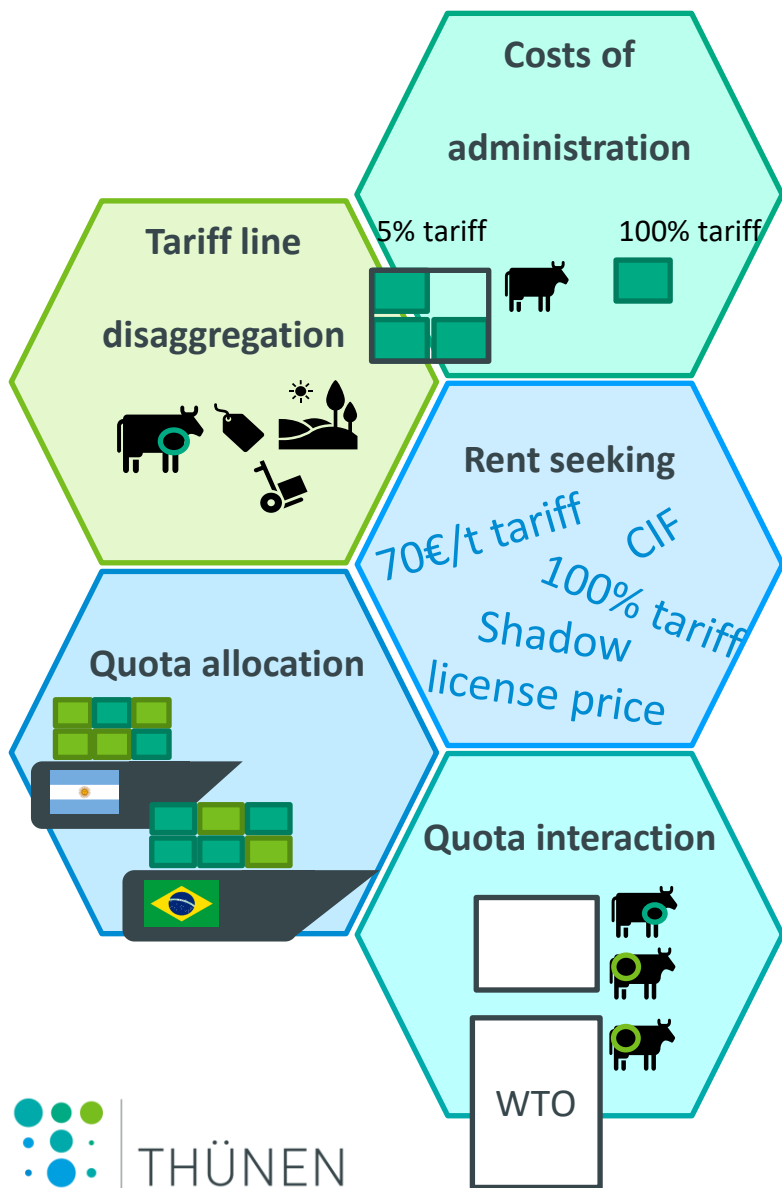


70€/t 

100% 

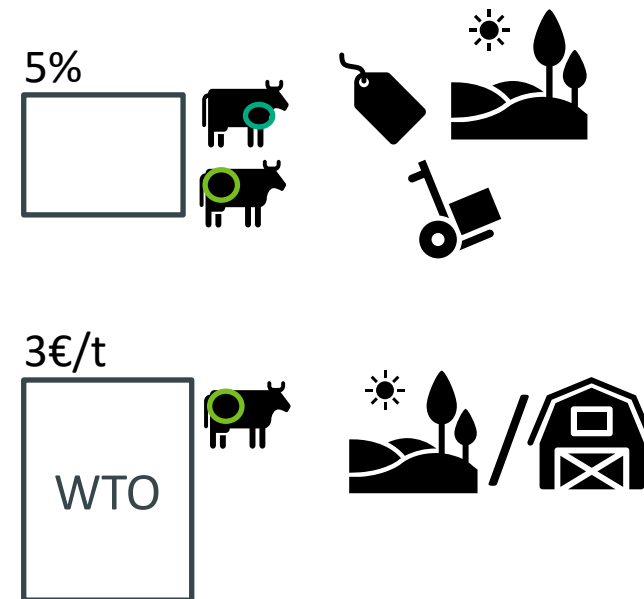


What's the problem with TRQs?

