

Diet-related health consequences of a UK-US trade deal

Florian Freund

Thünen Institute of Market Analysis, Braunschweig

Marco Springmann

Oxford Martin School & Nuffield Department of Population Health, Oxford



Many food related consequences of Brexit

- Interruptions in food supply
- Food will become more expensive
- UK's farmers could suffer...
 - ...from EU trade barriers
 - ...shortage of foreign labor
- Potential increase in UK's food self-sufficiency
- Diet-related health risks

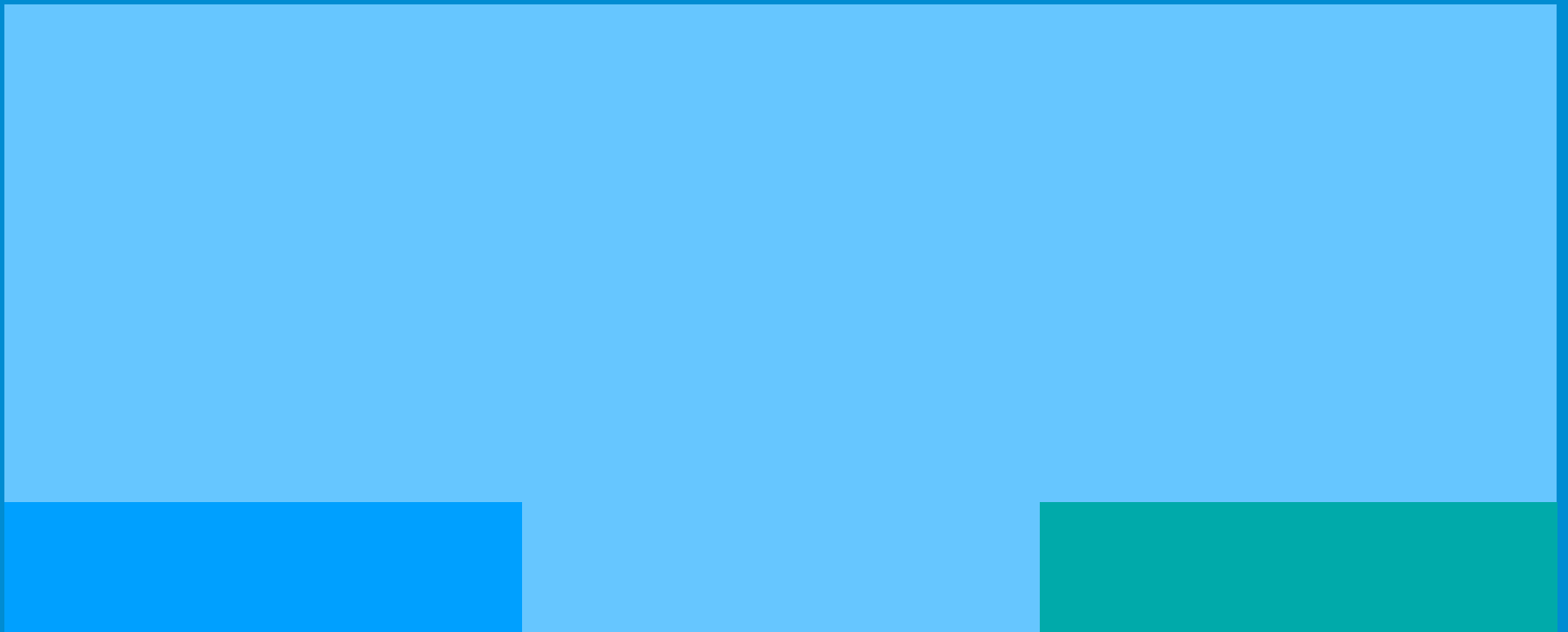
UK-US Trade Deal

- UK-EU negotiations difficult -> Hard Brexit is still looming
- Claim/Hopes that much of trade could be diverted to Commonwealth countries + USA
- But fears of lower food safety and animal welfare standards ('chlorinated chicken', GMO, hormone beef, etc..)
- ...could also affect food prices and incomes and thus diets in the UK!

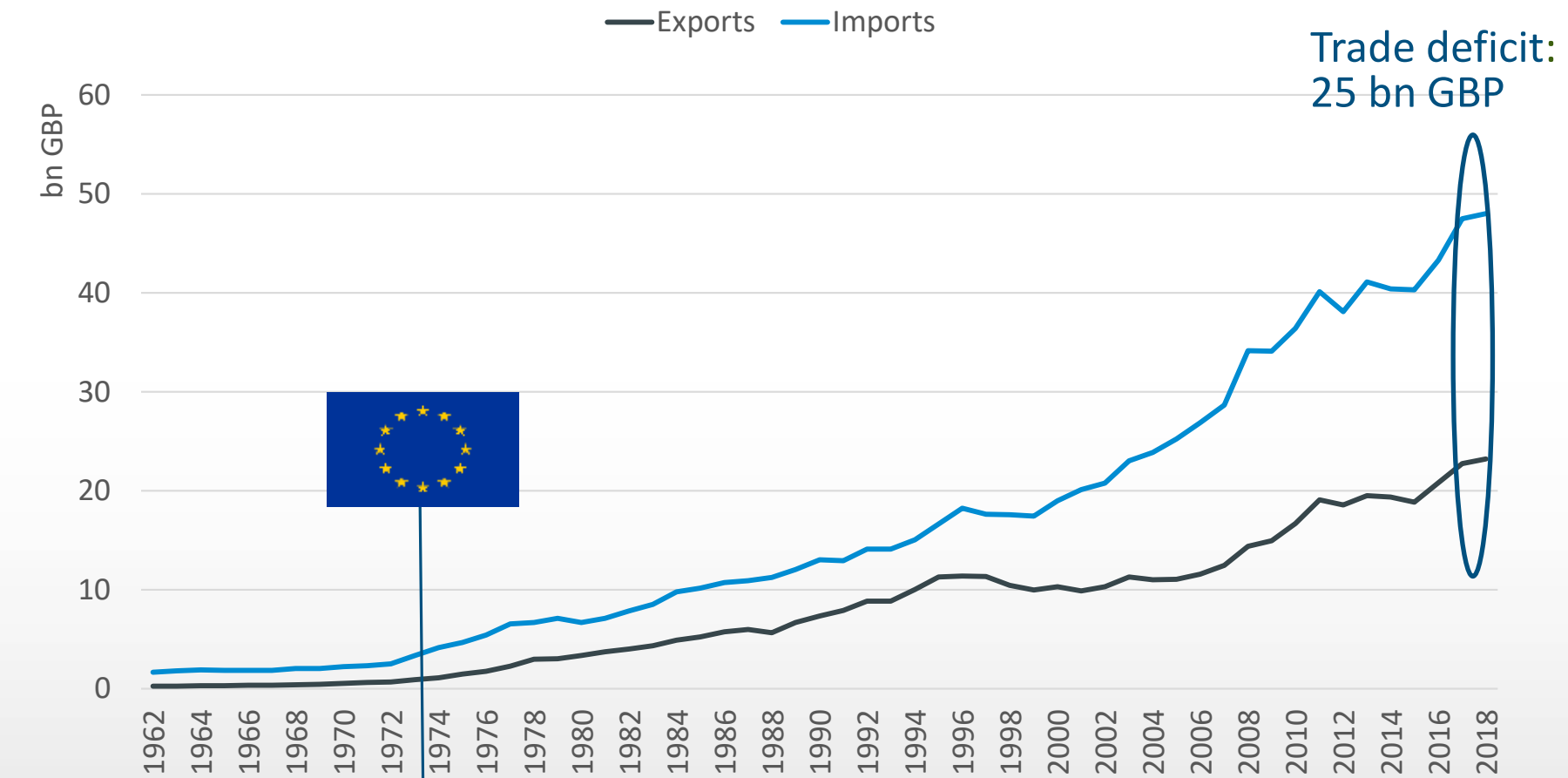
Plan of the talk

- UK's agricultural trade
- Brexit scenarios and modelling framework
- Agricultural and diet-related health outcomes
- Conclusion

