Supplementary Materials

Population-weighted results

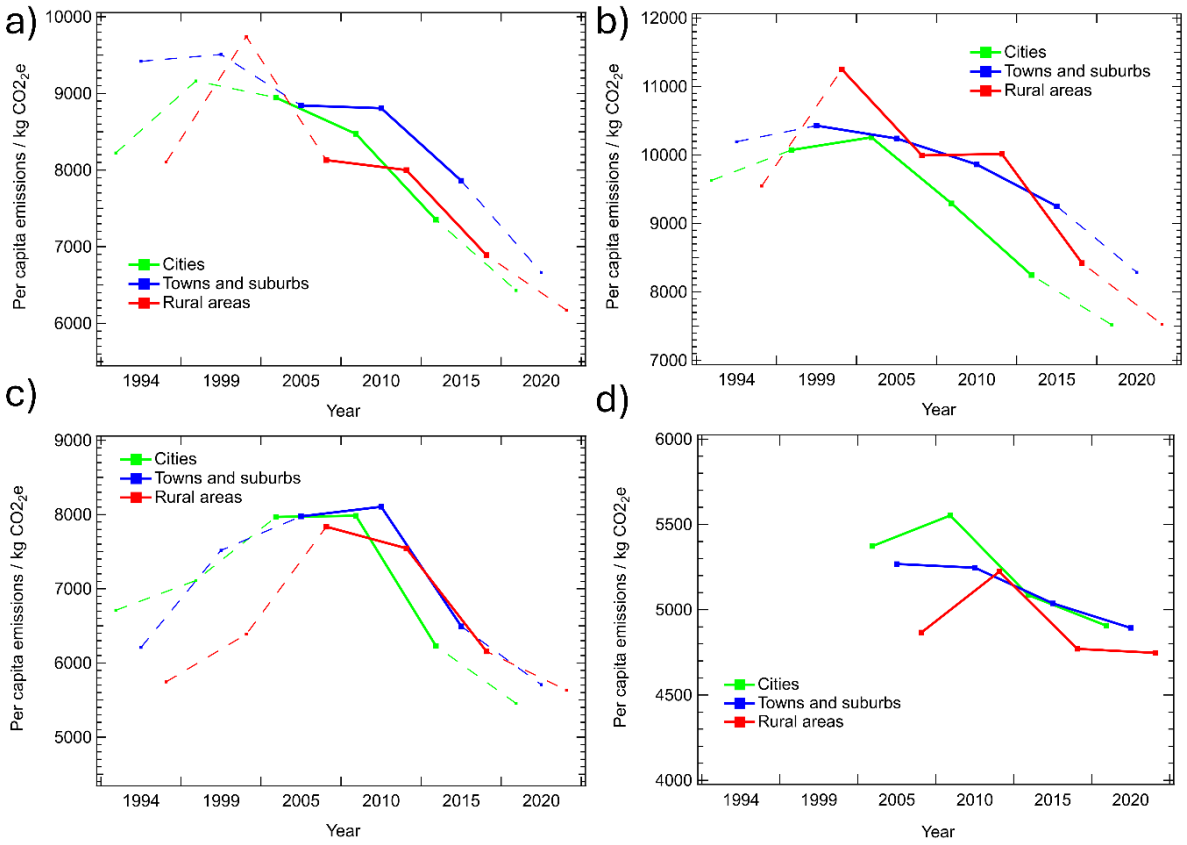

Figure S1: Weighted per capita average emissions across time for all of Europe (a), Western and Northern Europe (b), Southern Europe (c),and Eastern and Northeastern Europe (d) for residents of cities, towns and suburbs, and rural areas, respectively. Solid lines are used for the core time series where all countries in the respective grouping can be included; dashed lines represent the weighted average when considering only the countries with data in that year. The exact countries included in each regional grouping are provided in table S2. The figure was generated using a licensed version of IgorPro.

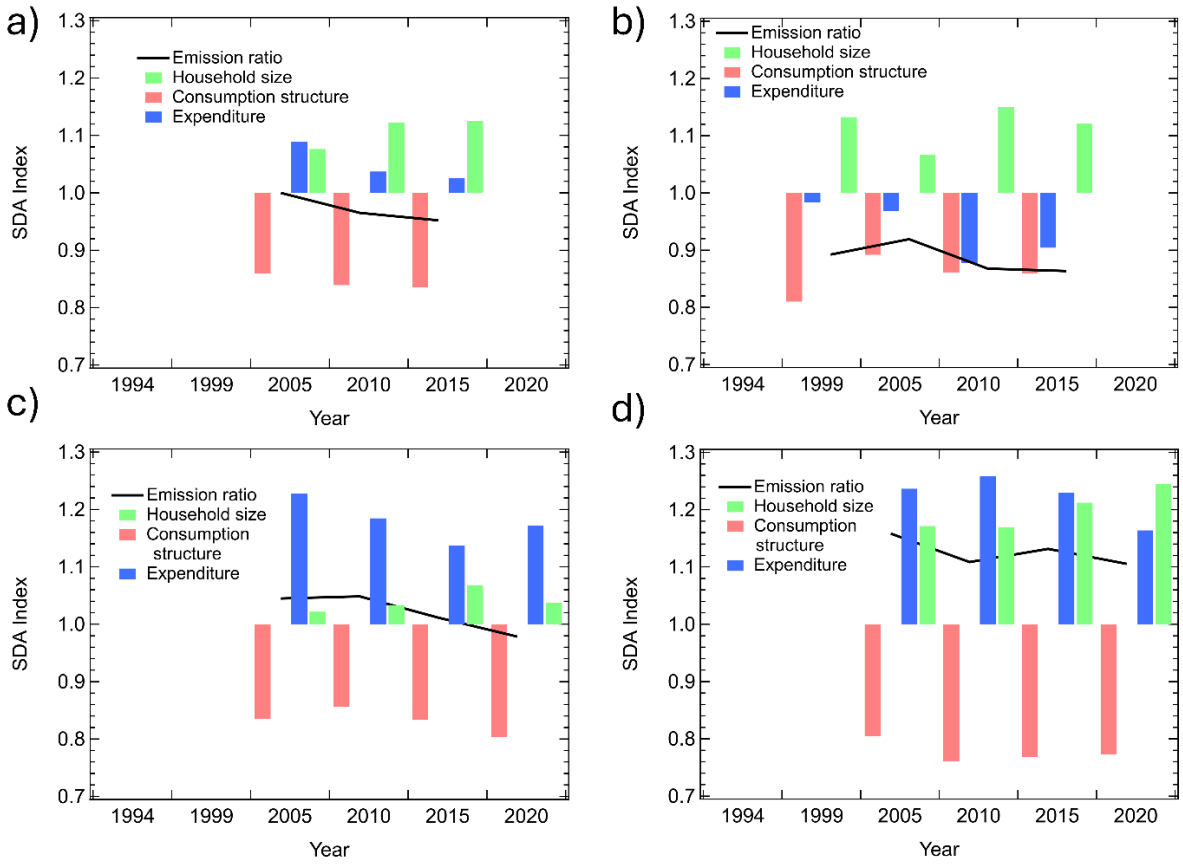

Figure S2: Weighted average structural decomposition analysis of the difference between city and rural per capita emissions across time for all of Europe (a), Western and Northern Europe (b), Southern Europe (c), and Eastern and Northeastern Europe (d). In each case, the black solid line represents the ratio of total emissions, with the weighted average value for the index for household size, consumption structure and overall expenditure shown in green, red, and blue, respectively. The exact countries included in each regional grouping are provided in table S3. The figure was generated using a licensed version of IgorPro.

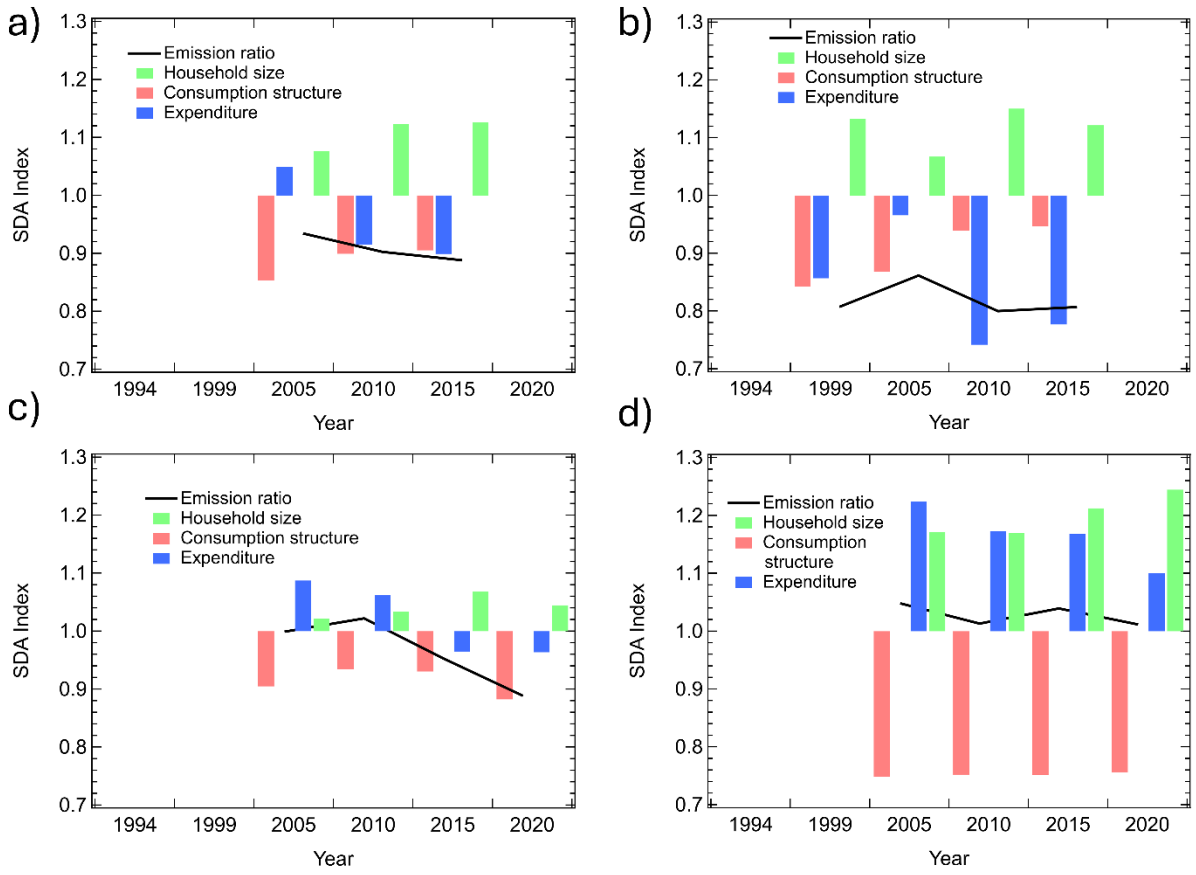

Figure S3: Weighted average structural decomposition analysis of the difference between city and rural per capita transport and energy use emissions across time for all of Europe (a), Western and Northern Europe (b), Southern Europe (c), and Eastern and Northeastern Europe (d). In each case, the black solid line represents the ratio of total emissions, with the weighted average value for the index for household size, consumption structure and overall expenditure shown in green, red, and blue, respectively. The exact countries included in each regional grouping are provided in table S2. The figure was generated using a licensed version of IgorPro.

Selection of countries for averages.

Table S1: Country grouping used for the averages as part of Figures 2 and S1. Entries in bold correspond to those for which consistent countries could be defined across consecutive years, reflecting the solid lines in figure 2. The Italian and German values were interpolated in 1999 and 2005, respectively. The Latvian value for towns was interpolated for 2010, using the average ratio change between 2005 and 2010 for cities and rural areas.

Year	Europe	Western and Northern Europe	Southern Europe	Eastern and Northeastern Europe
1994	FI, SE, DK, BE, DE, UK, ES, PT, IT	FI, SE, DK, BE, DE, UK	ES, PT, IT	

1999	FI, SE, DK, BE, DE, FR, AT, UK, ES, PT, IT	**FI, SE, DK, BE, DE*, FR, AT, UK**	ES, PT, IT	
2005	**FI, NO, SE, DK, EE, LV, BE, DE, FR, AT, UK, CZ, HU, Pl, SL, SK, HR, BG, EL, CY, PT, IT, ES**	**FI, SE, DK, BE, DE, FR, AT, UK**	**EL, ES, CY, PT, IT***	**EE, LV, CZ, HU, PL, SL, SK, HR, BG**
2010	**FI, NO, SE, DK, EE, LV, BE, DE, FR, AT,UK, CZ, HU, Pl, SL, SK, HR, BG, EL, CY, PT, IT, ES**	**FI, SE, DK, BE, DE, FR, AT, UK**	**EL, ES, CY, PT, IT**	**EE, LV*, CZ, HU, PL, SL, SK, HR, BG**
2015	**FI, NO, SE, DK, EE, LV, BE, DE, FR, AT,UK, CZ, HU, Pl, SL, SK, HR, BG, EL, CY, PT, IT, ES**	**FI, SE, DK, BE, DE, FR, AT, UK**	**EL, ES, CY, PT, IT**	**EE, LV, CZ, HU, PL, SL, SK, HR, BG**
2020	DK, EE, LV, BE, DE, FR, AT, CZ, HU, PL, SL, SK, HR, BG, EL, ES, CY, IT	DK, BE, DE, FR, AT	EL, ES, CY, IT	**EE, LV, CZ, HU, PL, SL, SK, HR, BG**

Table S2: Country grouping used for the averages as part of Figures 3,4, S2 and S3. Entries in bold correspond to those for which consistent countries could be defined across consecutive years, reflecting the solid lines in figure 2a and 3a. Note that the Portuguese value for 2015 was used for 2020 in order to lengthen the time series until 2020. The Italian and German values were interpolated in 1999 and 2005, respectively.

Year	Europe	Western and Northern Europe	Southern Europe	Eastern and Northeastern Europe
1994	FI, SE, DK, BE, DE, UK, ES, PT, IT	FI, SE, DK, BE, DE, UK	ES, PT, IT	
1999	FI, SE, DK, BE, DE, FR, AT, UK, ES, PT, IT	**FI, SE, DK, BE, DE*, FR, AT, UK**	ES, PT, IT	
2005	**FI, SE, DK, EE, LT, LV, BE, DE, FR, AT, UK, CZ, HU, PL, SL, SK,**	**FI, SE, DK, BE, DE, FR, AT, UK**	**EL, ES, CY, PT, IT***	**EE, LT, LV, CZ, HU, PL, SL, SK, HR, BG,**

	HR, BG, EL, CY, PT, IT, ES			
2010	**FI, SE, DK, EE, LT, LV, BE, DE, FR, AT, UK, CZ, HU, PL, SL, SK, HR, BG, EL, CY, PT, IT, ES**	**FI, SE, DK, BE, DE, FR, AT, UK**	**EL, ES, CY, PT, IT**	**EE, LT, LV, CZ, HU, PL, SL, SK, HR, BG**
2015	**FI, SE, DK, EE, LT, LV, BE, DE, FR, AT, UK, CZ, HU, PL, SL, SK, HR, BG, EL, CY, PT, IT, ES**	**FI, SE, DK, BE, DE, FR, AT, UK**	**EL, ES, CY, PT, IT**	**EE, LT, LV, CZ, HU, PL, SL, SK, HR, BG**
2020	DK, EE, LT, LV, BE, DE, FR, AT, CZ, HU, PL, SL, SK, HR, BG, EL, CY, PT*, IT, ES	DK, BE, DE, FR, AT	**EL, ES, CY, PT*, IT**	**EE, LT, LV, CZ, HU, PL, SL, SK, HR, BG**

Countries and abbreviations

Table S3: Countries and their abbreviations used in this study.