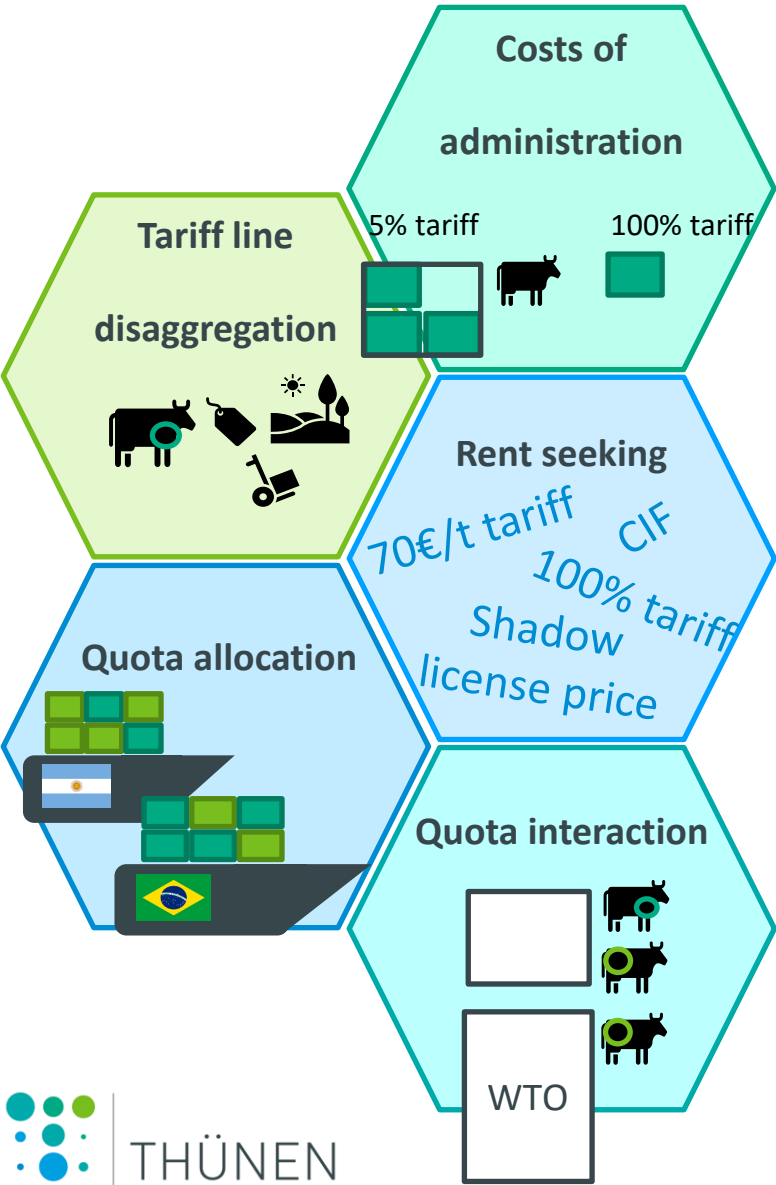


70€/t 

100% 

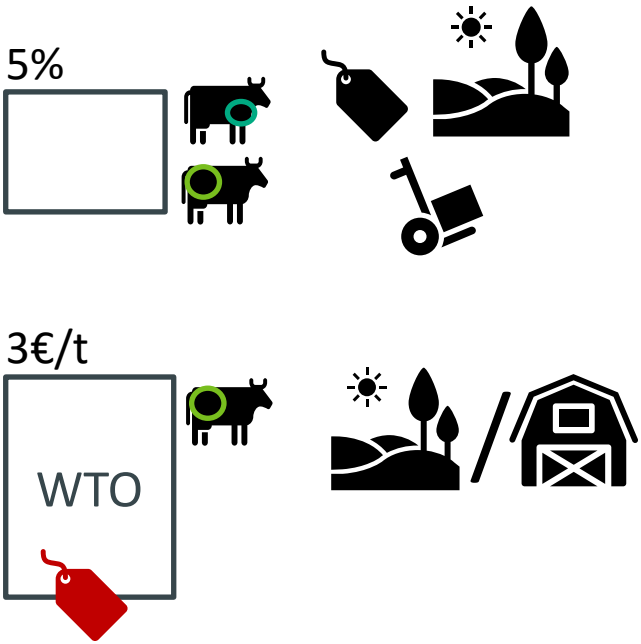
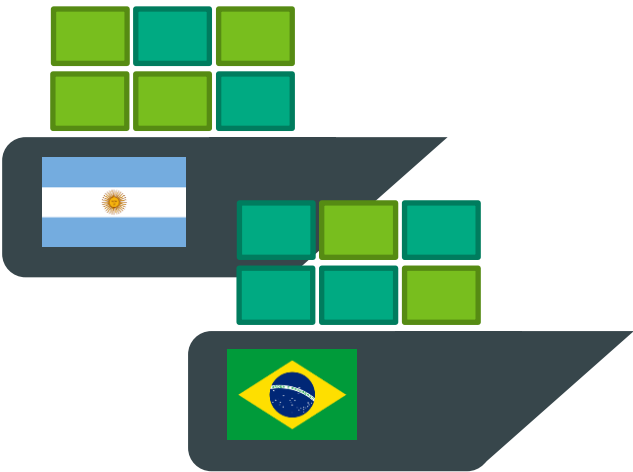


What's the problem with TRQs?