Agricultural trade in the UK



UK's agricultural trade with World, 1962-2018



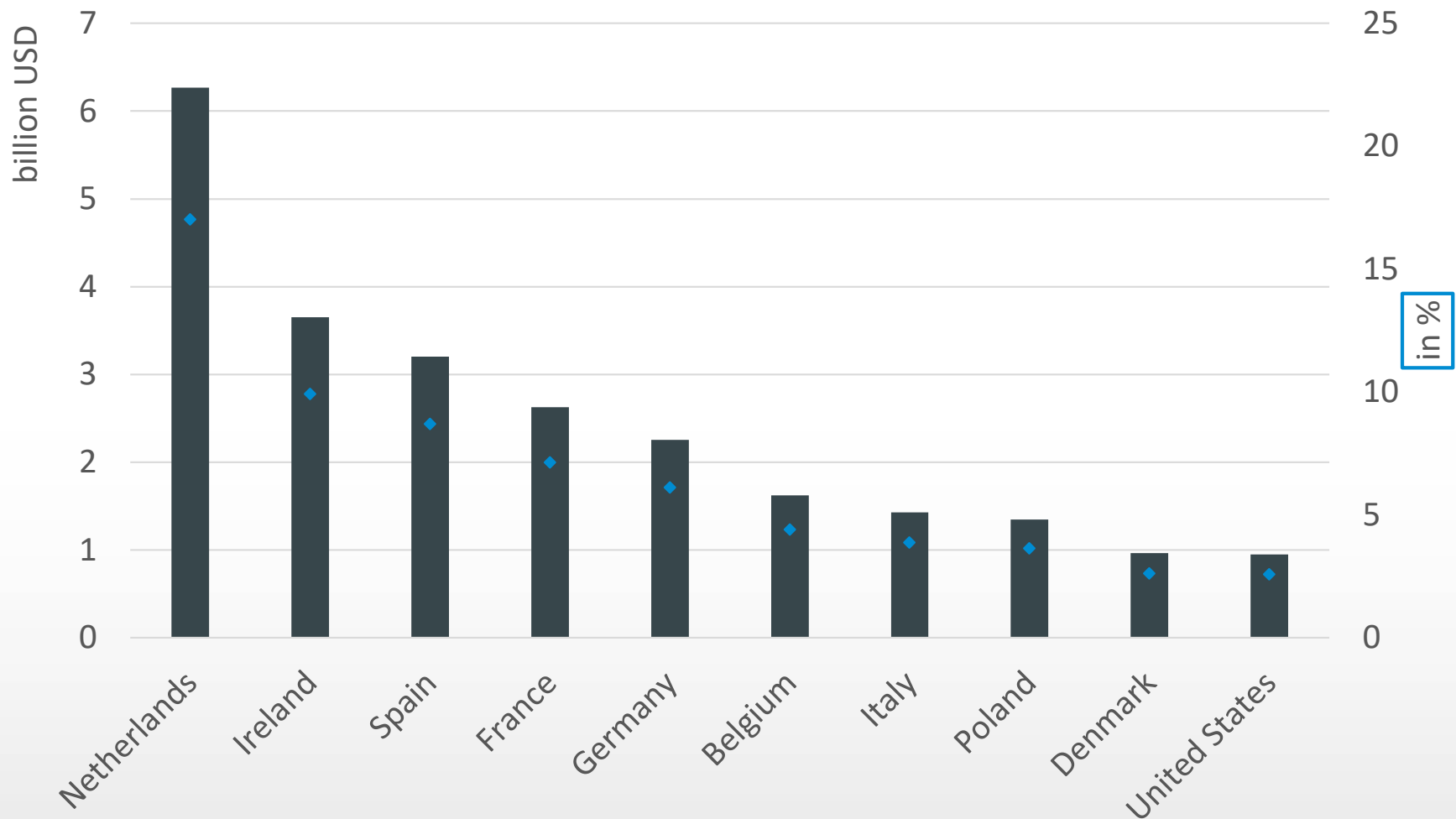
Source: UN Comtrade

UK's agricultural imports, 2018



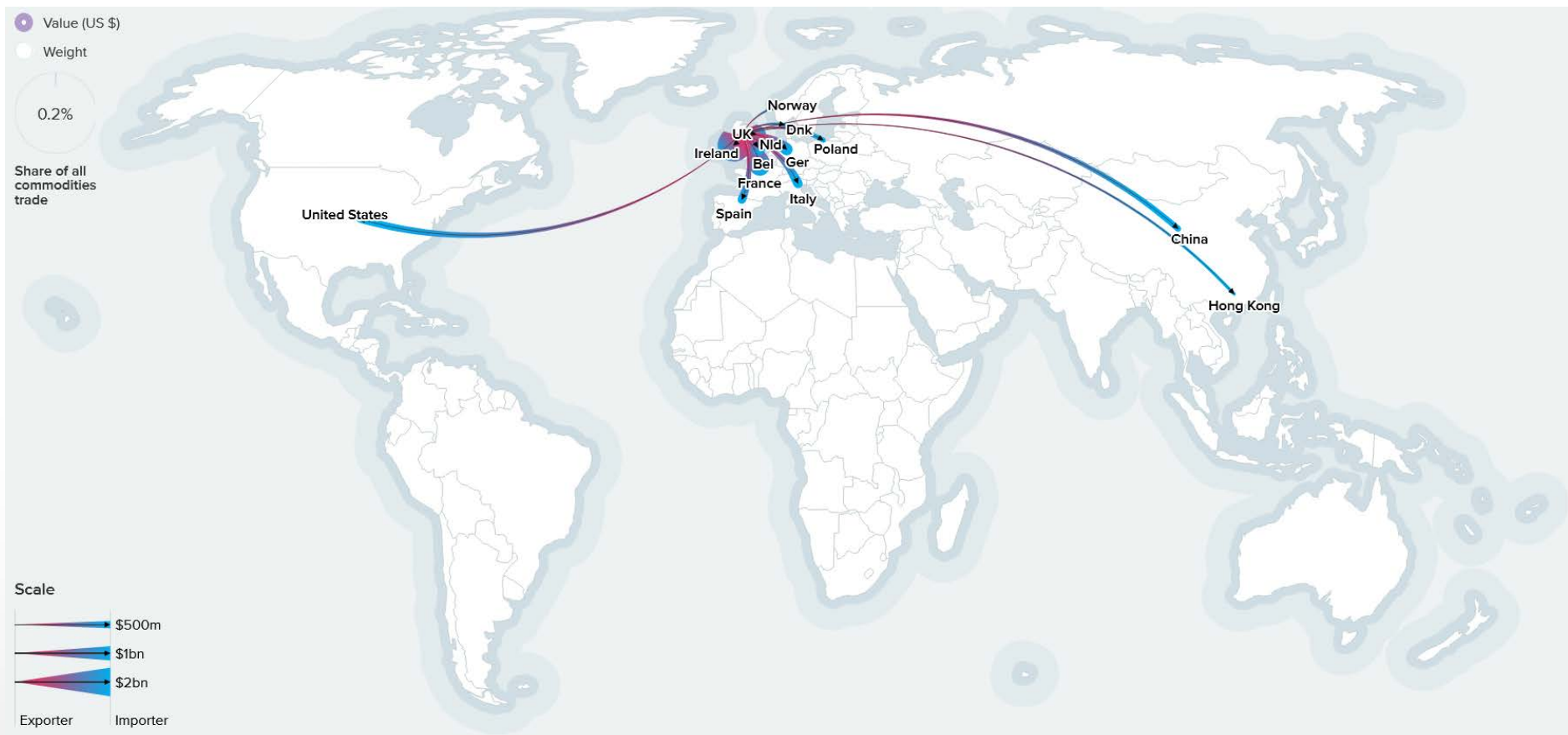
Chatham House (2020), 'resourcetrade.earth', <http://resourcetrade.earth/>; only imports > 300 Mio. USD are shown.