Country	Abbreviation	Country	Abbreviation
Austria	AT	**Latvia**	LV
Belgium	BE	**Lithuania**	LT
Bulgaria	BG	**Luxembourg**	LU
Croatia	HR	**Malta**	MT
Cyprus	CY	**Netherlands**	NL
Czechia	CZ	**Norway**	NO
Denmark	DK	**Poland**	PL
Estonia	EE	**Portugal**	PT
Finland	FI	**Romania**	RO
France	FR	**Slovakia**	SK
Germany	DE	**Slovenia**	SL
Greece	EL	**Spain**	ES
Hungary	HU	**Sweden**	SE

Ireland	IE	**United Kingdom**	UK
Italy	IT		

Results from Structural decomposition analysis

Table S1: Indices for total expenditure from the structural decomposition analysis calculation covering all sectors apart from waste. Values denoted by a * are projected based on an average of the neighbouring values for that country.

	Country	1994	1999	2005	2010	2015	2020
Total Expenditure	Bulgaria			1.56	1.84	1.83	1.61
	Croatia			1.30	1.20	1.24	1.22
	Czechia			1.06	1.06	1.04	1.12
	Estonia			1.00	1.21	1.12	1.09
	Hungary			1.18	1.31	1.32	1.01
	Latvia			1.40	1.30	1.17	1.34
	Lithuania			1.54	1.50	1.64	1.43
	Poland			1.20	1.20	1.13	1.09
	Slovakia			1.11	1.14	1.01	1.10
	Slovenia			1.18	1.14	1.11	1.11
	Austria		0.98	0.93	0.92	0.80	0.84
	Belgium	1.12	1.12	1.04	0.90	0.95	0.87
	Denmark	0.92	0.92	0.93	0.92	0.96	1.00
	Finland	1.04	1.13	1.12	0.85	0.98	
	France		1.07	1.02	0.88	0.95	0.94
	Germany	0.90	0.93*	0.96	0.87	0.87	0.83
	Netherlands				0.85	0.91	0.92
	Norway			1.13	1.15	0.95	
	Sweden	1.03	0.91	0.91	1.04	0.97	
	United Kingdom	0.95	0.94	0.92	0.85	0.89	
	Cyprus			1.22	1.23	1.15	1.14
	Greece			1.04	1.13	1.12	1.24
	Italy	0.96	1.19	1.19*	1.19	1.12	1.16
	Portugal	2.14	1.70	1.48	1.34	1.33	1.33*
	Spain	1.29	1.29	1.26	1.16	1.11	1.14

Table S2: Indices for consumption structure from the structural decomposition analysis calculation covering all sectors apart from waste. Values denoted by a * are projected based on an average of the neighbouring values for that country.

	Country	1994	1999	2005	2010	2015	2020
Consumption Structure	Bulgaria			0.89	0.74	0.84	0.84
	Croatia			0.97	0.96	0.95	0.93
	Czechia			0.76	0.80	0.77	0.71
	Estonia			0.94	0.89	0.92	0.90
	Hungary			1.05	0.87	0.87	0.98
	Latvia			1.02	1.02	0.99	0.94
	Lithuania			1.01	0.76	0.82	0.90
	Poland			0.67	0.66	0.66	0.66
	Slovakia			0.94	0.92	0.87	0.90
	Slovenia			0.92	0.94	0.88	0.90
	Austria		0.80	0.93	0.98	0.98	1.03
	Belgium	0.71	0.82	0.85	0.82	0.81	0.83
	Denmark	0.91	0.85	0.97	0.95	0.95	0.96
	Finland	0.86	0.85	0.88	0.87	0.91	
	France		0.55	0.92	0.79	0.81	0.82
	Germany	0.92	0.89*	0.87	0.85	0.80	0.90
	Netherlands				1.01	0.94	0.95
	Norway			0.93	0.92	0.82	
	Sweden	0.96	0.96	0.94	0.98	0.94	
	United Kingdom	0.93	0.95	0.88	0.91	0.95	
	Cyprus			0.99	0.95	0.93	0.91
	Greece			0.93	0.87	0.85	0.81
	Italy	0.73	0.76	0.80*	0.84	0.81	0.80
	Portugal	0.88	0.91	0.91	0.86	0.86	0.86*
	Spain	0.85	0.83	0.82	0.87	0.85	0.79

Table S3: Indices for household size from the structural decomposition analysis calculation covering all sectors apart from waste. Values denoted by a * are projected based on an average of the neighbouring values for that country.

	Country	1994	1999	2005	2010	2015	2020
Household Size	Bulgaria			1.00	0.99	1.02	1.09
	Croatia			1.07	1.11	1.08	1.12
	Czechia			1.09	1.09	1.15	1.13
	Estonia			1.14	1.00	1.05	1.05
	Hungary			1.18	1.22	1.17	1.22
	Latvia			1.12	1.09	1.12	1.11
	Lithuania			1.05	1.17	1.07	1.12
	Poland			1.25	1.24	1.32	1.36
	Slovakia			1.21	1.12	1.27	1.20
	Slovenia			1.20	1.12	1.14	1.14
	Austria		1.44	1.33	1.26	1.26	1.19
	Belgium	1.02	0.99	1.10	1.09	1.16	1.09
	Denmark	1.12	1.19	1.14	1.16	1.08	1.08
	Finland	1.12	1.13	1.14	1.24	1.10	
	France		1.08	0.93	1.14	1.11	1.11
	Germany	1.35	1.26*	1.16	1.31	1.28	1.23
	Netherlands				1.39	1.15	1.12
	Norway			1.09	1.04	1.25	
	Sweden	1.05	1.17	1.12	1.01	1.03	
	United Kingdom	1.03	1.03	1.05	0.99	0.95	
	Cyprus			1.03	1.04	1.15	1.15
	Greece			1.04	1.01	1.11	1.09
	Italy	1.13	1.01	1.03*	1.05	1.11	1.03
	Portugal	0.92	0.92	0.91	0.97	0.97	0.97*
	Spain	1.00	1.00	1.03	1.03	1.04	1.05

Table S4: Indices for total expenditure from the structural decomposition analysis calculation covering only transport and energy. Values denoted by a * are projected based on an average of the neighbouring values for that country.

	Country	1994	1999	2005	2010	2015	2020
Total Expenditure	Bulgaria			1.43	1.67	1.77	1.64
	Croatia			1.00	1.06	1.10	1.03
	Czechia			1.01	0.95	0.86	0.91
	Estonia			0.88	1.23	1.01	0.80
	Hungary			1.13	1.15	1.21	1.03
	Latvia			1.46	1.46	1.16	1.22
	Lithuania			1.53	1.30	1.48	1.15
	Poland			1.25	1.16	1.14	1.09
	Slovakia			1.09	0.95	0.93	0.95
	Slovenia			1.26	1.00	0.94	1.04
	Austria		0.98	0.83	0.86	0.75	0.78
	Belgium	1.02	0.96	0.99	0.78	0.82	0.74
	Denmark	0.67	0.76	0.78	0.82	0.68	0.88
	Finland	0.82	1.07	0.92	0.73	0.81	
	France		0.90	1.29	0.72	0.78	0.77
	Germany	0.80	0.85*	0.90	0.69	0.83	0.70
	Netherlands				0.54	0.83	0.82
	Norway			1.05	0.97	0.66	
	Sweden	1.04	0.76	0.77	0.95	0.70	
	United Kingdom	0.84	0.80	0.76	0.76	0.73	
	Cyprus			1.10	1.32	1.20	1.19
	Greece			0.91	0.98	1.09	1.11
	Italy	0.82	1.09	1.11*	1.12	0.85	0.96
	Portugal	2.04	1.66	1.41	1.17	1.25	1.25*
	Spain	1.23	1.18	1.04	0.99	0.98	0.93

Table S5: Indices for consumption structure from the structural decomposition analysis calculation covering only transport and energy. Values denoted by a * are projected based on an average of the neighbouring values for that country.

	Country	1994	1999	2005	2010	2015	2020
Consumption Structure	Bulgaria			0.93	0.82	0.90	0.91
	Croatia			1.28	1.17	1.15	1.12
	Czechia			0.69	0.81	0.83	0.73
	Estonia			1.05	0.85	1.01	1.12
	Hungary			1.10	1.03	0.96	0.96
	Latvia			1.12	1.07	1.08	1.04
	Lithuania			1.03	0.92	0.94	1.00
	Poland			0.51	0.53	0.52	0.55
	Slovakia			0.94	1.04	0.90	1.03
	Slovenia			0.87	1.05	1.00	0.95
	Austria		0.73	1.01	1.07	1.05	1.15
	Belgium	0.67	0.78	0.79	0.87	0.79	0.88
	Denmark	1.05	0.92	1.08	1.01	1.29	1.10
	Finland	0.93	0.78	0.89	0.92	1.05	
	France		0.51	0.70	0.85	0.88	0.92
	Germany	1.01	0.93*	0.84	0.98	0.76	1.01
	Netherlands				1.44	1.01	1.02
	Norway			0.98	1.03	1.05	
	Sweden	0.96	1.04	1.03	1.03	1.22	
	United Kingdom	0.99	1.08	1.02	0.97	1.15	
	Cyprus			1.03	0.91	0.87	0.84
	Greece			1.05	0.99	0.86	0.86
	Italy	0.72	0.75	0.82*	0.88	0.97	0.90
	Portugal	0.91	0.95	0.93	0.95	0.89	0.89*
	Spain	0.88	0.87	0.94	0.97	0.92	0.87

Table S6: Indices for household size from the structural decomposition analysis calculation covering only transport and energy. Values denoted by a * are projected based on an average of the neighbouring values for that country.

	Country	1994	1999	2005	2010	2015	2020
Household Size	Bulgaria			1.00	0.99	1.02	1.09
	Croatia			1.07	1.11	1.08	1.12
	Czechia			1.09	1.09	1.15	1.13
	Estonia			1.14	1.00	1.05	1.05
	Hungary			1.18	1.22	1.17	1.22
	Latvia			1.12	1.09	1.12	1.11
	Lithuania			1.05	1.17	1.07	1.12
	Poland			1.25	1.24	1.32	1.36
	Slovakia			1.21	1.12	1.27	1.20
	Slovenia			1.20	1.12	1.14	1.14
	Austria		1.44	1.33	1.26	1.26	1.19
	Belgium	1.02	0.99	1.10	1.09	1.16	1.09
	Denmark	1.12	1.19	1.14	1.16	1.08	1.08
	Finland	1.12	1.13	1.14	1.24	1.10	
	France		1.08	0.93	1.14	1.11	1.11
	Germany	1.35	1.26*	1.16	1.31	1.28	1.23
	Netherlands				1.39	1.15	1.12
	Norway			1.09	1.04	1.25	
	Sweden	1.05	1.17	1.12	1.01	1.03	
	United Kingdom	1.03	1.03	1.05	0.99	0.95	
	Cyprus			1.03	1.04	1.15	1.15
	Greece			1.04	1.01	1.11	1.09
	Italy	1.13	1.01	1.03*	1.05	1.11	1.03
	Portugal	0.92	0.92	0.91	0.97	0.97	0.97*
	Spain	1.00	1.00	1.03	1.03	1.04	1.05

Mixed effects modelling

Mixed effects models were built to evaluate the importance of three variables in predicting the ratio of emissions between residents of rural and urban areas. The variables were respectively region of the country (as a dummy variable), the natural logarithm of national median equivalised income, Ln(MEI), and the year. Each country was added as a random effect (allowing for random intercepts for each country in the model). These variables were chosen as the size of the dataset (28 countries and 114 observations) does not support the inclusion of further variables. The average group size (effectively the number of observations per group) was 4.1.

The first model included all variables additively, meaning that interactions between variables were not considered. The results are shown in Table S10, with intercept describing the offset of countries in Eastern Europe and T.South and T.West describing the difference relative to

this for countries in Southern and Western Europe, respectively. Considering the model coefficients, Z and P-values (P > |z|), the intercept and Ln(MEI) are significant at a 5% confidence interval. This implies that Ln(MEI) is an important variable in explaining differences in the emission ratio, and the ratio of footprints decreases as income increases on average across the dataset (although the year variable also has a relatively low p-value and is negative). However, the size of the variance and standard error between countries suggests some variance is not being captured by the model.

Table S7: Results from a mixed effects model with region, year and ln(MEI) added as additive variables. Coef and std.Err display coefficient values and their standard error, with z being the z statistic (ratio of coefficient and std error). P values for each variable are denoted as P > |z|, with the table also giving 95 % confidence intervals in the last two columns. Intercept is for Eastern Europe, with T.South and T.West describing the differences to this for Southern and Western Europe, respectively. Group var refers to the variance between countries (random intercepts). AIC is the score for the Akaike information criterion used to compare models.

	Coef.	Std.Err.	z	P>|z|	[0.025	0.975]
Intercept	2.343	0.442	5.305	0	1.477	3.208
Region[T.South]	-0.074	0.09	-0.82	0.412	-0.25	0.103
Region[T.West]	-0.129	0.1	-1.285	0.199	-0.326	0.068
Ln(MEI)	-0.119	0.053	-2.252	0.024	-0.223	-0.015
Year	-0.003	0.002	-1.643	0.1	-0.006	0.001
Group var	0.019	0.075				
AIC	-146.40					

However, this initial conclusion could be vulnerable to correlations between variables; Western European countries are likely to be richer than others, and income in general increased over time across countries, even after controlling for inflation. Moreover, the raw MEI data suggests large variation between countries alongside a slow general increase within countries over time. In order to therefore assess the rigour of this initial conclusion, a series of models were made in turn considering different combinations of variables. Models were compared using the Akaike information criterion (AIC), in which more complex models are relatively penalised. Lower AICs imply a better and more robust model, and the AIC was chosen as the criterion for model selection due to its higher relevance for smaller datasets. Results for models that include each variable individually are shown in tables S11 – 13 for Region, Year, and Ln(MEI), respectively.

The results from these three models suggest that median equivalised income is the underlying variable driving the differences in ratio. When Ln(MEI) is not included as a variable in table S11 and S12, the overall model shows a drastically higher AIC compared to the additive model (-132.85 and -131.26 compared to -146.4, respectively). In table S13, the results of modelling with Ln(MEI) are shown. Here, the AIC value is higher than in the additive model, with a difference of 3 implying a notable improvement. Ln(MEI) is significant

in this model with a coefficient that suggests a relatively strong negative dependence (-0.187) given the range of ratios in the data.

Table S8: Results from a mixed effects model with Region. Coef and std.Err display coefficient values and their standard error, with z being the z statistic (ratio of coefficient and std error. P values for each variable are denoted as P > |z|, with the table also giving 95 % confidence intervals in the last two columns. Intercept is for Eastern Europe, with T.South and T.West describing the differences to this for Southern and Western Europe, respectively, whilst Group var refers to the variance between countries (random intercepts). AIC is the score for the Akaike information criterion used to compare models.

