

The distributional and nutritional impacts and mitigation potential of emission-based food taxes in the UK

Article

Supplemental Material

Kehlbacher, A., Tiffin, R., Briggs, A., Berners-Lee, M. and Scarborough, P. (2016) The distributional and nutritional impacts and mitigation potential of emission-based food taxes in the UK. *Climatic Change*, 137 (1-2). pp. 121-141. ISSN 0165-0009 doi: <https://doi.org/10.1007/s10584-016-1673-6>
Available at <https://centaur.reading.ac.uk/63881/>

It is advisable to refer to the publisher's version if you intend to cite from the work. See [Guidance on citing](#).

To link to this article DOI: <http://dx.doi.org/10.1007/s10584-016-1673-6>

Publisher: Springer

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the [End User Agreement](#).

www.reading.ac.uk/centaur

CentAUR

Central Archive at the University of Reading

Reading's research outputs online

Table 1: Carbon conversion factors (in kgCO₂e/kg)

	SEC1	SEC2	SEC3	SEC4	OTHER
Milk	2.508	2.500	2.521	2.789	2.090
Other milk products	3.182	3.378	3.400	3.331	3.379
Cream	5.770	5.770	5.770	5.770	5.770
Cheese	13.546	13.546	13.546	13.546	13.546
Eggs	4.903	4.903	4.903	4.903	4.903
Pork	10.291	10.291	10.291	10.291	10.291
Beef	25.127	25.127	25.127	25.127	25.127
Poultry	4.055	4.055	4.055	4.055	4.055
Lamb	15.528	15.528	15.528	15.528	15.528
Other meat	10.048	10.618	10.710	11.212	11.475
Fish	1.453	1.364	1.209	1.362	1.013
Breads and starches	7.746	7.783	7.906	8.081	7.961
Cakes, buns, pastries, biscuits	0.843	0.816	0.890	0.993	0.868
Animal fats	10.958	10.958	10.958	10.958	10.958
Vegetable fats	2.303	2.303	2.303	2.303	2.303
Sugar and preserves	2.545	2.545	2.545	2.545	2.545
Sweets	4.354	4.354	4.354	4.354	4.354
Tinned/dried fruit & nuts	1.597	1.433	1.364	1.319	1.701
Fresh fruit	1.656	1.702	1.699	1.724	1.689
Potatoes	0.498	0.498	0.498	0.498	0.498
Canned veg	2.945	2.910	2.895	2.898	2.922
Fresh veg	2.987	3.185	3.162	3.193	3.247
Fruit juice	1.607	1.607	1.607	1.607	1.607
Soft drinks & water	0.855	0.867	0.866	0.870	0.869
Tea & Cocoa	6.780	6.780	6.780	6.780	6.780
Coffee drinks	18.070	18.070	18.070	18.070	18.070
Beer	1.347	1.347	1.347	1.347	1.347
Wine	2.408	2.408	2.408	2.408	2.408
Other alcohol	3.157	3.157	3.157	3.157	3.157

Table 2: Average tax rate (in pence/gramme) and resultant proportional price changes (in %)

	Food category	Tax rate	SEC1	SEC2	SEC3	SEC4	OTHER
Scenario A	Milk	0.007	10.00	10.13	10.32	11.94	8.74
	Other milk	0.009	4.15	4.51	4.83	4.95	4.78
	Cream	0.016	4.61	4.67	4.70	4.82	4.85
	Cheese	0.038	5.26	5.55	5.73	6.02	5.68
	Eggs	0.014	0.07	0.07	0.08	0.09	0.08
	Pork	0.029	4.44	4.62	4.98	5.39	4.95
	Beef	0.071	10.63	11.18	11.45	12.41	11.27
	Poultry	0.012	2.16	2.26	2.51	2.81	2.65
	Lamb	0.044	5.08	5.69	6.64	6.21	5.61
	Other Meat	0.031	4.93	5.54	6.22	7.17	6.80
	Fish	0.004	0.46	0.50	0.48	0.61	0.37
	Bread etc.	0.022	8.34	8.32	9.53	10.22	10.44
	Cakes etc.	0.003	0.50	0.50	0.59	0.69	0.60
	Animal fats	0.031	6.83	6.49	7.14	7.25	7.10
	Veg. fats	0.007	1.87	2.00	2.22	2.40	2.28
	Sugar etc.	0.007	3.66	3.82	4.68	4.91	4.33
	Sweets	0.012	1.48	1.57	1.65	1.75	1.71
	Tinned/dried fruit & nuts	0.004	0.90	0.84	0.96	1.01	1.41
	Fresh fruit	0.005	2.08	2.38	2.49	2.77	2.45
	Potatoes	0.001	0.91	0.87	0.99	1.02	1.09
	Canned veg	0.008	3.33	3.47	3.59	4.24	4.09
	Fresh veg	0.009	3.23	3.72	3.91	4.31	4.30
	Fruit juice	0.005	3.24	3.67	3.81	4.35	3.85
	Soft drinks	0.002	4.45	4.68	4.88	4.65	4.67
	Tea & Cocoa	0.019	2.49	2.75	2.98	3.07	3.06
	Coffee drinks	0.051	2.99	3.24	3.61	3.49	3.42
	Beer	0.004	1.84	1.89	1.95	2.09	2.09
	Wine	0.007	0.96	1.05	1.13	1.18	1.12
	Other alcohol	0.009	0.66	0.73	0.73	0.81	0.73
Scenario B	Cheese	0.038	5.26	5.55	5.74	6.02	5.68
	Pork	0.029	4.44	4.62	4.98	5.39	4.95
	Beef	0.071	10.63	11.18	11.45	12.41	11.27
	Lamb	0.044	5.08	5.69	6.64	6.22	5.61
	Other Meat	0.028	4.93	5.54	6.22	7.16	6.80
	Bread etc.	0.022	8.34	8.32	9.53	10.22	10.44
	Animal fats	0.031	6.84	6.49	7.14	7.25	7.10
	Tea & Cocoa	0.019	2.49	2.75	2.98	3.07	3.06
	Coffee drinks	0.051	2.99	3.24	3.61	3.49	3.42

Table 3: Annual food emissions in ktCO₂e

		Before tax		After Tax		Change	
		Mean	95% CI	Mean	95% CI	Mean	95% CI
A	SEC1	16,869	16,831	15,961	15,918	-5.38	-5.43
	SEC2	23,865	23,816	22,541	22,485	-5.55	-5.59
	SEC3	17,868	17,826	16,717	16,657	-6.44	-6.55
	SEC4	30,405	30,346	28,195	28,131	-7.27	-7.30
	OTHER	37,626	37,551	35,197	35,124	-6.46	-6.44
	Total	126,634	126,369	118,611	118,315	-6.34	-6.37
B	SEC1	16,869	16,831	16,292	16,251	-3.42	-3.45
	SEC2	23,865	23,816	23,020	22,966	-3.54	-3.57
	SEC3	17,868	17,826	17,058	17,004	-4.53	-4.61
	SEC4	30,405	30,346	28,894	28,833	-4.97	-4.99
	OTHER	37,626	37,551	35,878	35,806	-4.65	-4.65
	Total	126,634	126,369	121,142	120,860	-4.34	-4.36