UK's agricultural imports, 2018



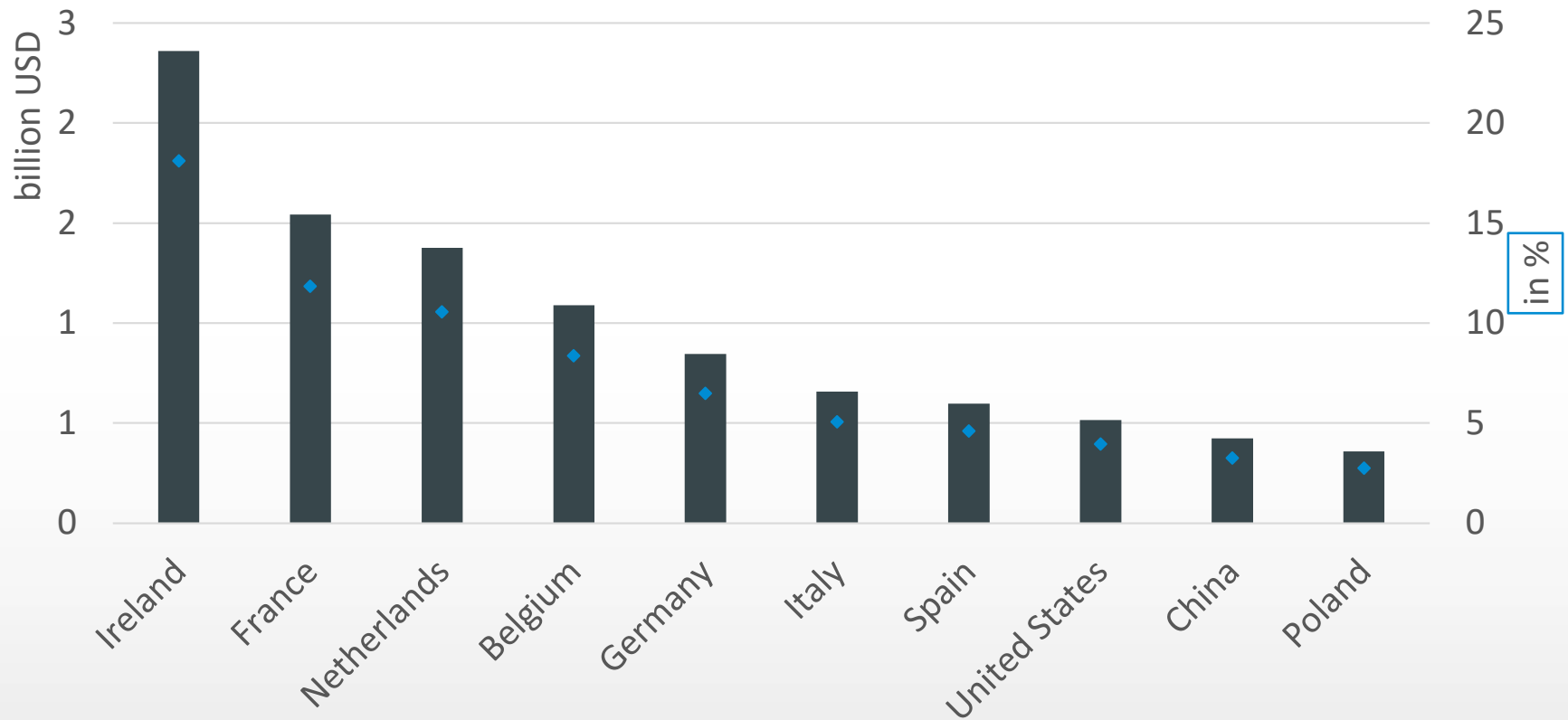
Source: UN Comtrade

UK's agricultural exports, 2018



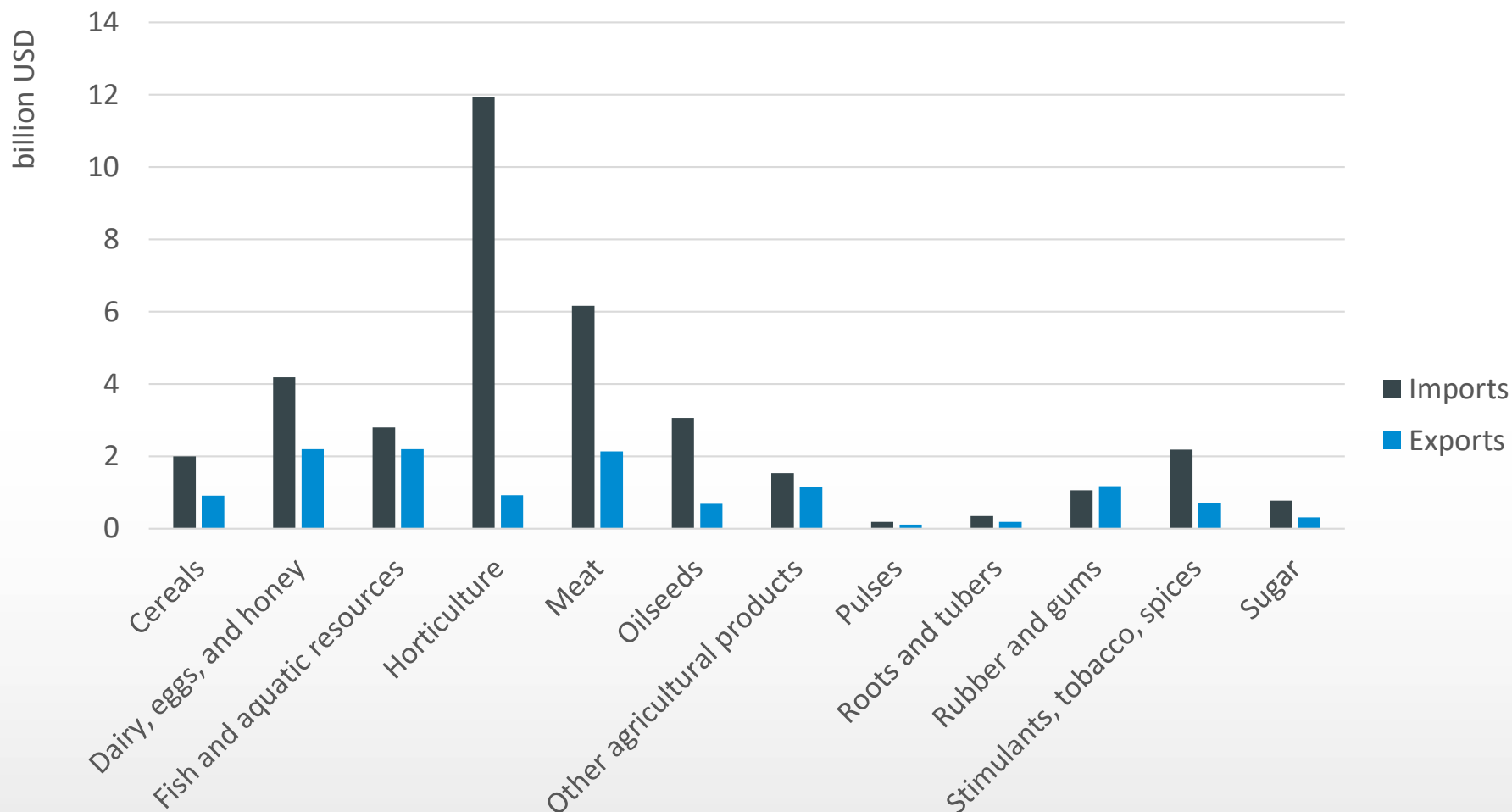
Chatham House (2020), 'resourcetrade.earth', <http://resourcetrade.earth/>; only exports > 200 Mio. USD are shown.