	Coef.	Std.Err.	z	P>|z|	[0.025	0.975]
Intercept	1.263	0.047	27.1	0	1.171	1.354
Region[T.South]	-0.151	0.082	-1.834	0.067	-0.313	0.01
Region[T.West]	-0.291	0.064	-4.52	0	-0.417	-0.165
Group var	0.021	0.075				
AIC	-132.85					

Table S9: Results from a mixed effects model with Year. Coef and std.Err display coefficient values and their standard error, with z being the z statistic (ratio of coefficient and std error. P values for each variable are denoted as P > |z|, with the table also giving 95 % confidence intervals in the last two columns. Intercept is for all countries, whilst Group var refers to the variance between countries (random intercepts). AIC is the score for the Akaike information criterion used to compare models.

	Coef.	Std.Err.	z	P>|z|	[0.025	0.975]
Intercept	1.19	0.045	26.243	0	1.101	1.279
Year	-0.005	0.001	-3.602	0	-0.007	-0.002
Group var	0.042	0.153				
AIC	-131.26					

Table S10: Results from a mixed effects model with ln(MEI). Coef and std.Err display coefficient values and their standard error, with z being the z statistic (ratio of coefficient and std error. P values for each variable are denoted as P > |z|, with the table also giving 95 % confidence intervals in the last two columns. Intercept is for all countries, whilst Group var refers to the variance between countries (random intercepts). AIC is the score for the Akaike information criterion used to compare models.

	Coef.	Std.Err.	z	P>|z|	[0.025	0.975]
Intercept	2.866	0.281	10.189	0	2.315	3.417
Ln(MEI)	-0.187	0.03	-6.27	0	-0.246	-0.129
Group var	0.018	0.067				
AIC	-149.51					

The results so far suggest that Ln(MEI) is the only significant variable of the three modeled. Finally, to further test the relationships between variables, a model was built including interaction terms. The results are shown in table S14. Here, different variables are shown to be important. According to the p-values, only variables associated with the southern region are significant. However, the number of variables relative to the size of the data suggests that such a model is over specified and may also suffer from overfitting, despite it having the best AIC value. Note that the sample size for the Southern region is smaller than for the Western or Eastern regions, increasing this risk. As a further test, the Bayesian information criterion (BIC) was also calculated and compared to the model with only Ln(MEI), giving results of -115.38 and -138.56, respectively. The BIC more heavily penalises models with additional variables than AIC. As with the AIC, more negative values imply a better model. The extremely large difference in the BIC values, alongside the principle of selecting a simpler model (especially given the data size), strongly suggests that the model with only Ln(MEI) is best supported by the data. Note that models combining two of the three variables also did not give improved AIC values compared to the pure Ln(MEI) model. A model with Year and Ln(MEI) does have only a marginally worse AIC than the Ln(MEI) model. The Ln(MEI) model remains the best when BIC is used as the determinant and in this model only Ln(MEI) is significant. Note that these models were built using all available data from all countries. However, reducing the data size to remove countries with variable results (Luxembourg) or those with only two measurements (Ireland, Romania) does not change the general conclusion.

Table S11: Results from a mixed effects model with region, year and ln(MEI) with interaction variables. Coef and std.Err display coefficient values and their standard error, with z being the z statistic (ratio of coefficient and std error. P values for each variable are denoted as P > |z|, with the table also giving 95 % confidence intervals in the last two columns. Intercept is for Eastern Europe, with T.South and T.West describing the differences to this for Southern and Western Europe, respectively. Group var refers to the variance between countries (random intercepts). AIC is the score for the Akaike information criterion used to compare models.

	Coef.	Std.Err.	z	P>|z|	[0.025	0.975]
Intercept	2.35	1.06	2.218	0.027	0.273	4.428
Region[T.South]	5.527	1.909	2.896	0.004	1.786	9.268
Region[T.West]	-1.824	2.065	-0.883	0.377	-5.87	2.223
Ln(MEI)	-0.131	0.125	-1.052	0.293	-0.375	0.113
Ln(MEI):Region[T.South]	-0.592	0.212	-2.793	0.005	-1.008	-0.177
Ln(MEI):Region[T.West]	0.182	0.218	0.835	0.404	-0.245	0.609
Year	0.03	0.058	0.522	0.601	-0.083	0.143
Year:Region[T.South]	-0.348	0.091	-3.818	0	-0.526	-0.169
Year:Region[T.West]	-0.02	0.096	-0.213	0.831	-0.208	0.167
Ln(MEI):Year	-0.003	0.007	-0.494	0.621	-0.016	0.01
Ln(MEI):Year:Region[T.South]	0.037	0.01	3.702	0	0.017	0.057
Ln(MEI):Year:Region[T.West]	0.002	0.01	0.182	0.856	-0.018	0.022
Group var	0.015	0.071				
AIC	-153.68					

Country breakdowns

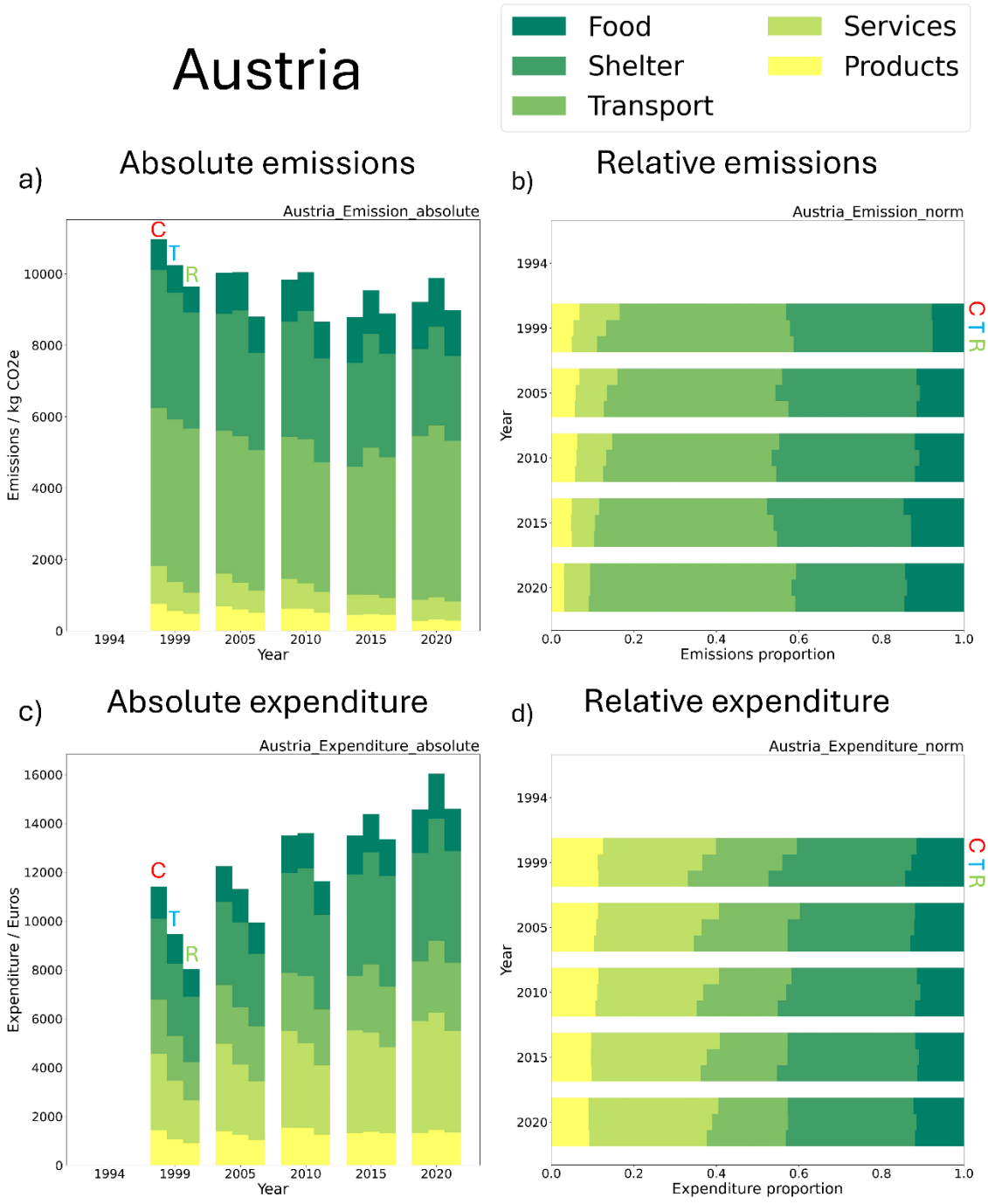

Figure S4: Time series emissions and expenditure for Austria by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

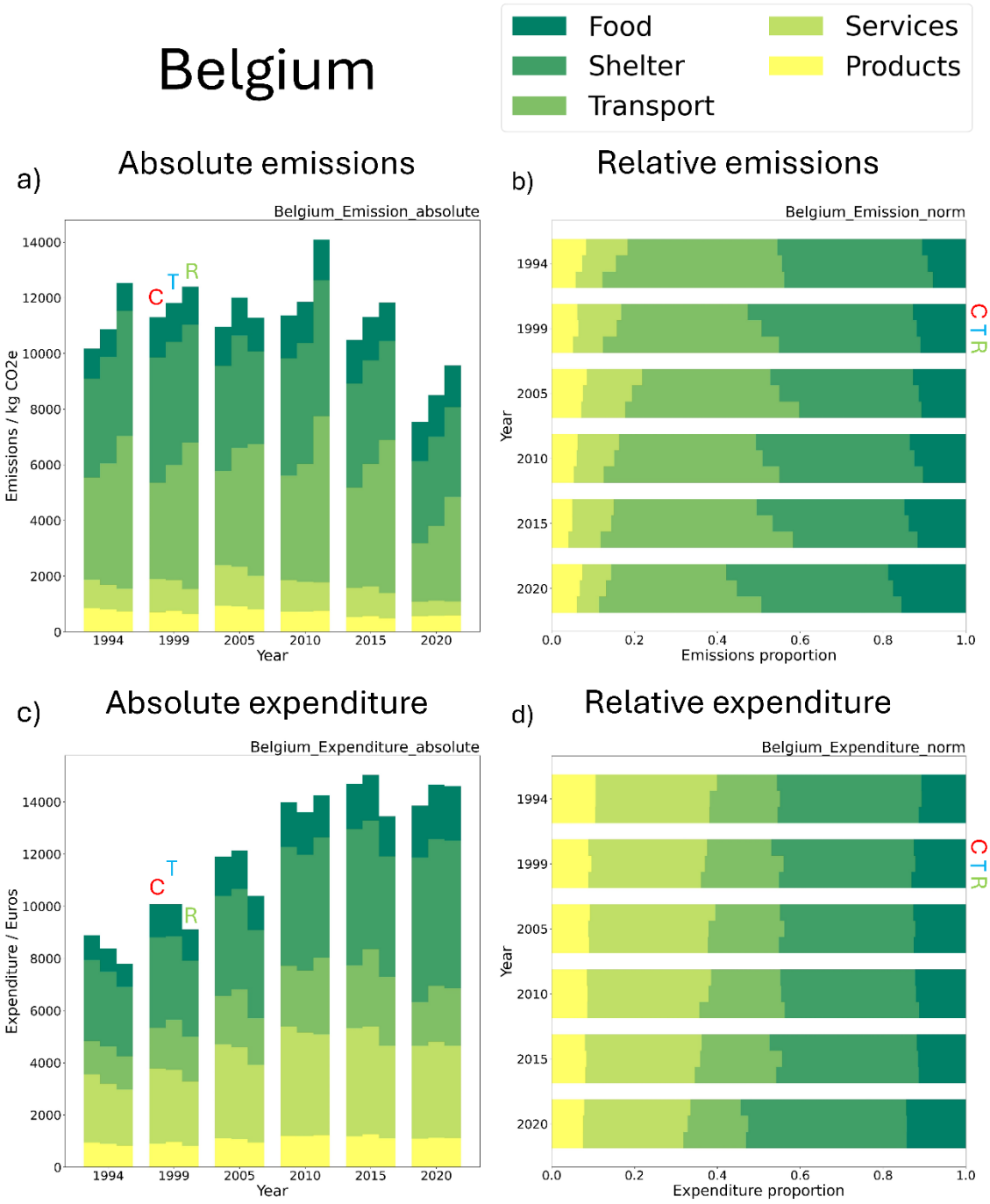

Figure S5: Time series emissions and expenditure for Belgium by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

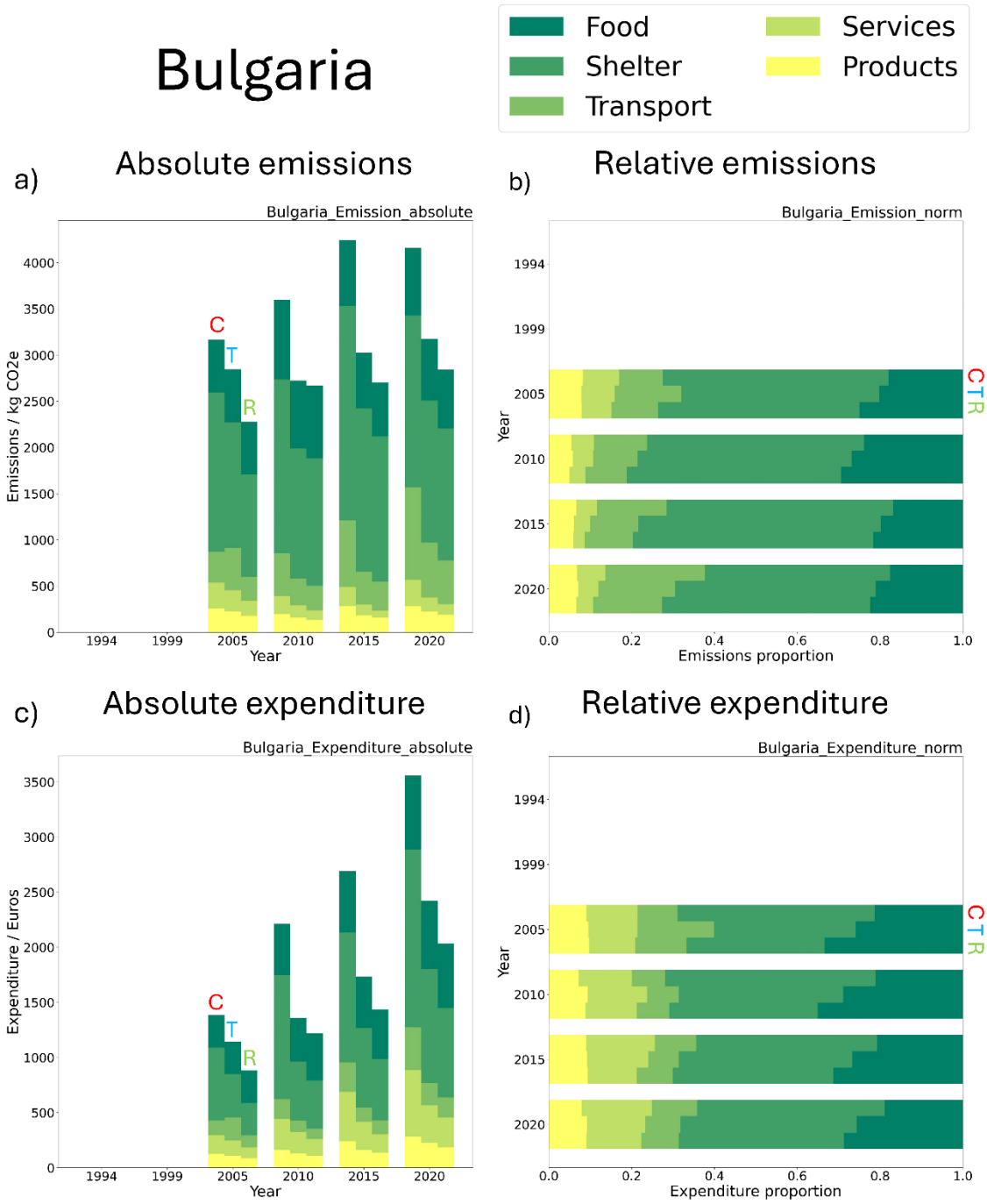

Figure S6: Time series emissions and expenditure for Bulgaria by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