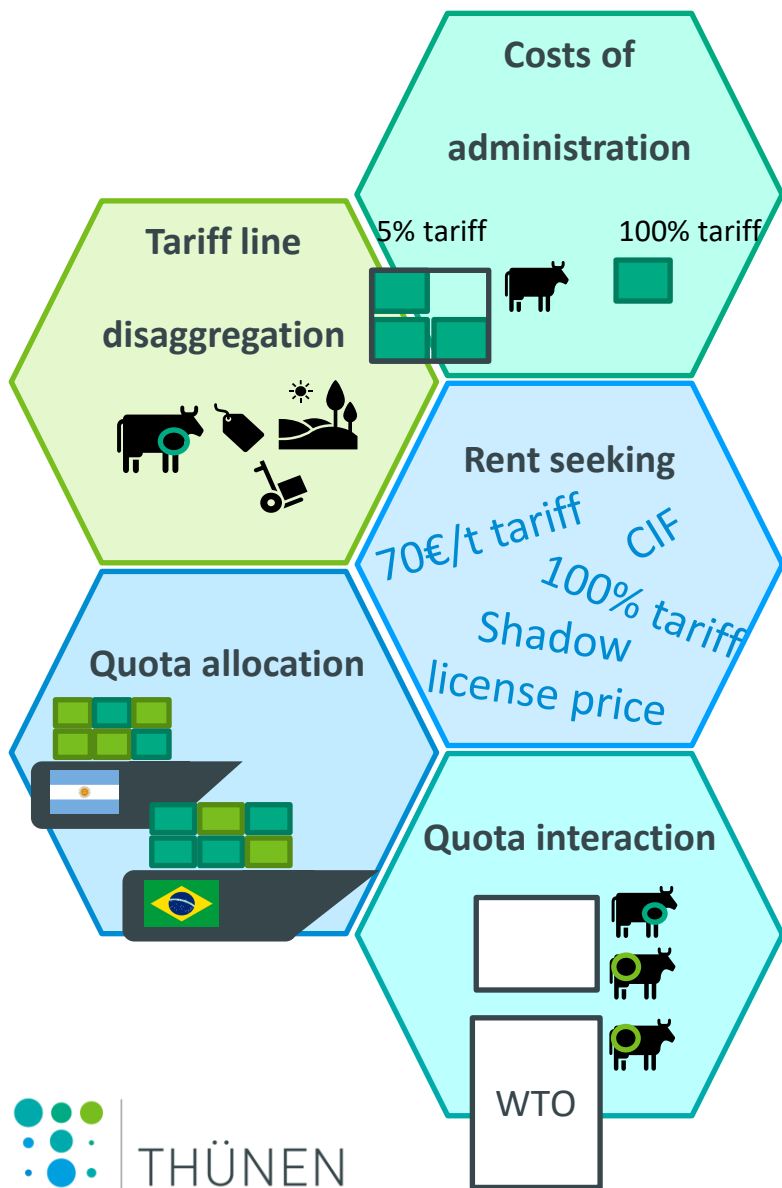


70€/t 

100% 



What's the problem with TRQs?