UK's agricultural exports, 2018



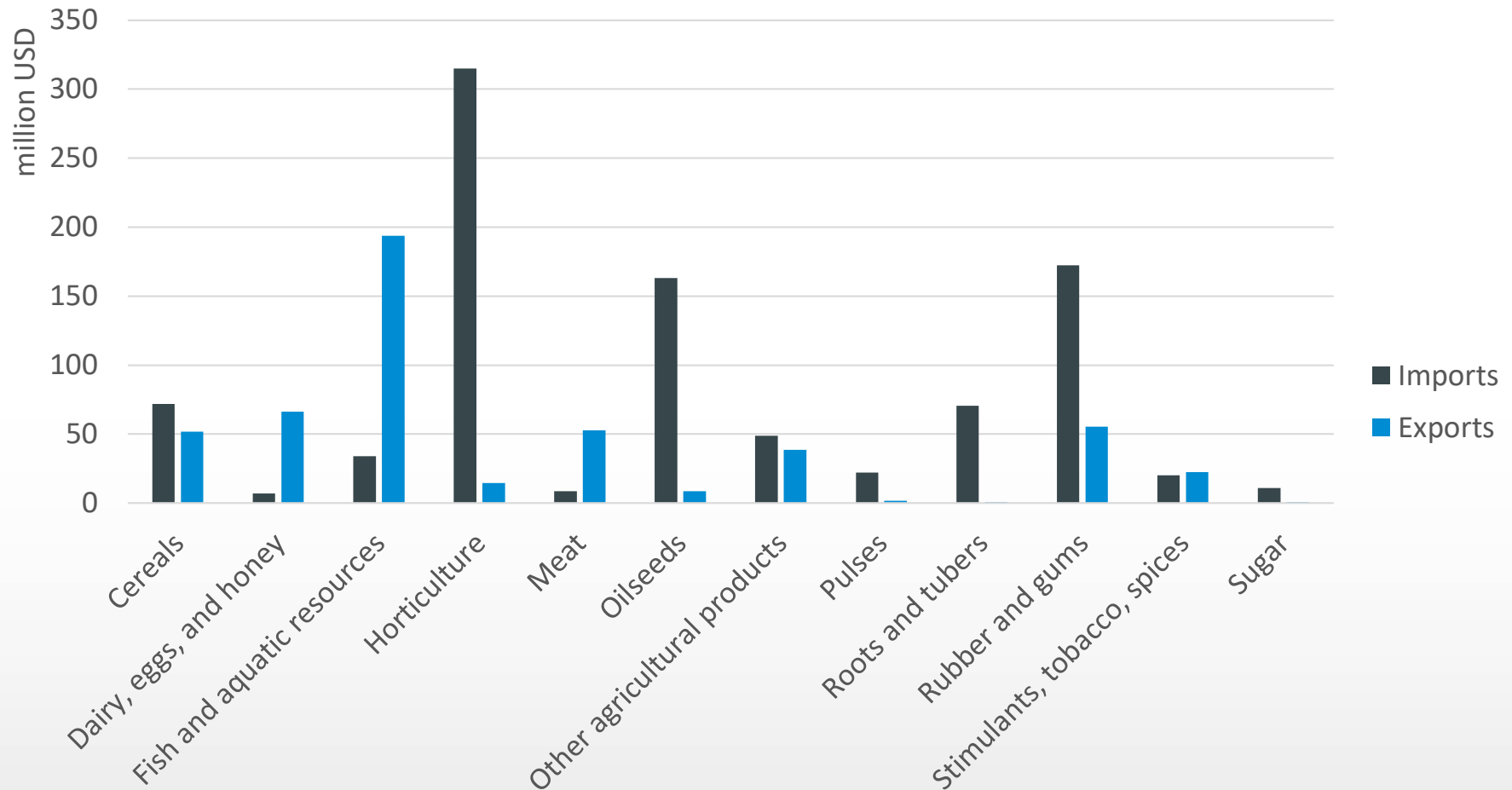
Source: UN Comtrade

UK's agricultural trade with world, Products, 2018



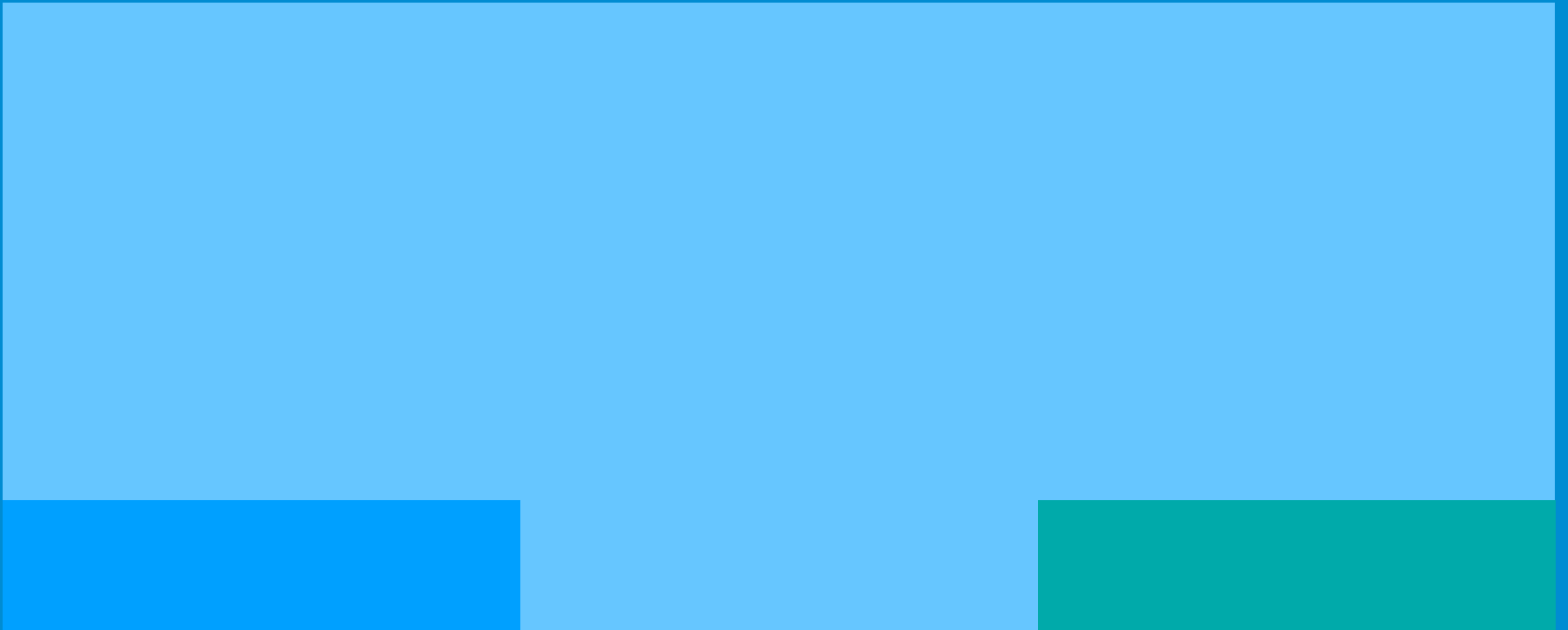
Source: UN Comtrade

UK's agricultural trade with USA, Products, 2018



Source: UN Comtrade

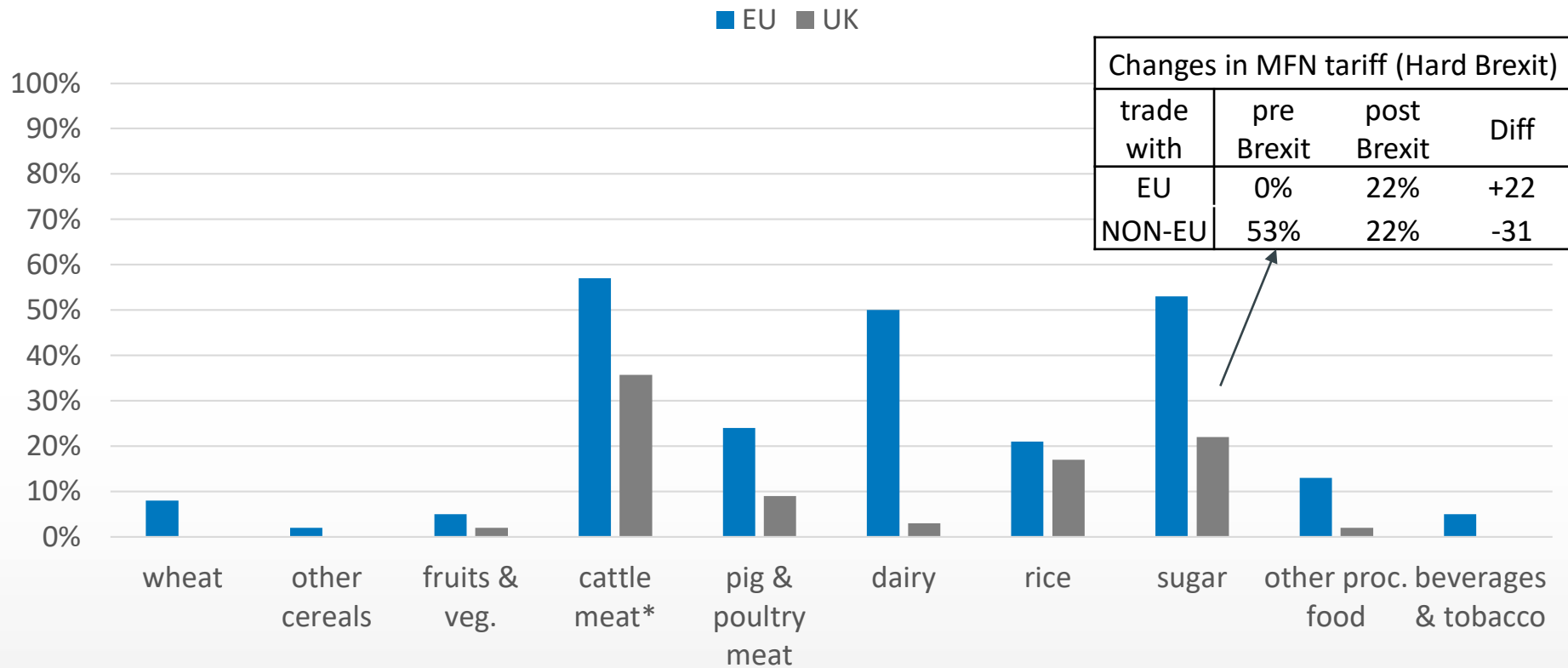
Scenarios and Methodology



How might future trade relations of the UK look like?

- Scenarios:
 - **“Soft”**: Free trade agreement
 - > Zero tariffs with EU but increase in non-tariff trade costs
 - > Complete roll-over of EU trade agreements