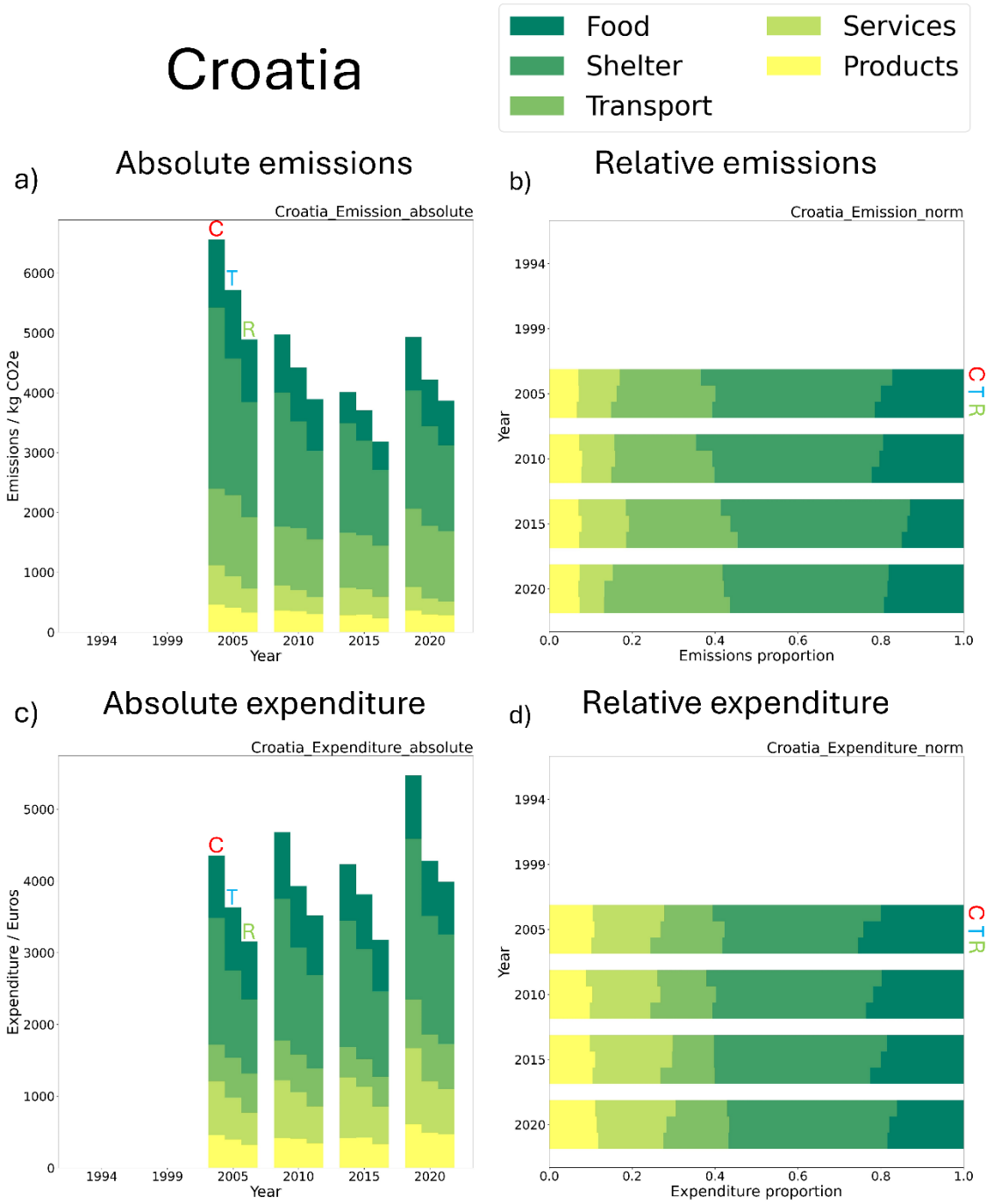

Figure S7: Time series emissions and expenditure for Croatia by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

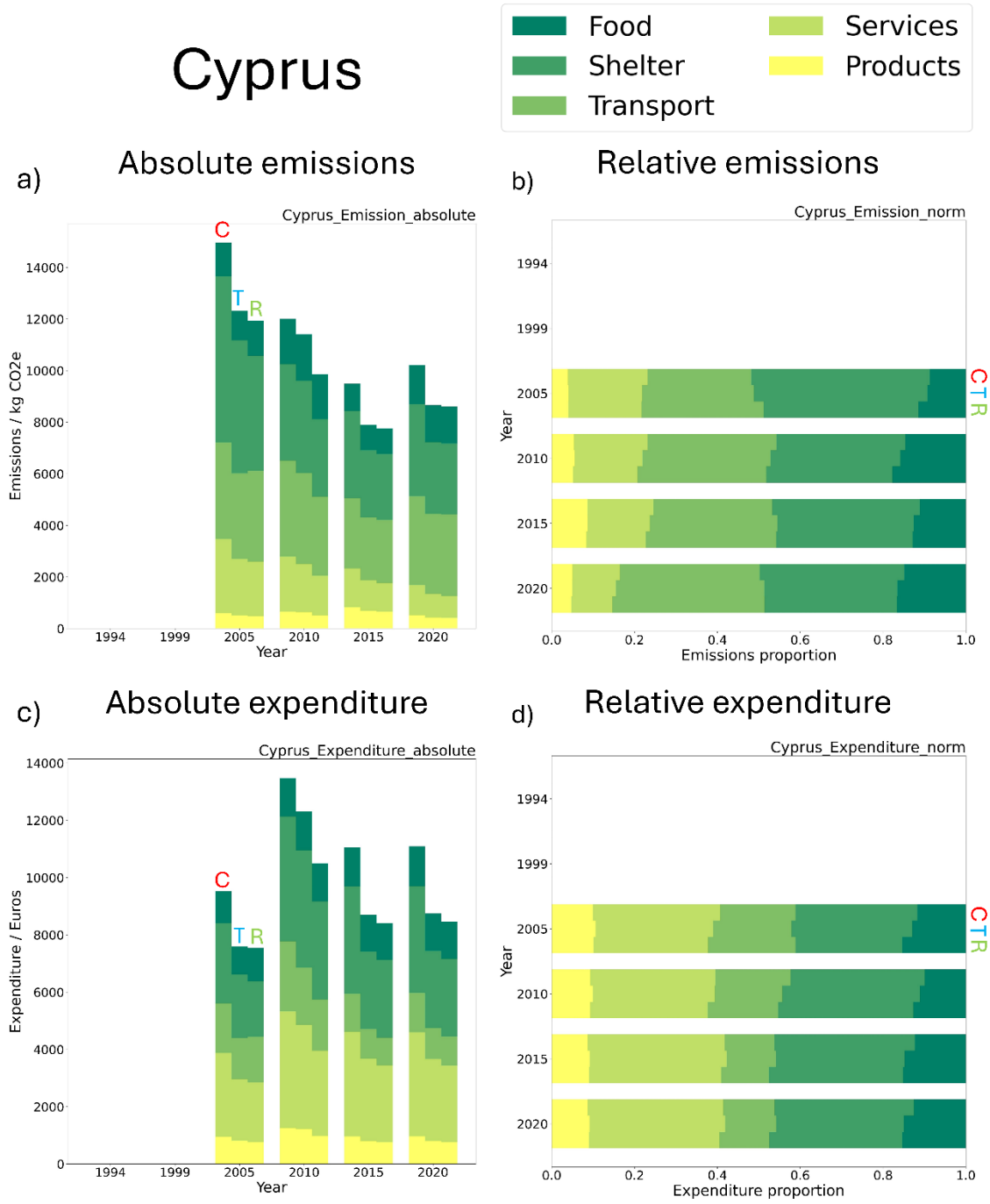

Figure S8: Time series emissions and expenditure for Cyprus by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

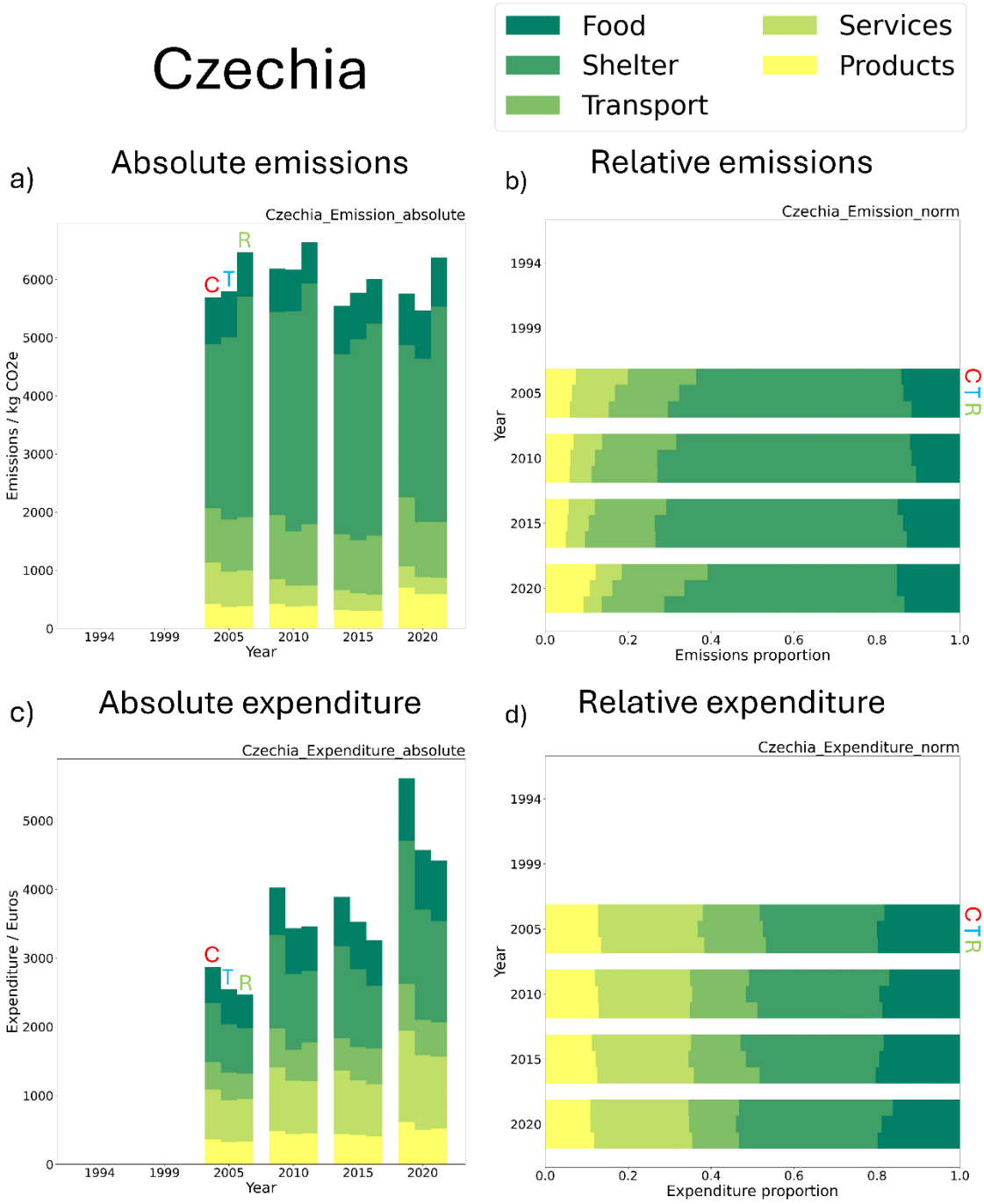

Figure S9: Time series emissions and expenditure for Czechia by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

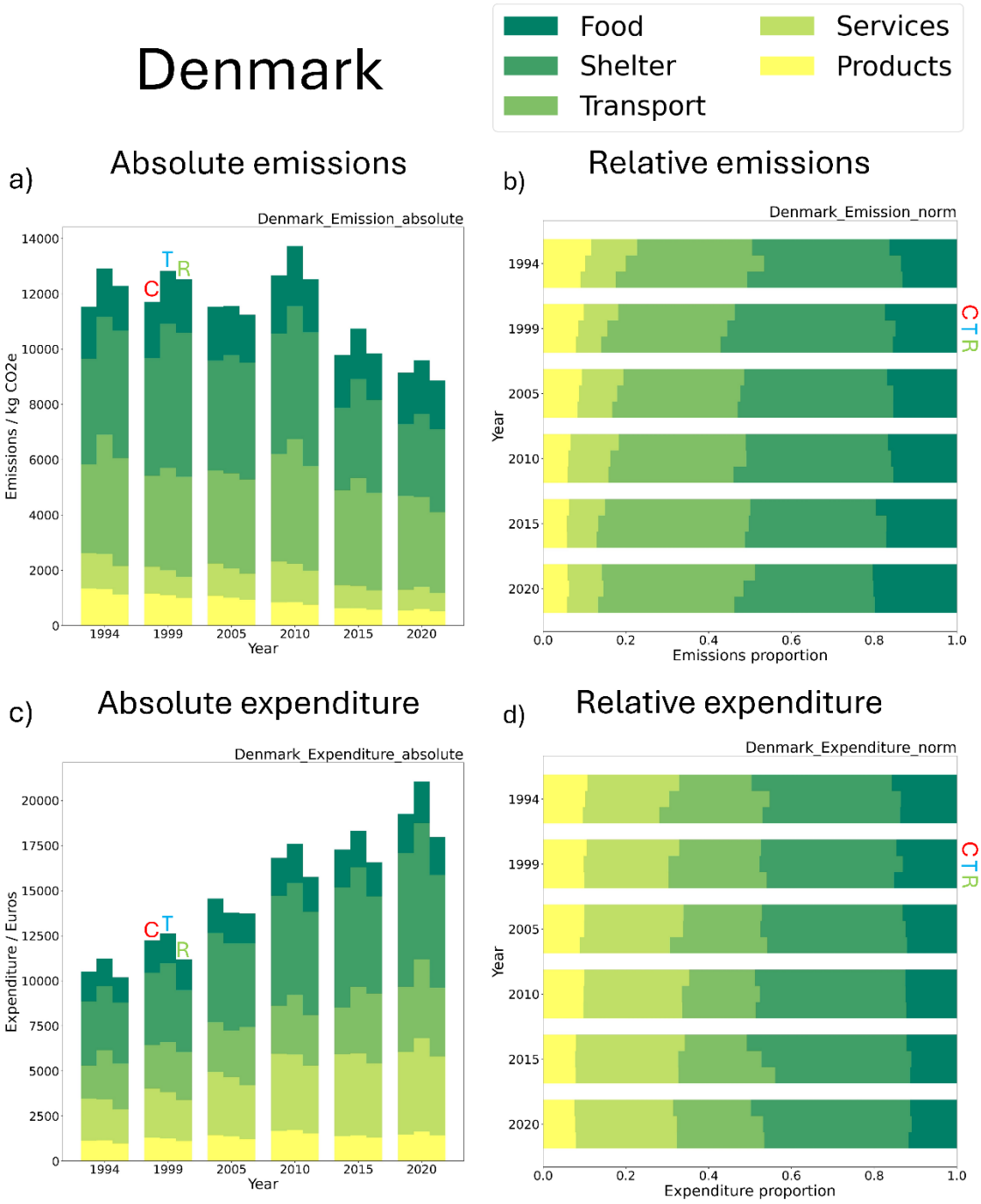

Figure S10: Time series emissions and expenditure for Denmark by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