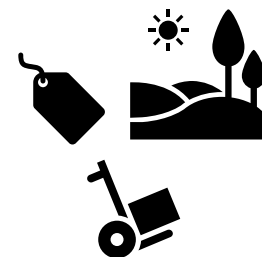
70€/t 



100% 



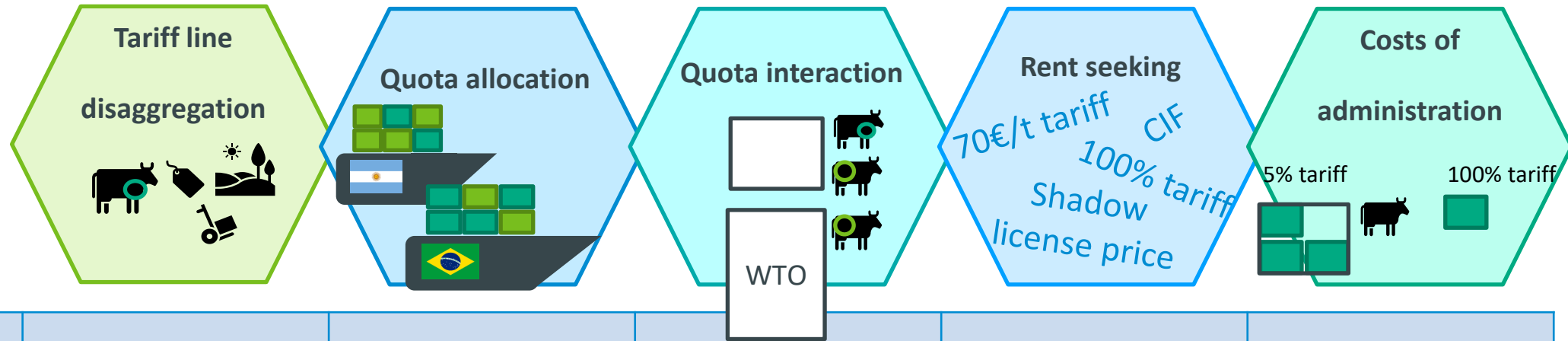
5%



3€/t

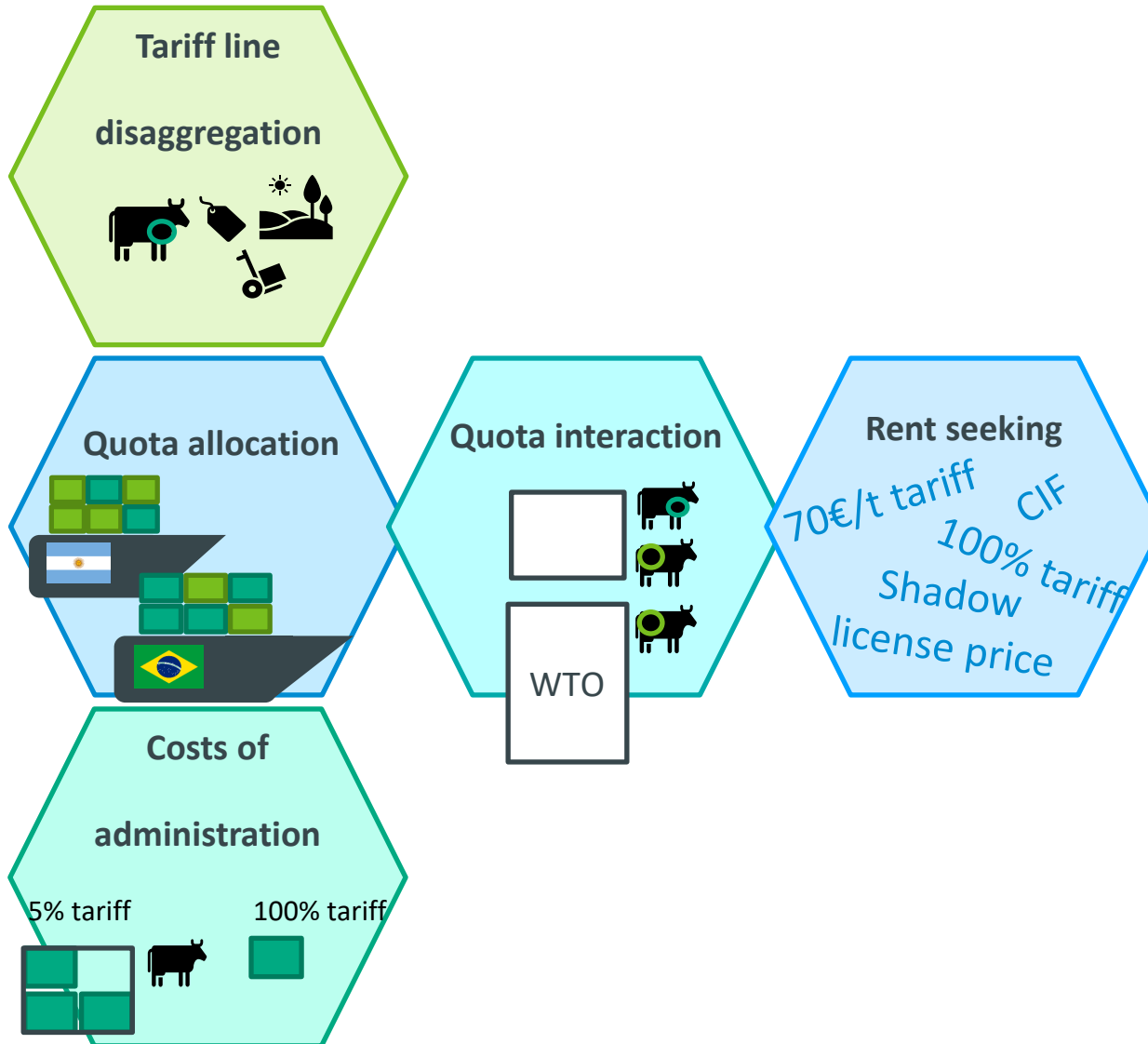


Much of this already gets included in some form



Elbehri and Pearson (2000)	-	-	-	-	-
CAPRI	-	before modeling	-	specific tariffs	-
van der Mensbrugghe, Beghin and Mitchell (2003)	-	-	-	-	-
Grant, Hertel and Rutherford (2009)					
Walmsley, Minor and Strutt, 2022; Walmsley et al., 2018	partly (sector disaggregation)	-	partly (subsequent usage)	-	-
Jafari et al. (2021)	yes	before modeling	-	-	-

How we include it

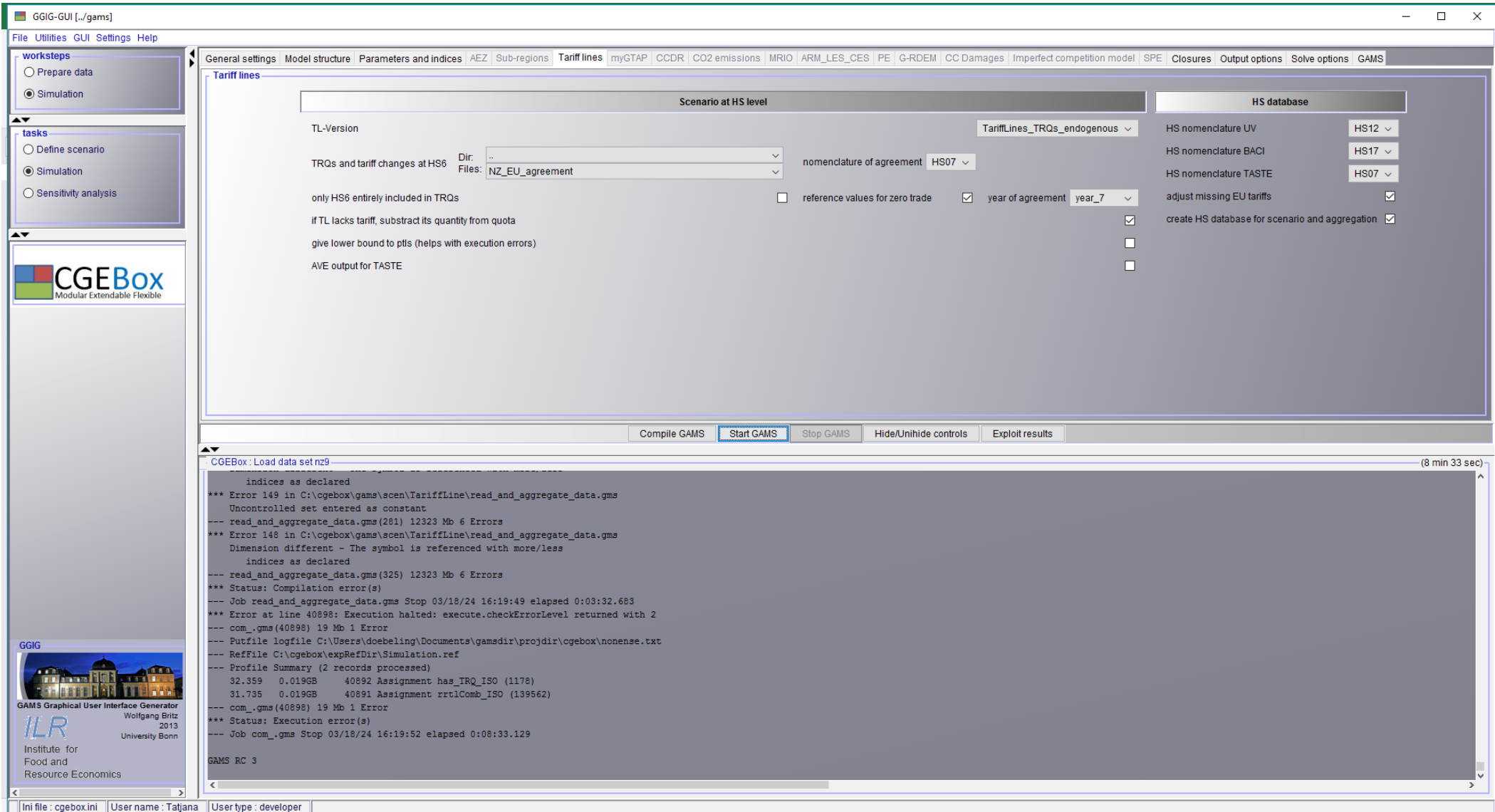


↪ already has a TL module

four additional equations for
the allocation of quota
licenses

Are estimated based on
historic fill rates prior to the
simulation, can be transferred
to similar quotas