 - **“Soft-US”**: Same as Soft Brexit but with UK-US-FTA
 - **“Hard”**: No-deal with fallback to WTO position
 - > MFN tariffs as announced and increase in non-tariff trade costs
 - > Partial roll-over of EU trade agreements
 - **“Hard-US”**: Same as Hard Brexit but with UK-US-FTA

Most Favoured Nations (MFN) tariffs between UK and EU in case of hard Brexit



Source: own calculation based on TASTE; Trade weighted ad-valorem tariff equivalents.

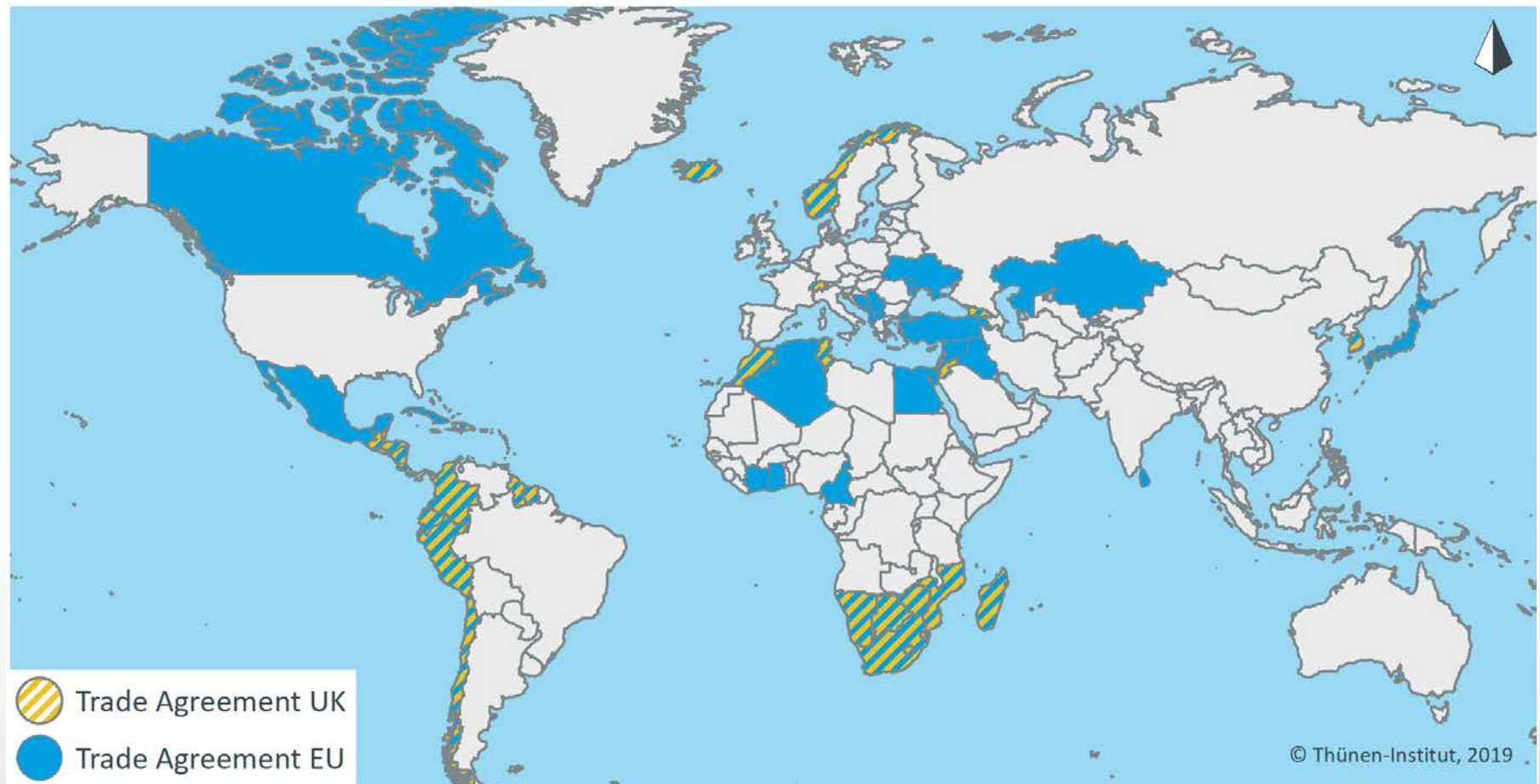
Info:*including goat and sheep meat; plus 10% non-tariff trade cost increase across the board