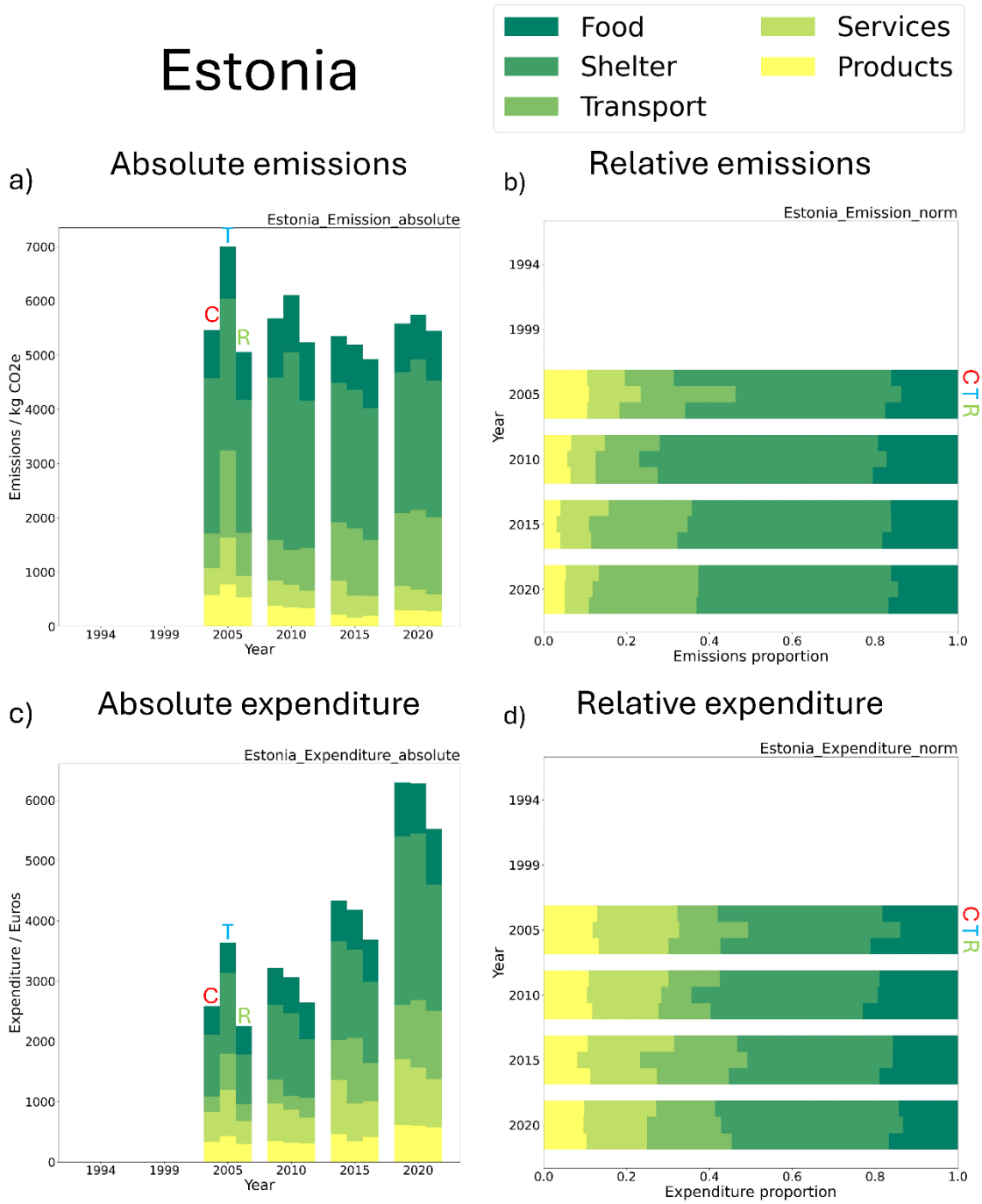

Figure S11: Time series emissions and expenditure for Estonia by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

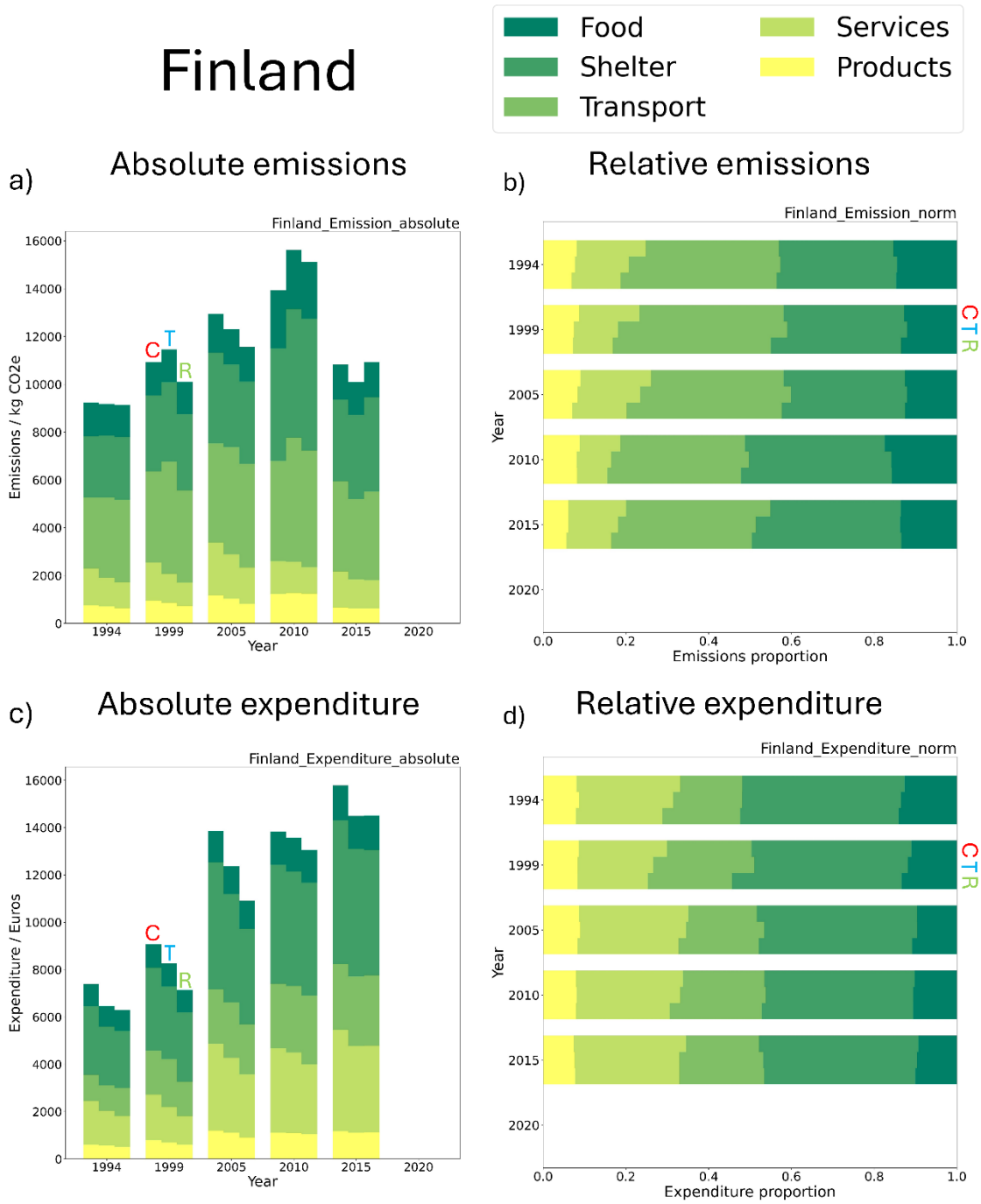

Figure S12: Time series emissions and expenditure for Finland by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

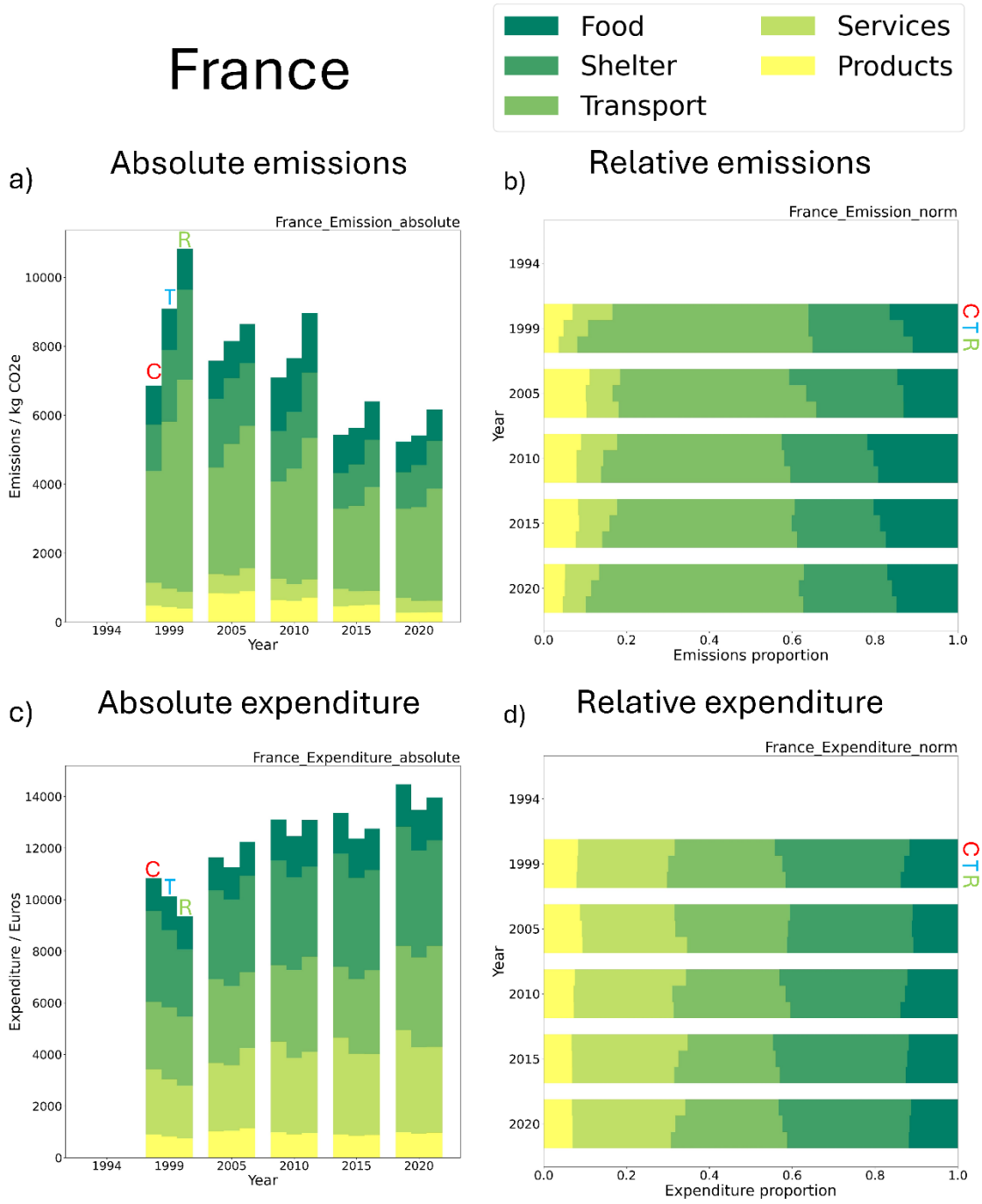

Figure S13: Time series emissions and expenditure for France by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

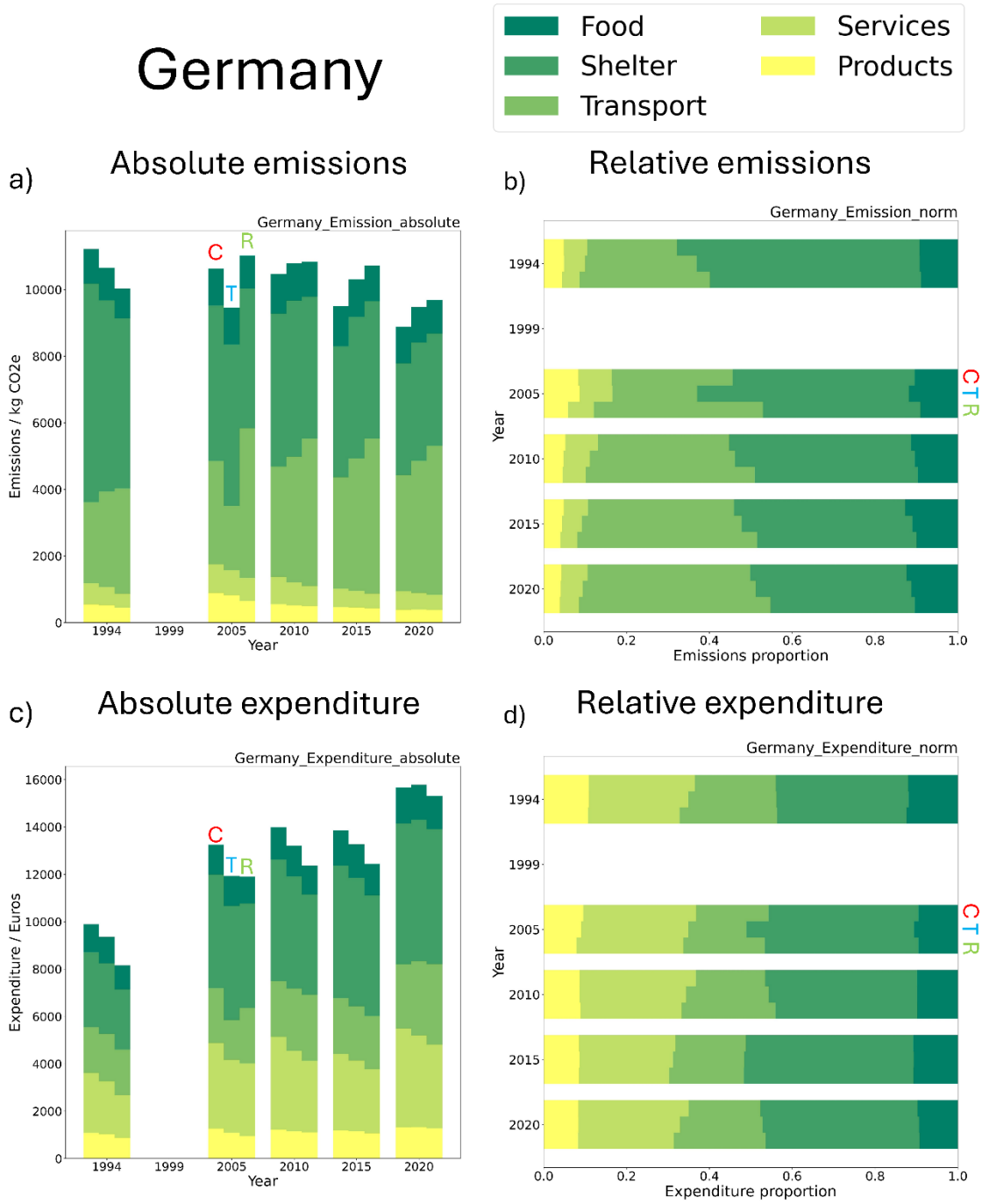

Figure S14: Time series emissions and expenditure for Germany by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