What this looks like



What this looks like

Settings | Model structure | Parameters and indices | AEZ | Sub-regions | **Tariff lines** | myGTAP | CCDD | CO2 emissions | MRIO | ARM_LES_CES | PE | G-RDEM | CC Damages | Imperfect competition model | SPE | Closures | Output options | Solve options | GAMS

es

Scenario at HS level		HS database	
TL-Version		TariffLines_TRQs_endogenous	▼
TRQs and tariff changes at HS6	Dir: -- Files: NZ_EU_agreement	nomenclature of agreement	HS07 ▼
only HS6 entirely included in TRQs	☐	reference values for zero trade	☒
if TL lacks tariff, subtract its quantity from quota		year of agreement	year_7 ▼
give lower bound to p _{tl} s (helps with execution errors)			☒
AVE output for TASTE			☐
			☒

Has to be defined:

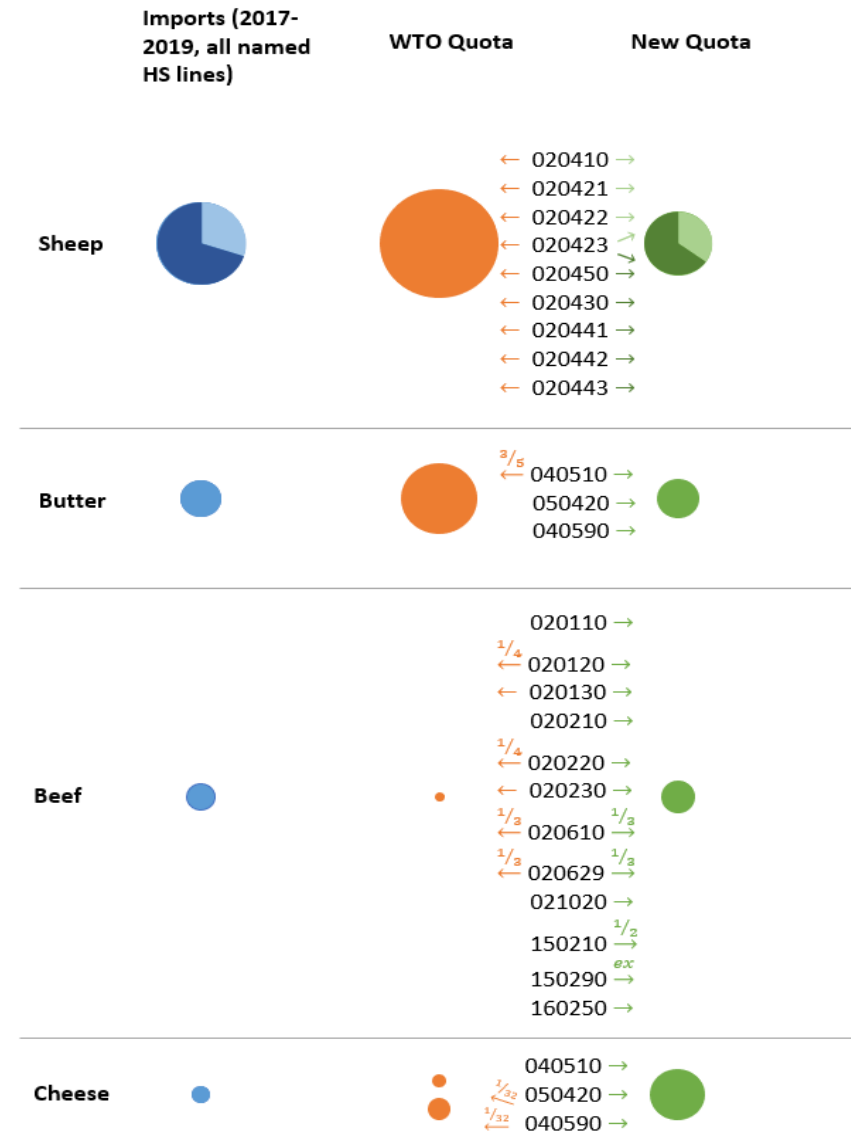
- Quota quantity
- tariff rates inside and outside the quota
- tariff lines included (and those that are only partly included)

Automized:

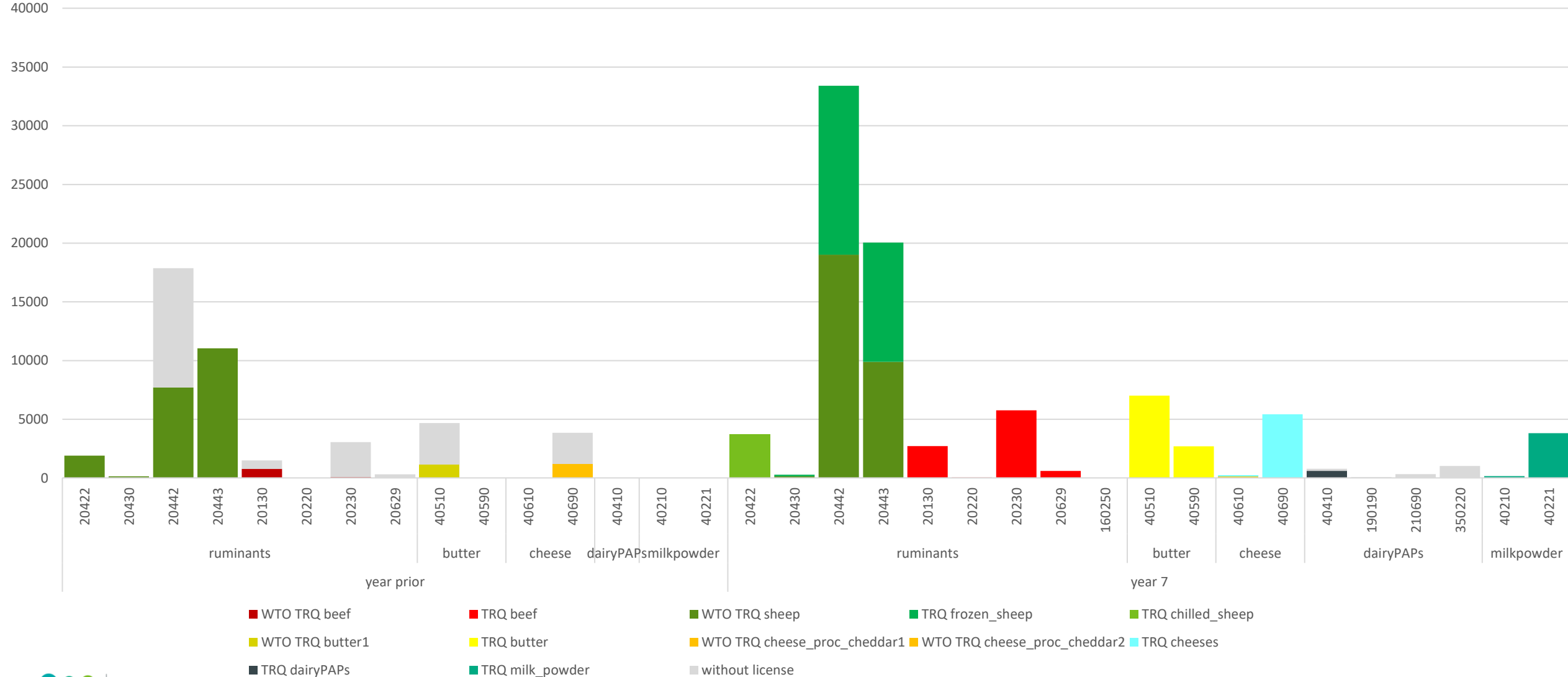
- Data reading (quantities, tariffs, unit values at TL level)
- translation to the right HS-Nomenclature
- data aggregation