Non tariff measures and MFN Shocks

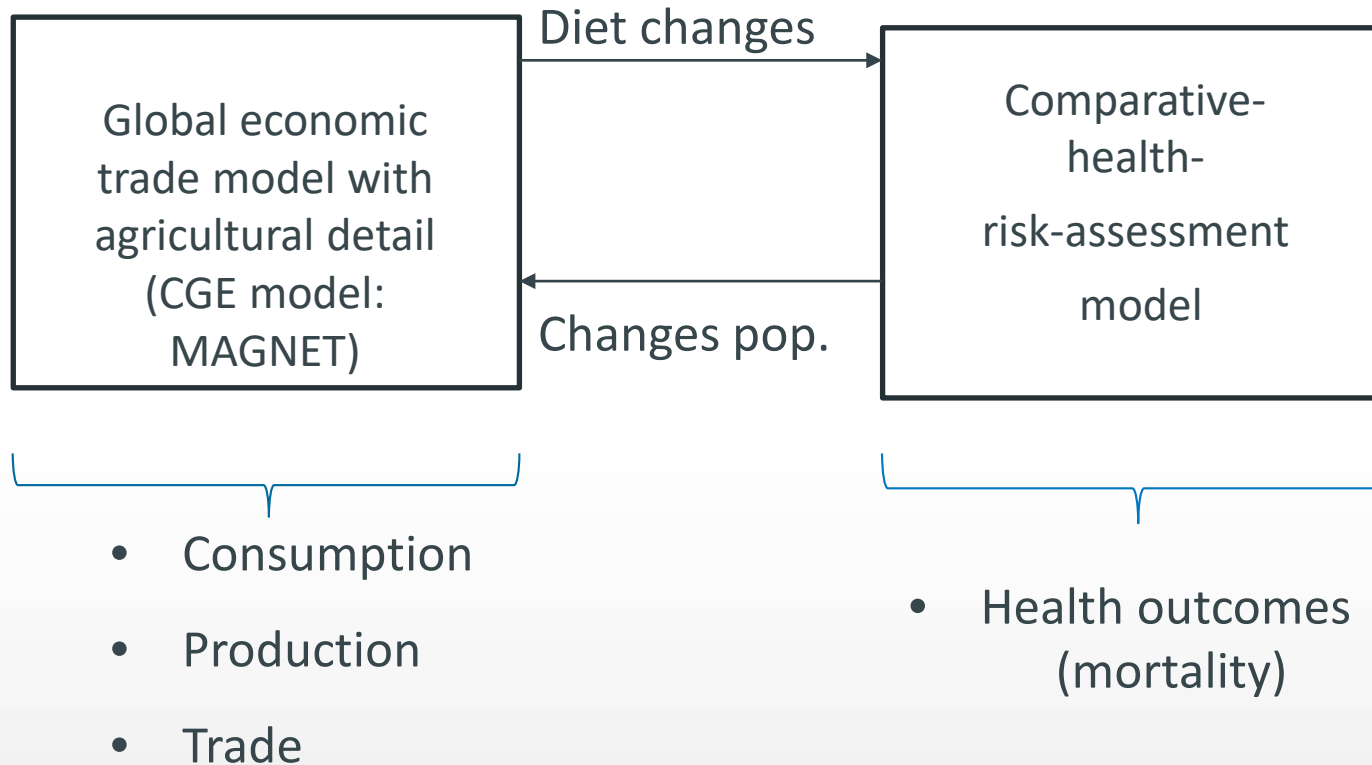
	NTMs			MFN tariffs	
	SOFT UK-EU	HARD UK-EU	UK-USA	MFN UK	MFN EU
wheat	-7.53	-22.58	30.10	0	7.6
other grains	-7.53	-22.58	30.10	0	1.85
veg&fruits	-7.53	-22.58	30.10	0.19	4.9
oilseeds	-7.53	-22.58	30.10	0	0
sugar plants	-7.53	-22.58	30.10	0	39.03
other crops	-7.53	-22.58	30.10	0.01	2.32
cattle meat	-7.53	-22.58	30.10	37.55	56.69
other meat	-7.53	-22.58	30.10	6.87	24.4
veg. oil	-7.53	-22.58	30.10	0.43	4.35
dairy	-7.53	-22.58	30.10	4.92	49.74
rice	-7.53	-22.58	30.10	16.69	20.88
sugar	-7.53	-22.58	30.10	18.27	52.67
other proc. food	-7.53	-22.58	30.10	0.55	13.42
bev&tobacco	-7.53	-22.58	30.10	0.04	5.29
manufacturing	-1.99	-6.25	7.34	2.06	2.74
chemicals	-3.76	-11.29	15.06	0.08	2.54
services	-1.40	-2.93	4.23	0	0