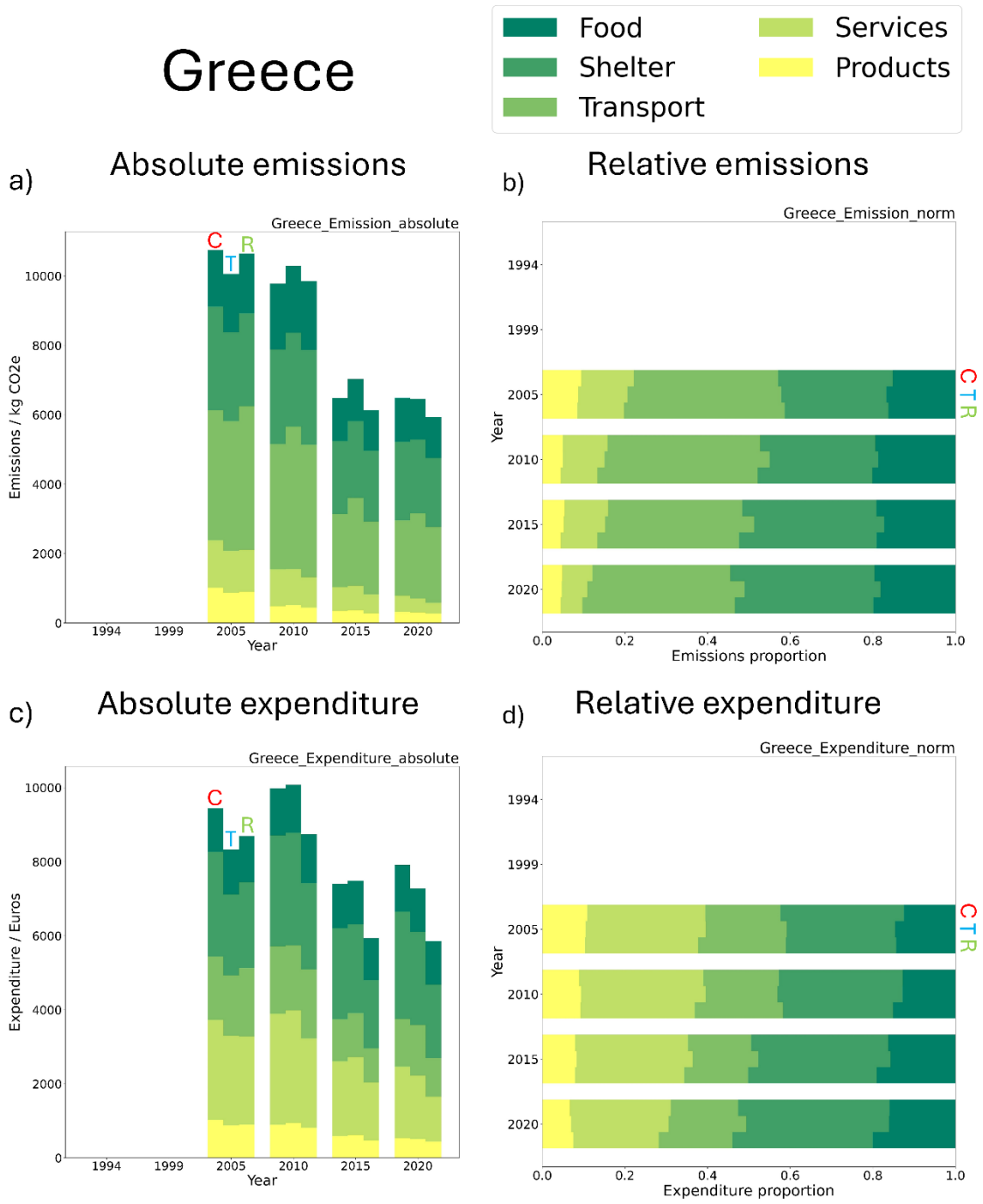

Figure S15: Time series emissions and expenditure for Greece by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

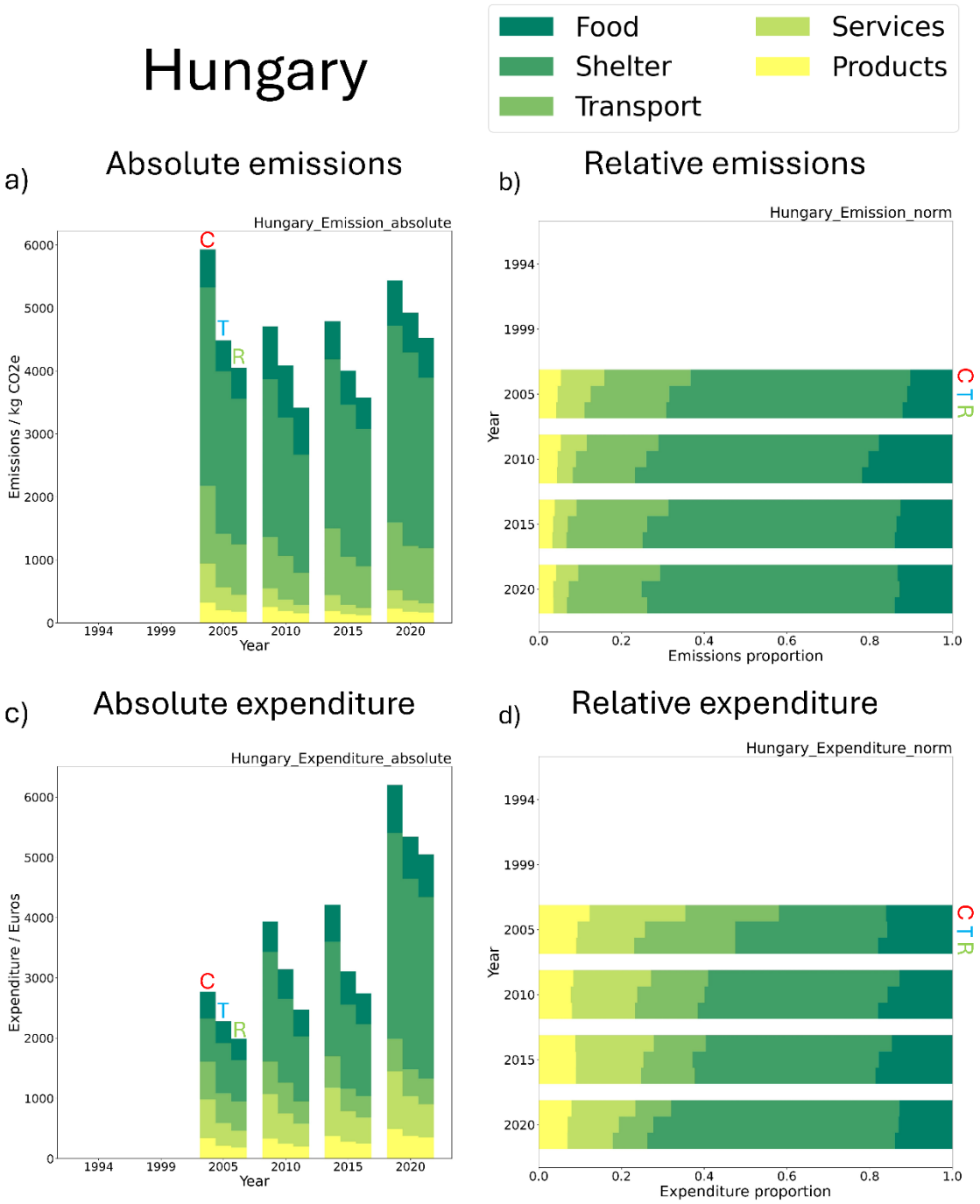

Figure S16: Time series emissions and expenditure for Hungary by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

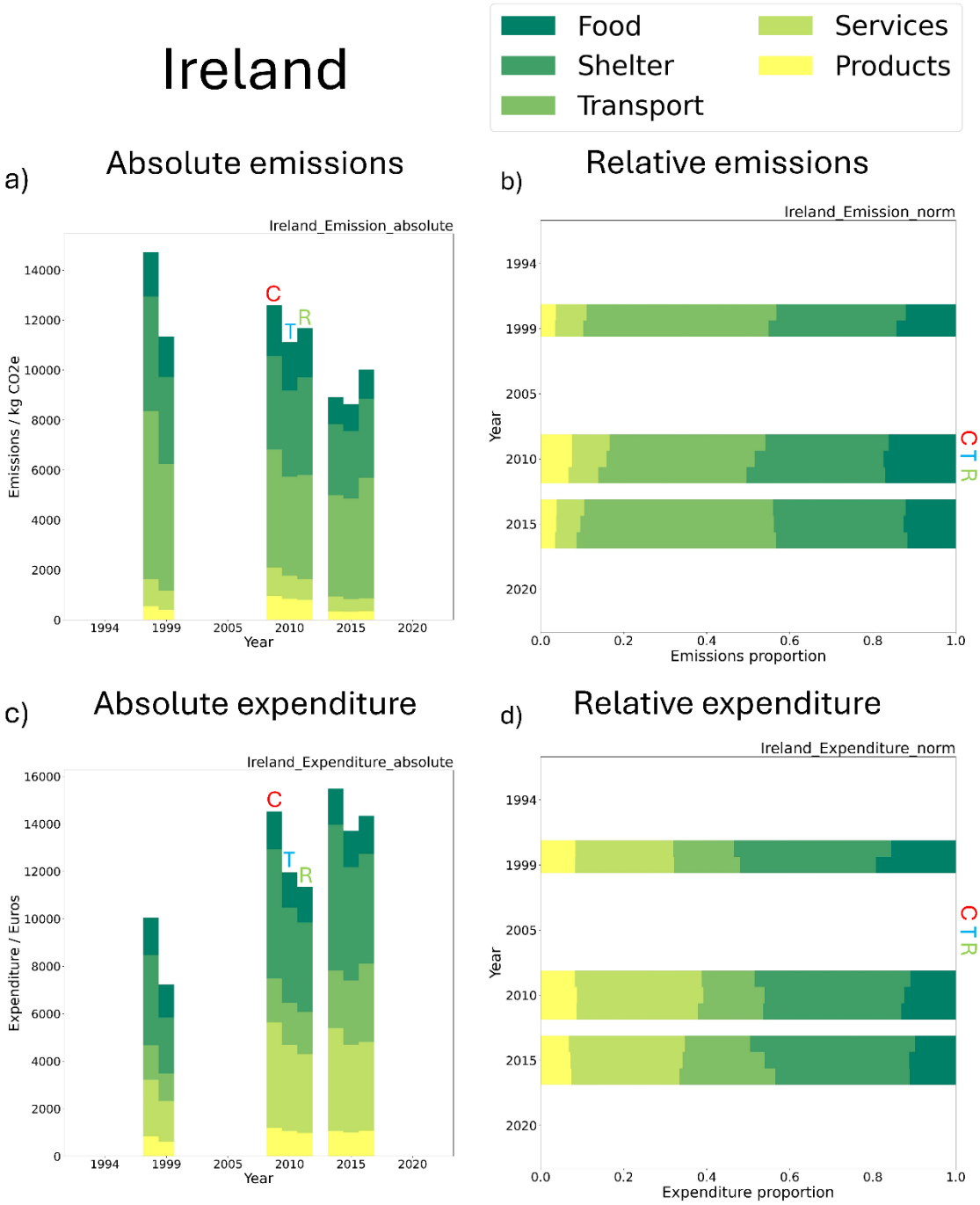

Figure S17: Time series emissions and expenditure for Ireland by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

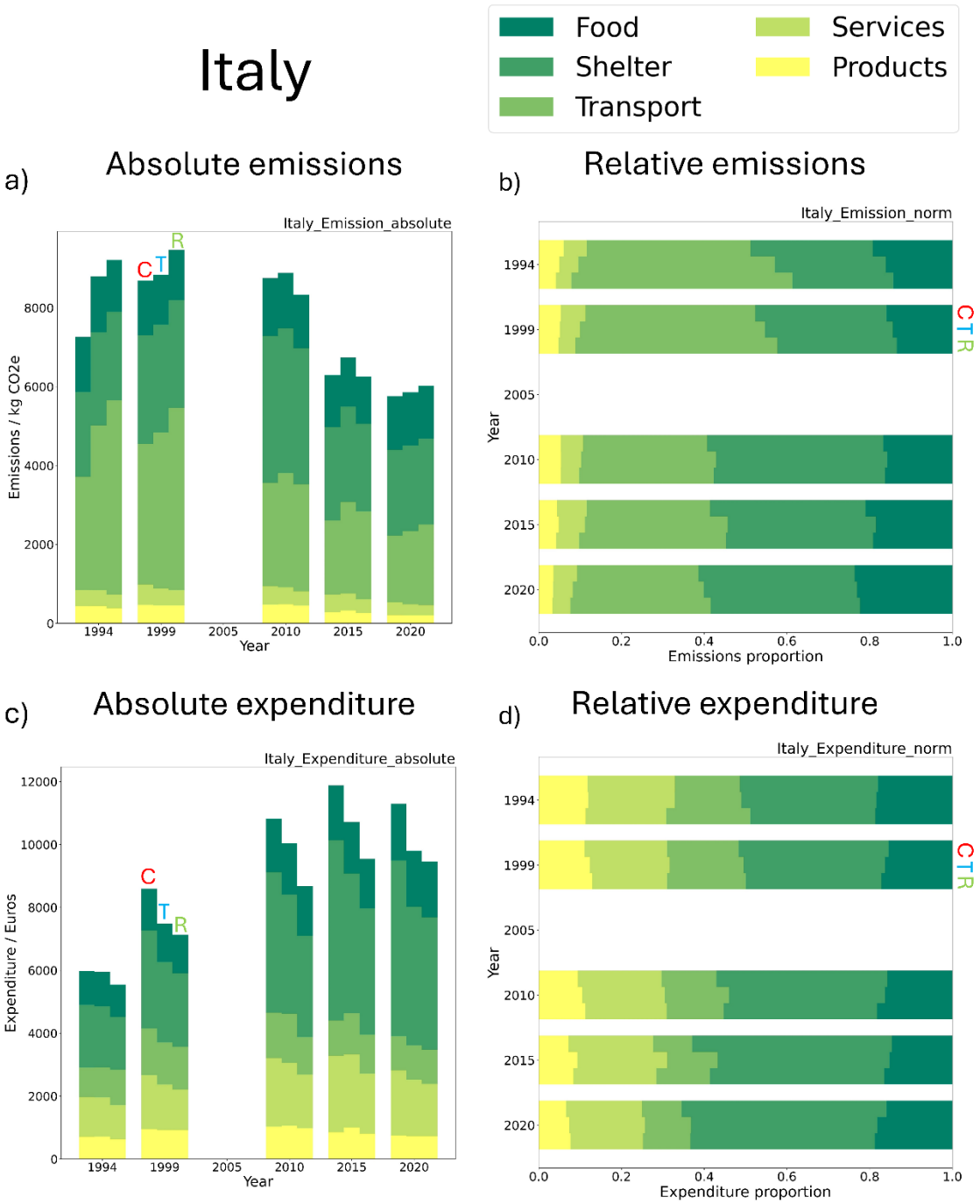

Figure S18: Time series emissions and expenditure for Italy by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