Example case: New Zealand – EU Agreement

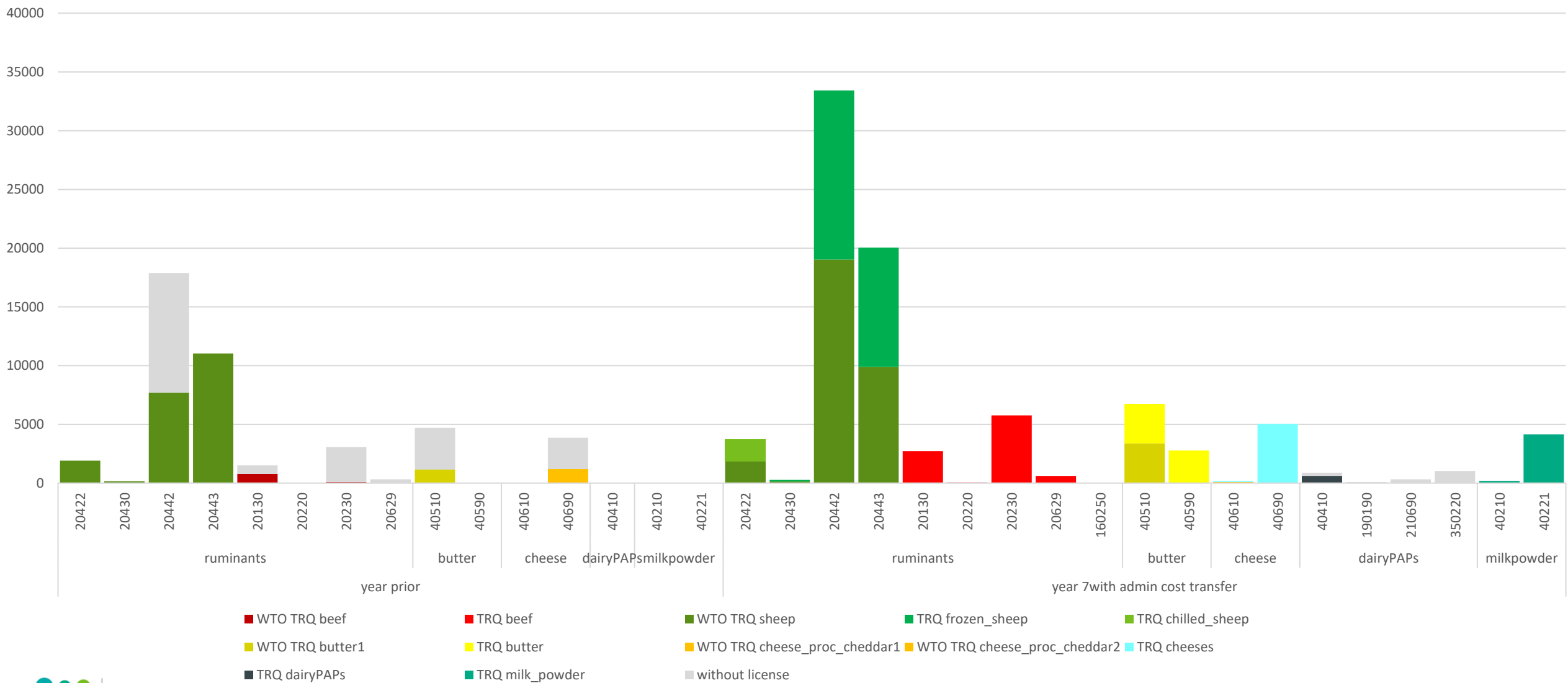
- 4 WTO quotas (beef, sheep, butter, cheese)
 - sheep underfilled despite high potential
- Elimination of most tariffs
- 9 new quotas
 - 5 are partly overlapping with pre-existing WTO quotas
 - 4 liberalize new sectors, including sectors with zero imports
 - Several specific tariffs
- Adaptation of WTO quotas