Based on Dhingra(2017); ¼ (¾) of reducible NTMs in Soft (Hard) Brexit

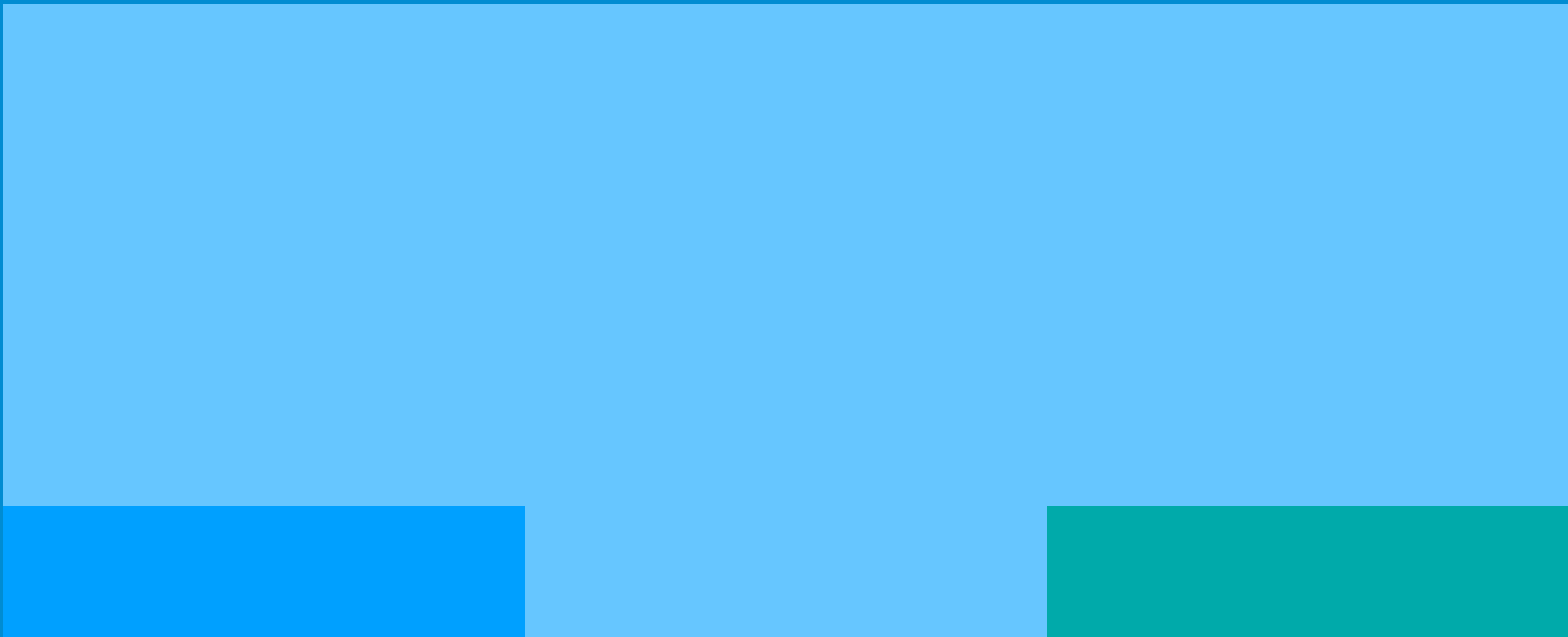
Post-Hard Brexit Trade agreements: EU vs. UK



Modelling approach and linkages



Results



Changes in UK's net-exports (exports-imports), in 2011 mn US-\$, 2027

	Soft			Soft-US			Hard			Hard-US		
	World	EU27	USA	World	EU27	USA	World	EU27	USA	World	EU27	USA
wheat	-98	-94	1	-365	-77	-329	-311	-317	7	-541	-284	-301
other grain	-20	-12	-1	-25	-11	-8	-63	-56	-1	-68	-55	-8
veg&fruits	-87	302	-26	-146	440	-394	-292	93	-26	-350	232	-394
oilseeds	-23	-43	3	-129	-41	-202	-152	-173	3	-256	-168	-201
sugar plants	0	0	0	0	0	0	-2	-2	0	-2	-1	0
other crops	-67	290	-11	-128	337	-195	-196	159	-11	-252	210	-193
cattle meat	-63	53	-3	-420	94	-476	562	1046	-26	188	1019	-462
other meat	694	1179	-9	198	1379	-773	2973	5537	-127	2257	5557	-1055
veg. oil	6	41	-6	-96	62	-204	-17	119	-23	-106	126	-203
dairy	53	85	-6	222	368	-116	952	2179	-225	1061	2343	-422
rice	-5	13	-6	-41	68	-141	6	115	-29	-40	136	-178
sugar	-47	0	-1	-88	-9	-36	-6	279	4	-38	265	-5
other proc. food	-76	505	-83	-629	916	-1177	1425	4522	-727	928	4799	-1719
bev&tobacco	-239	-145	-15	112	-116	351	-185	492	-137	174	509	245

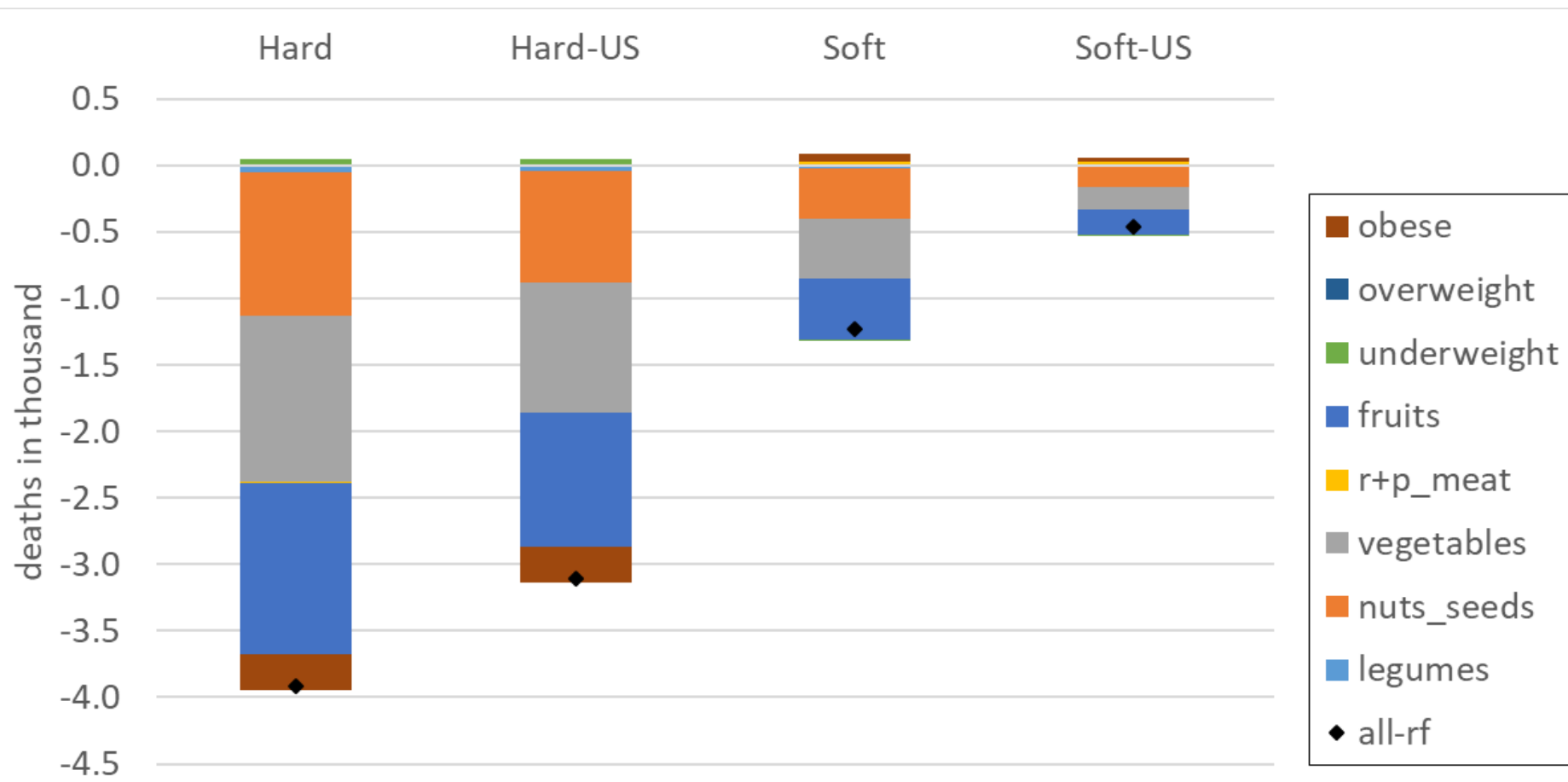
Source: own calculations based on MAGNET.