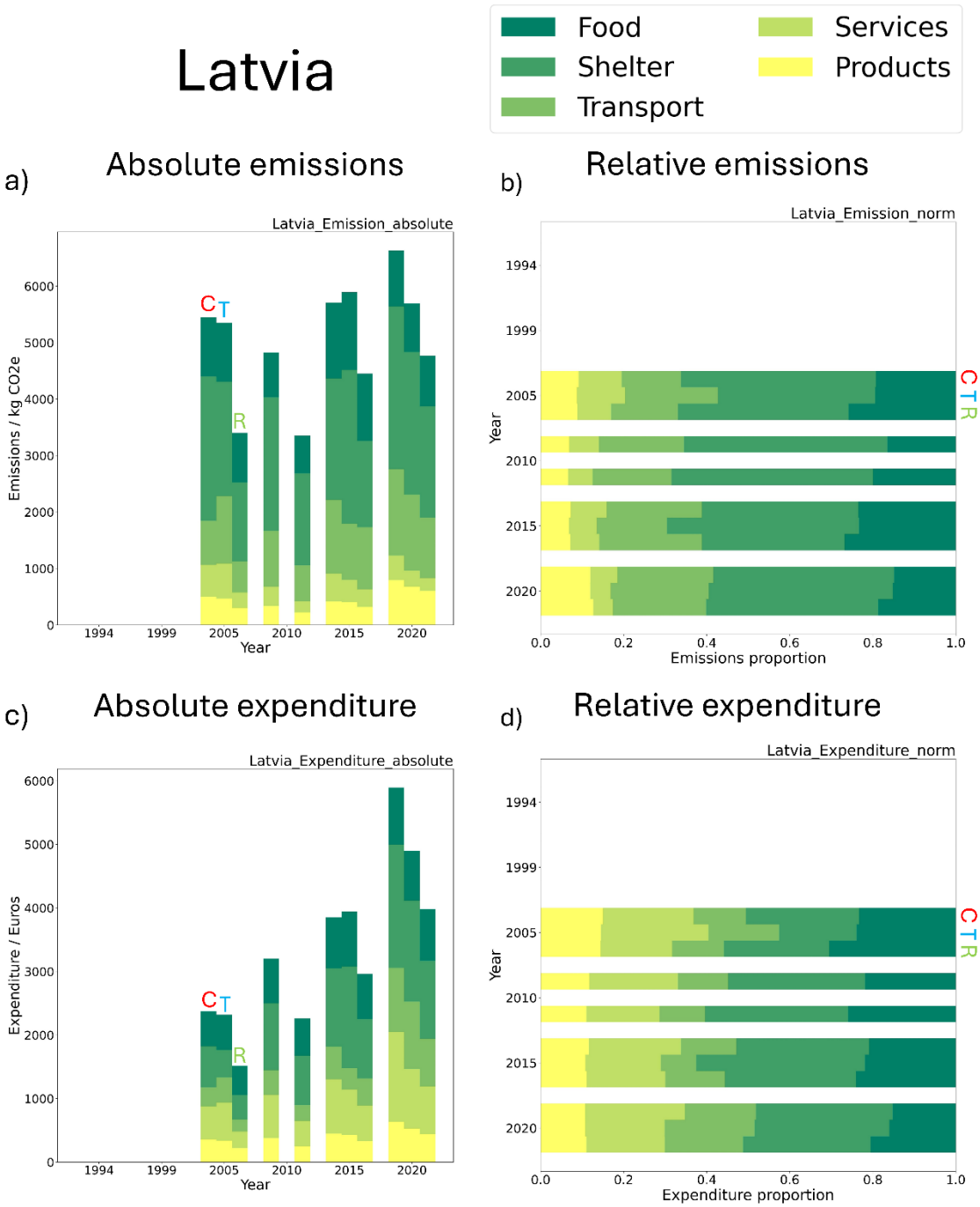

Figure S19: Time series emissions and expenditure for Latvia by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

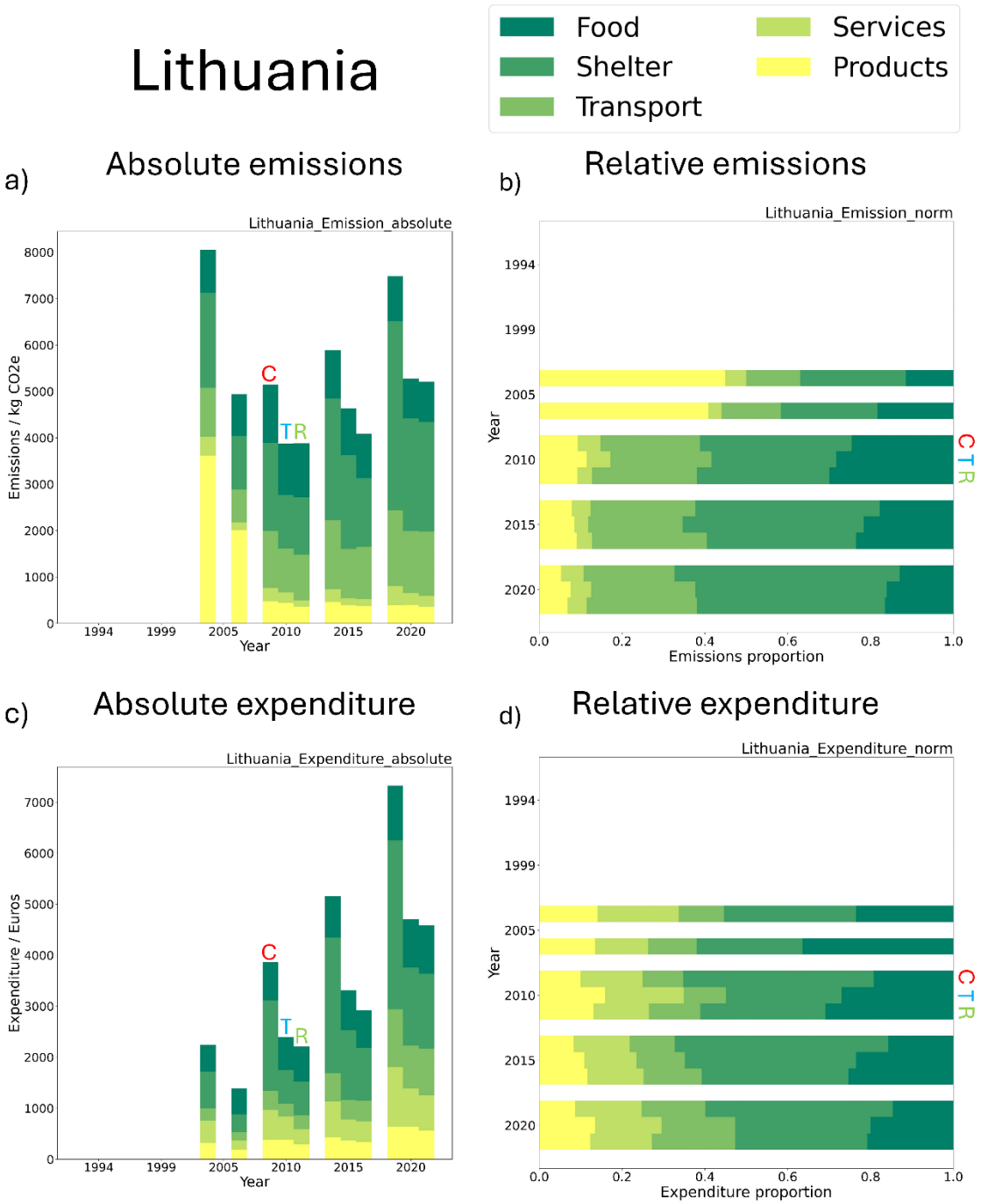

Figure S20: Time series emissions and expenditure for Lithuania by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

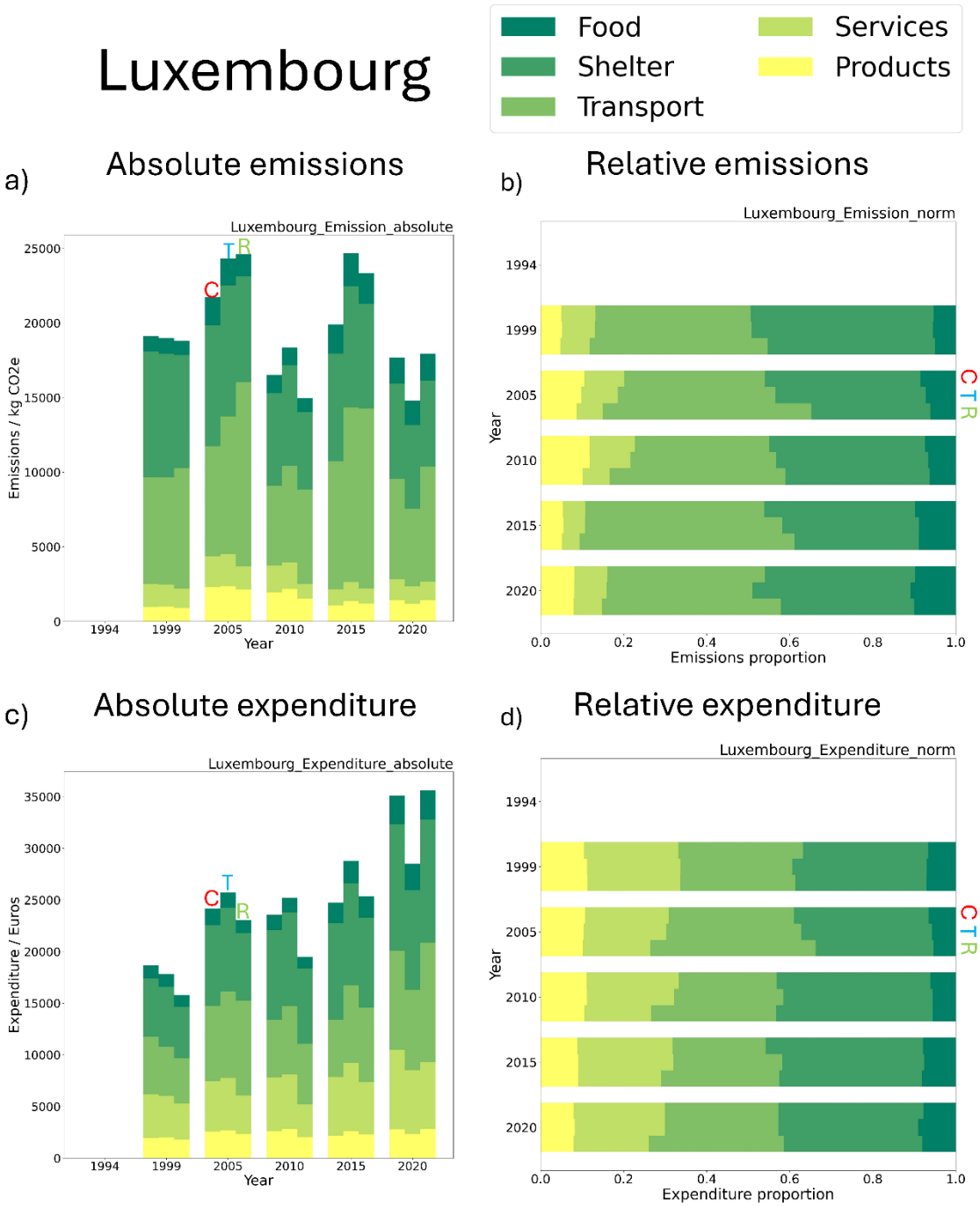

Figure S21: Time series emissions and expenditure for Luxembourg by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

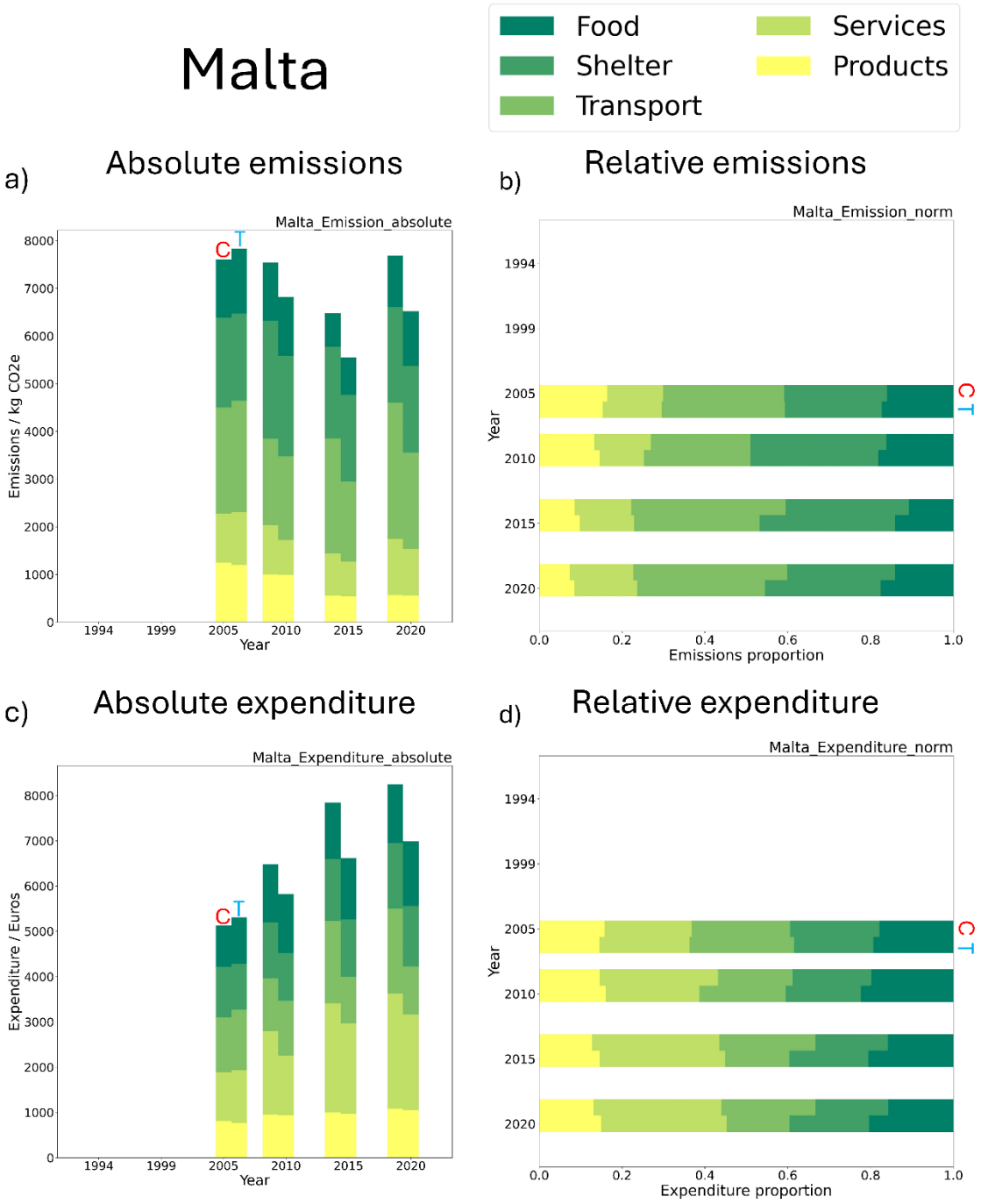

Figure S22: Time series emissions and expenditure for Malta by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