Results: tariff lines and their license usage before agreement and by 2031



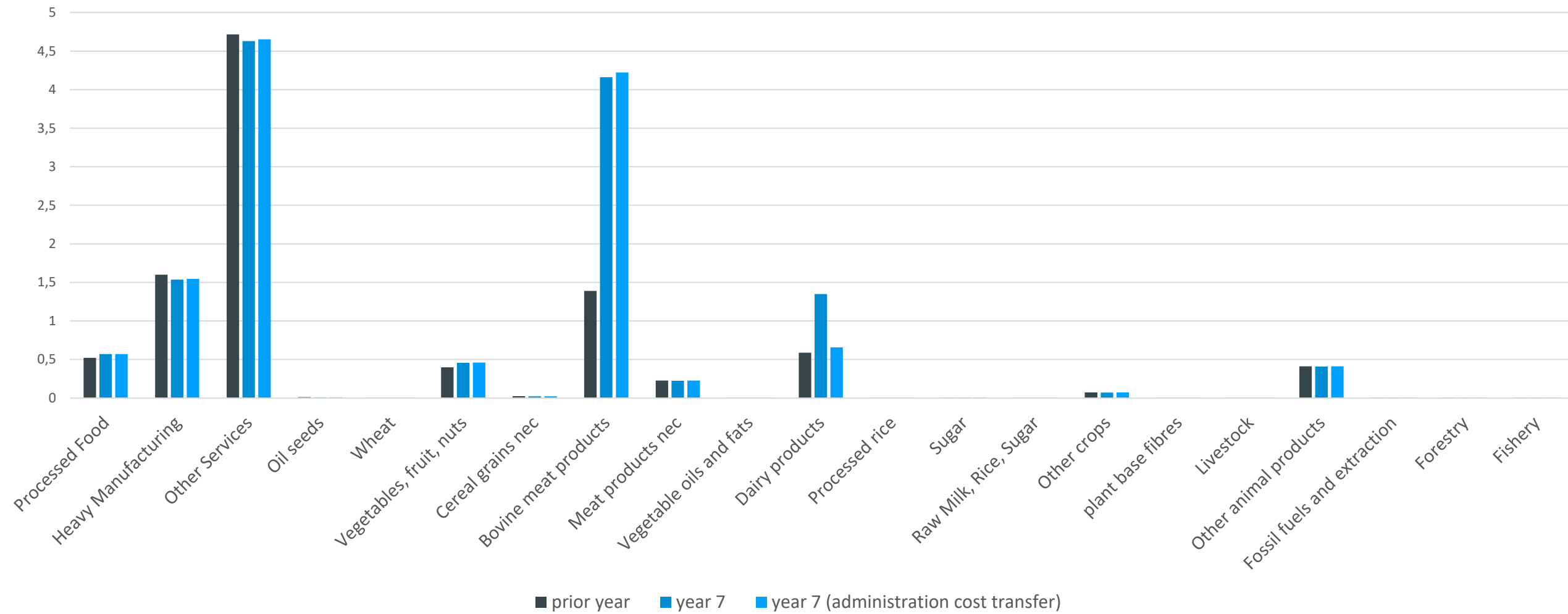
Results: tariff lines and their license usage before agreement and by 2031 – new quotas also get administration costs