Changes in consumption, 2027, in %

	Soft	Soft-US	Hard	Hard-US
wheat	2.26	1.51	1.55	0.88
other grain	1.63	1.03	1.05	0.64
veg&fruits	-3.32	-2.59	-2.57	-1.19
oilseeds	2.19	1.76	1.76	0.96
other crops	-0.49	-0.66	-0.64	-0.24
cattle meat	1.77	1.41	1.16	0.85
other meat	1.59	1.08	1.06	0.71
veg. oil	1.09	0.62	0.77	0.47
dairy	0.62	0.67	0.44	-0.03
rice	-0.35	-0.52	-0.63	-0.52
sugar	0.03	0.77	0.78	-0.19
other proc. food	-0.13	-0.44	-0.53	-0.36
bev&tobacco	-0.98	1.17	1.17	-0.71

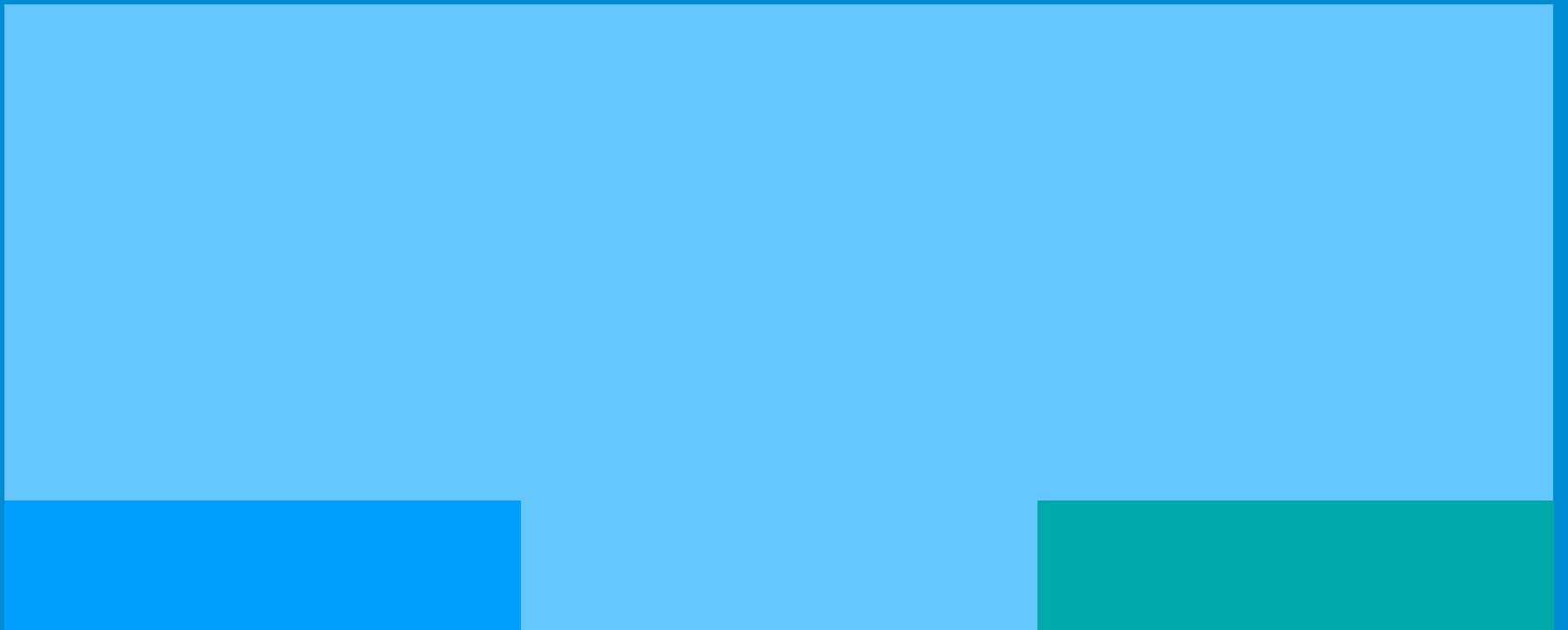
Source: own calculations based on MAGNET.

Changes in diet-related deaths, UK, 2027



Source: own calculations .

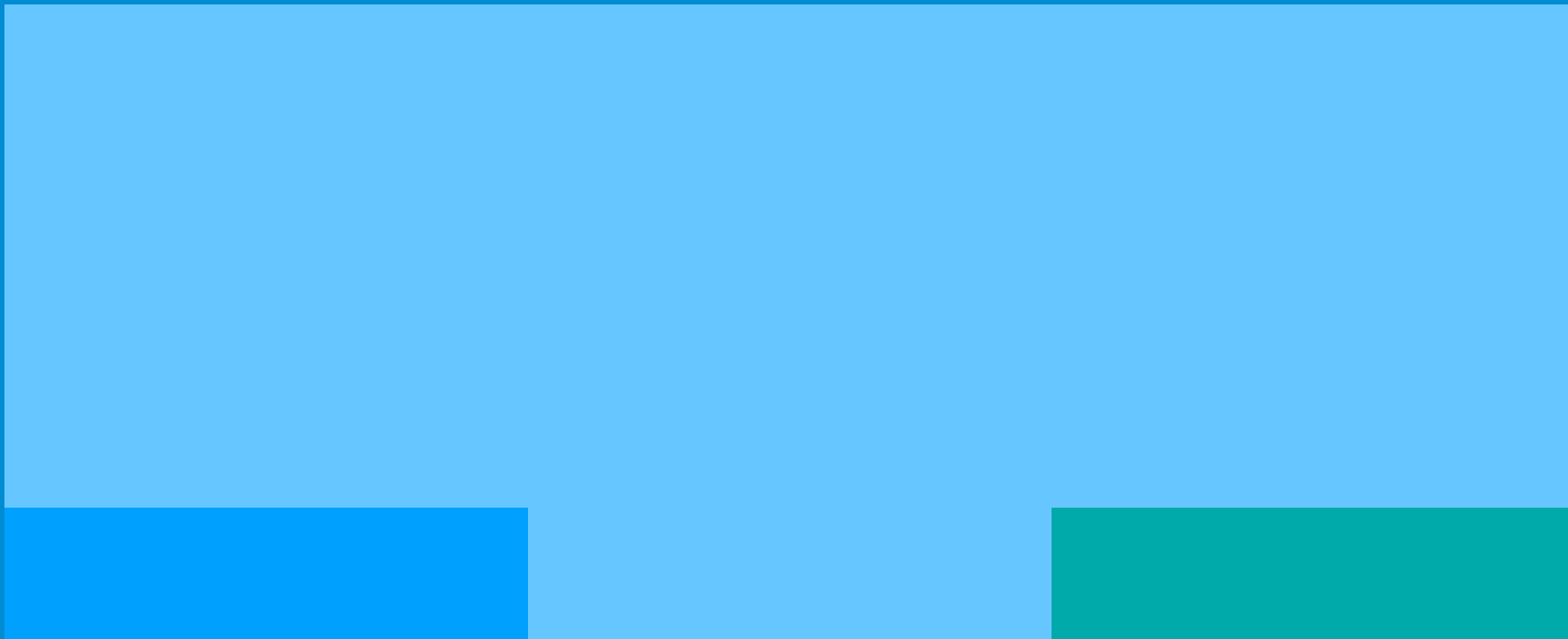
Conclusions



Conclusion

- We combine a economic and health modeling framework to analyse dietary health effects that result from Brexit and UK-US trade agreement
- US-UK TA could alleviate some of the potential detrimental impacts that Brexit on dietary health
- Most of the beneficial impacts due to increased consumption of vegetables, fruits and nuts

Appendix



Sensitivity Analysis