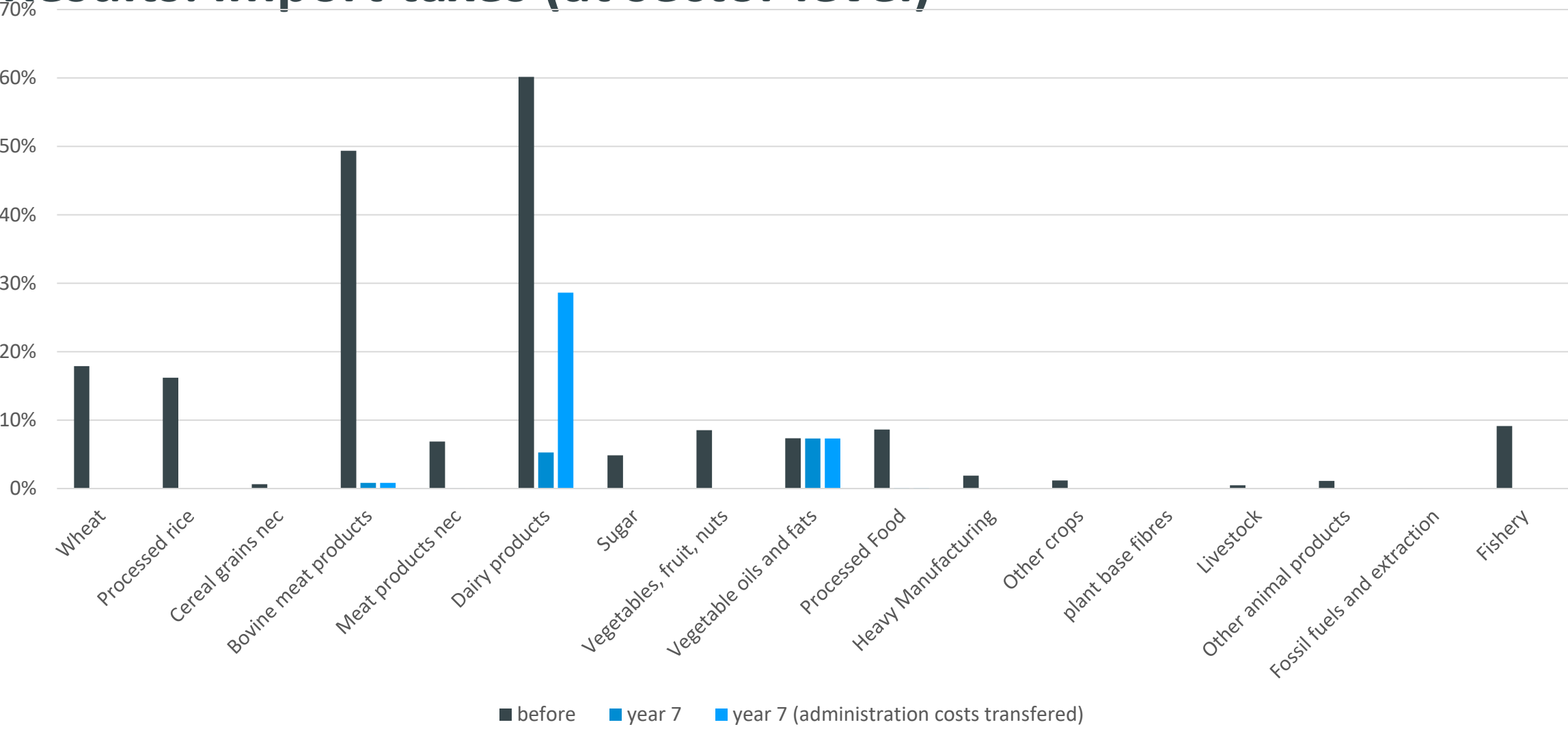
Results: quota fill rates

commodity group	initial imports	TRQ	prior quota	fillrate	new quota	fillrate	fillrate (ac)	final imports
ruminants	35863	NZ_EU_beef			10000	91%	91%	66572-66579
		NZ_EU_chilled_sheep			13300	28%	14%	
		NZ_EU_frozen_sheep			24700	100%	100%	
		WTO_NZ_EU_beef	846	100%	846	0%	0%	
		WTO_NZ_EU_sheep	114184	18%	114184	25%	27%	
butter	7136	NZ_EU_butter			15000	65%	41%	9505-9723
		WTO_NZ_EU_butter1	47177	2%	21000		16%	
		WTO_NZ_EU_butter2			14000			
cheese	3999	NZ_EU_cheeses			24778	22%	21%	5211-5662
		WTO_NZ_EU_cheese_proc_cheddar1	6031	20%				
		WTO_NZ_EU_cheese_proc_cheddar2			5807	2%	2%	
dairyPAPs	817	NZ_EU_dairyPAPs			600	100%	100%	2219-2295
milkpowder	2842	NZ_EU_milk_powder			15000	27%	29%	3976-4311
ethanol		NZ_EU_ethanol			3999			

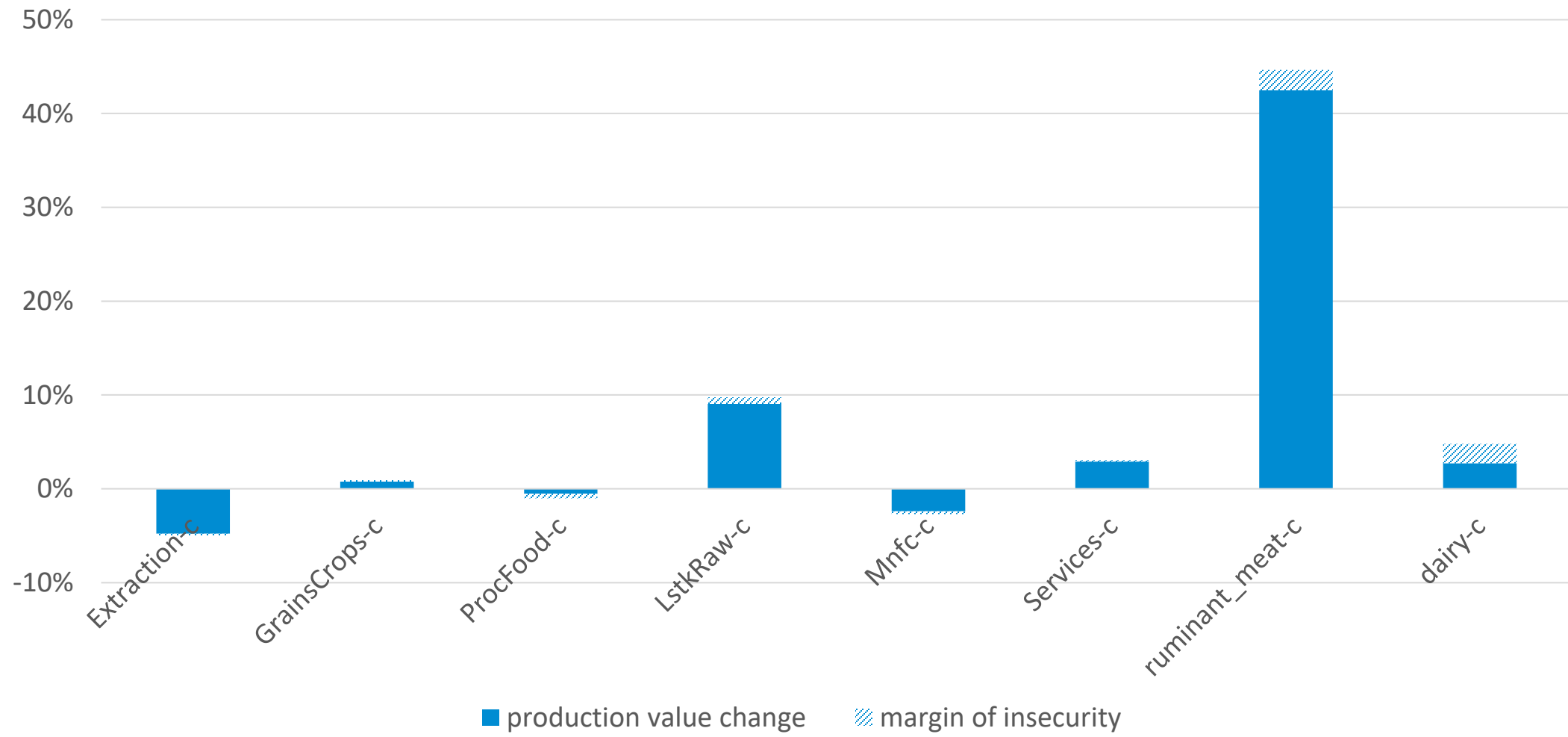
Results: trade from New Zealand to EU



Results: import taxes (at sector level)



Results: production values in New Zealand



Planned next steps

- Paper about to be sent out
- After publication, module becomes available in CGEbox for common usage
- Further improvements are planned (allowing for dynamic analysis, etc)

Thank you!