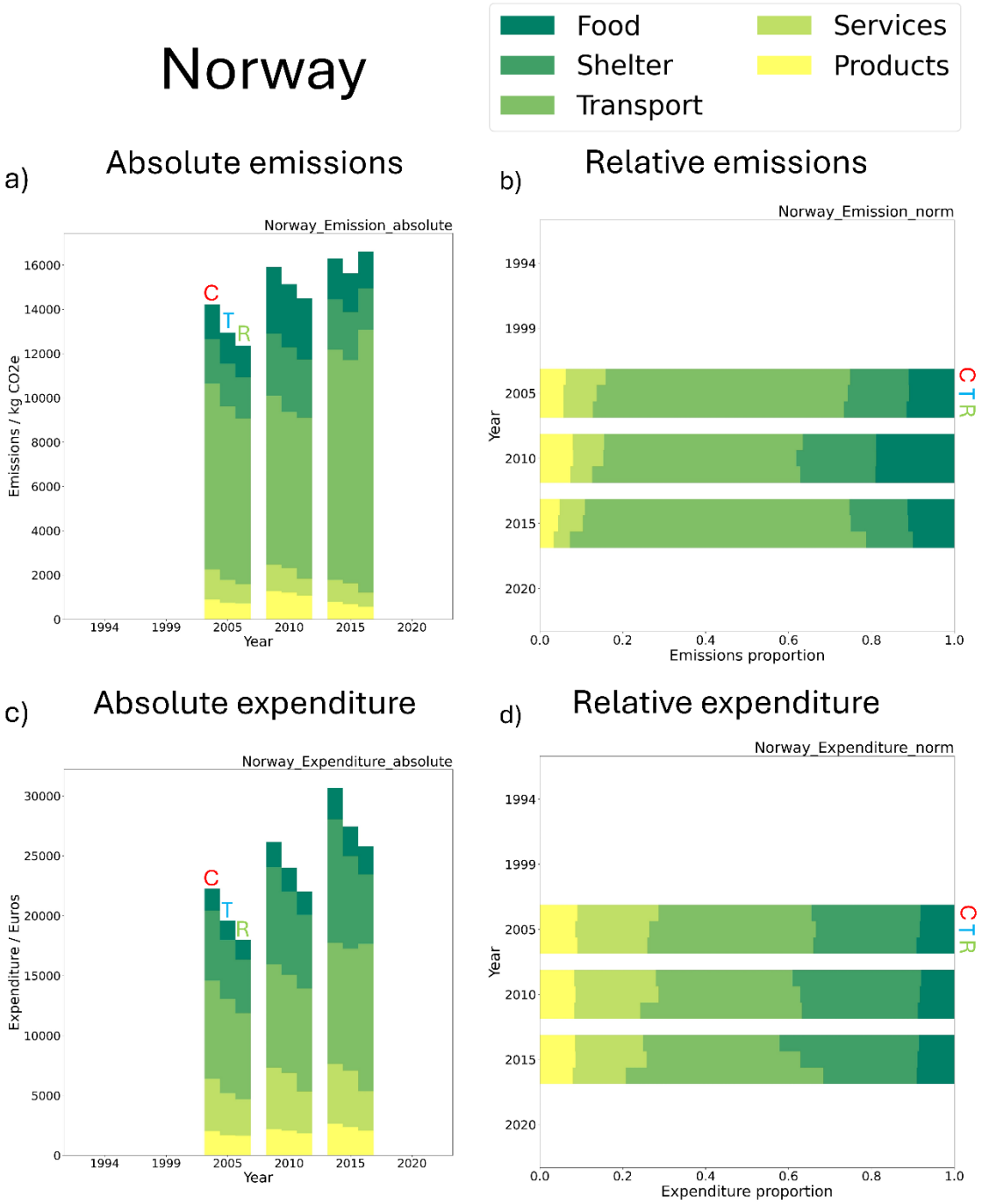

Figure S23: Time series emissions and expenditure for Norway by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

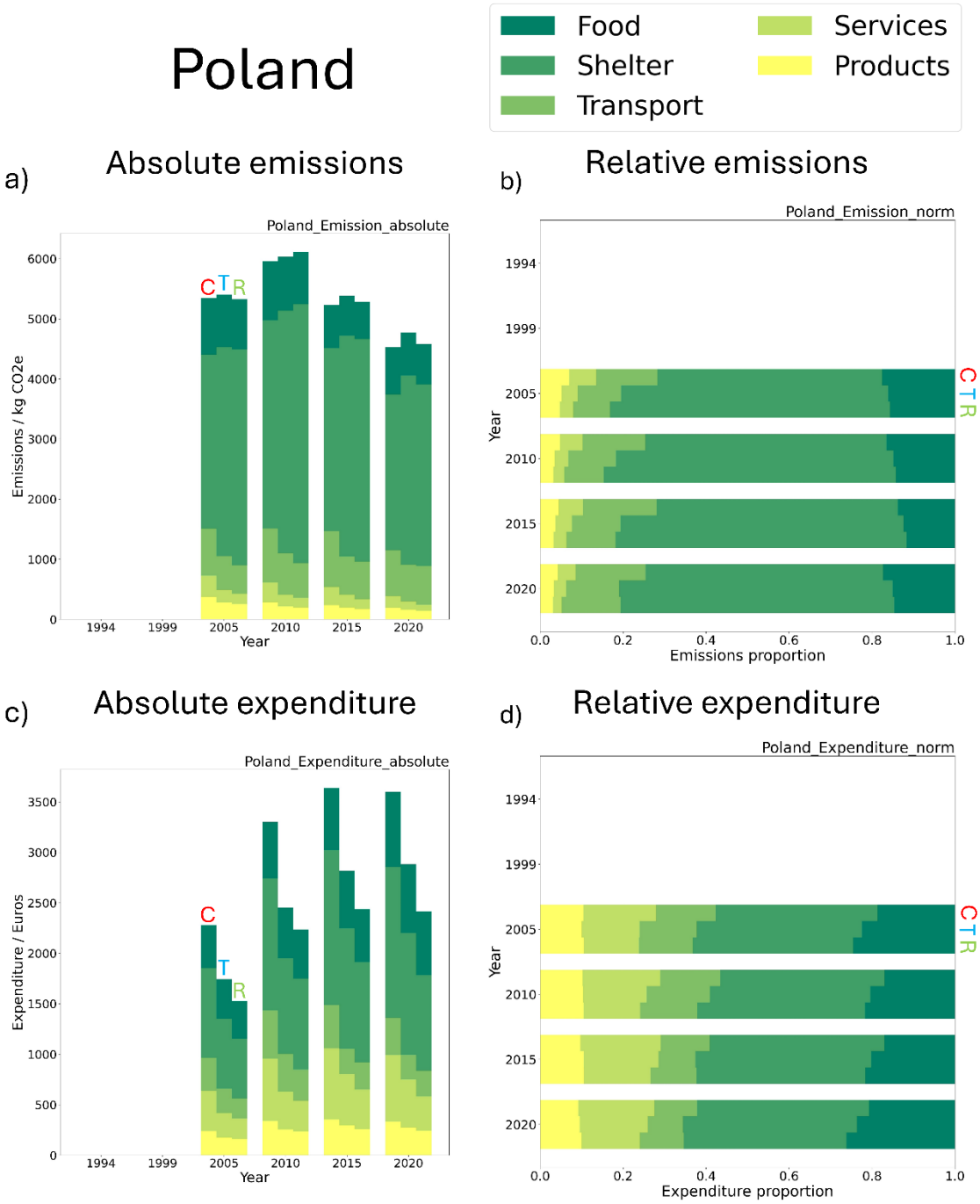

Figure S24: Time series emissions and expenditure for Poland by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

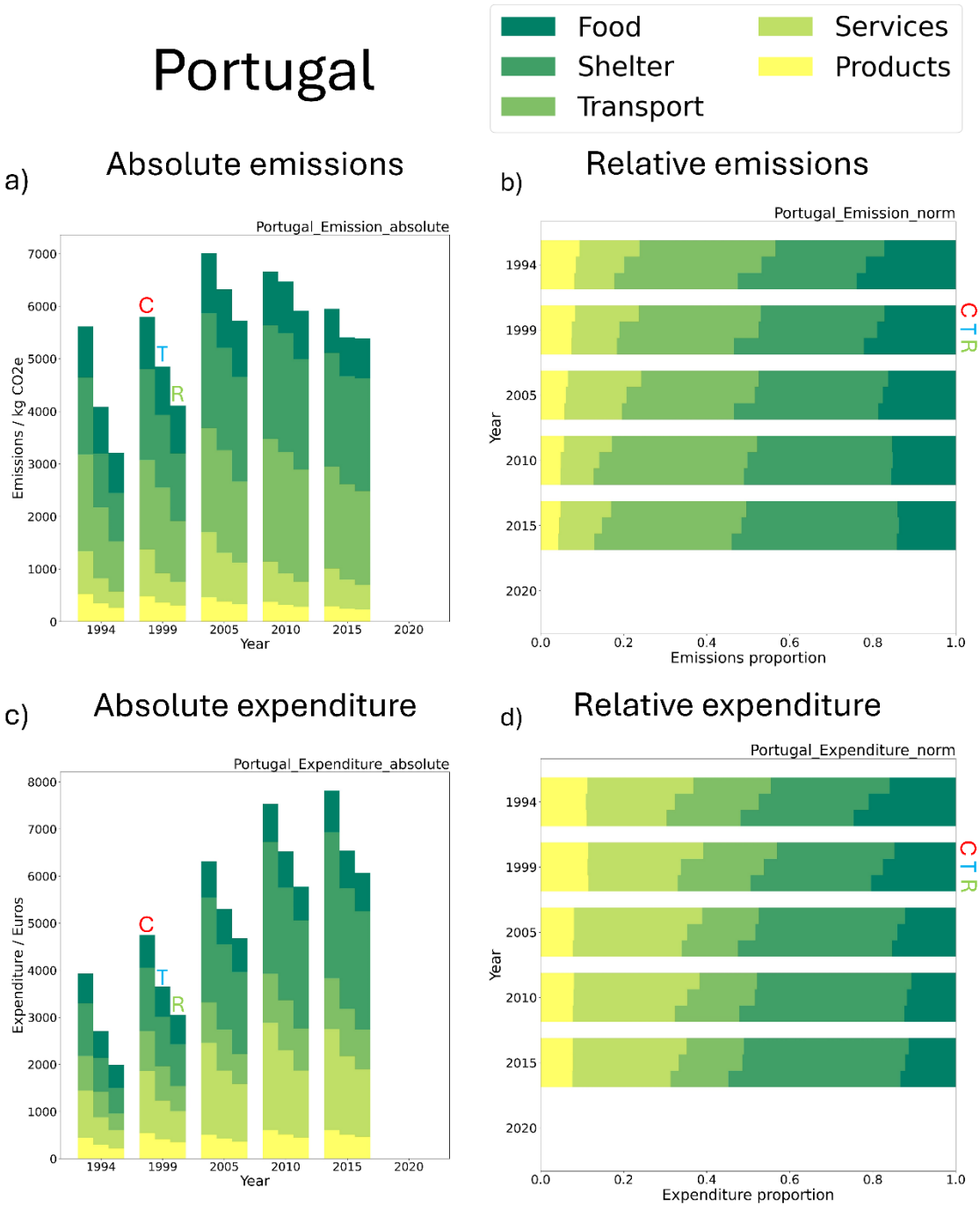

Figure S25: Time series emissions and expenditure for Portugal by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

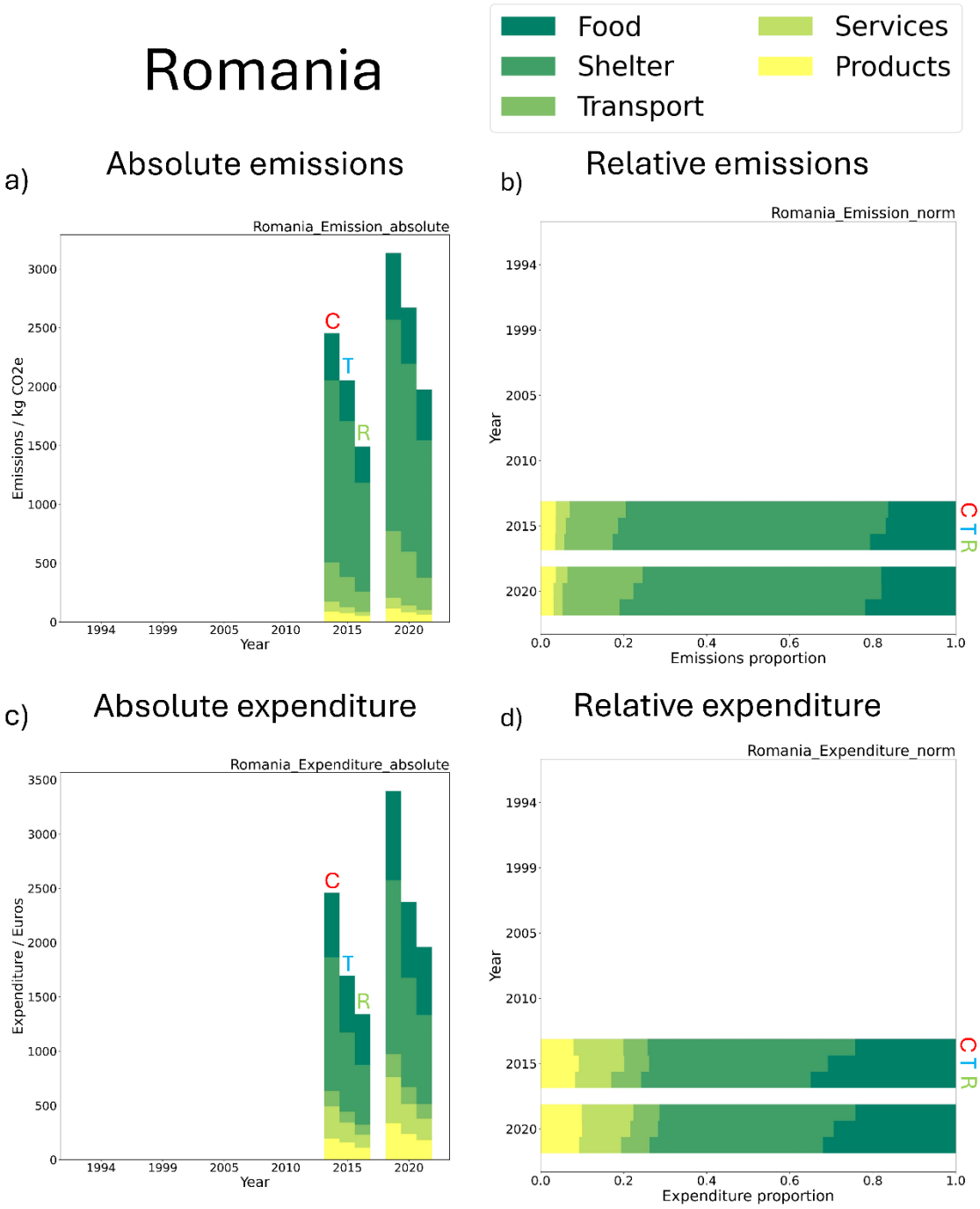

Figure S26: Time series emissions and expenditure for Romania by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

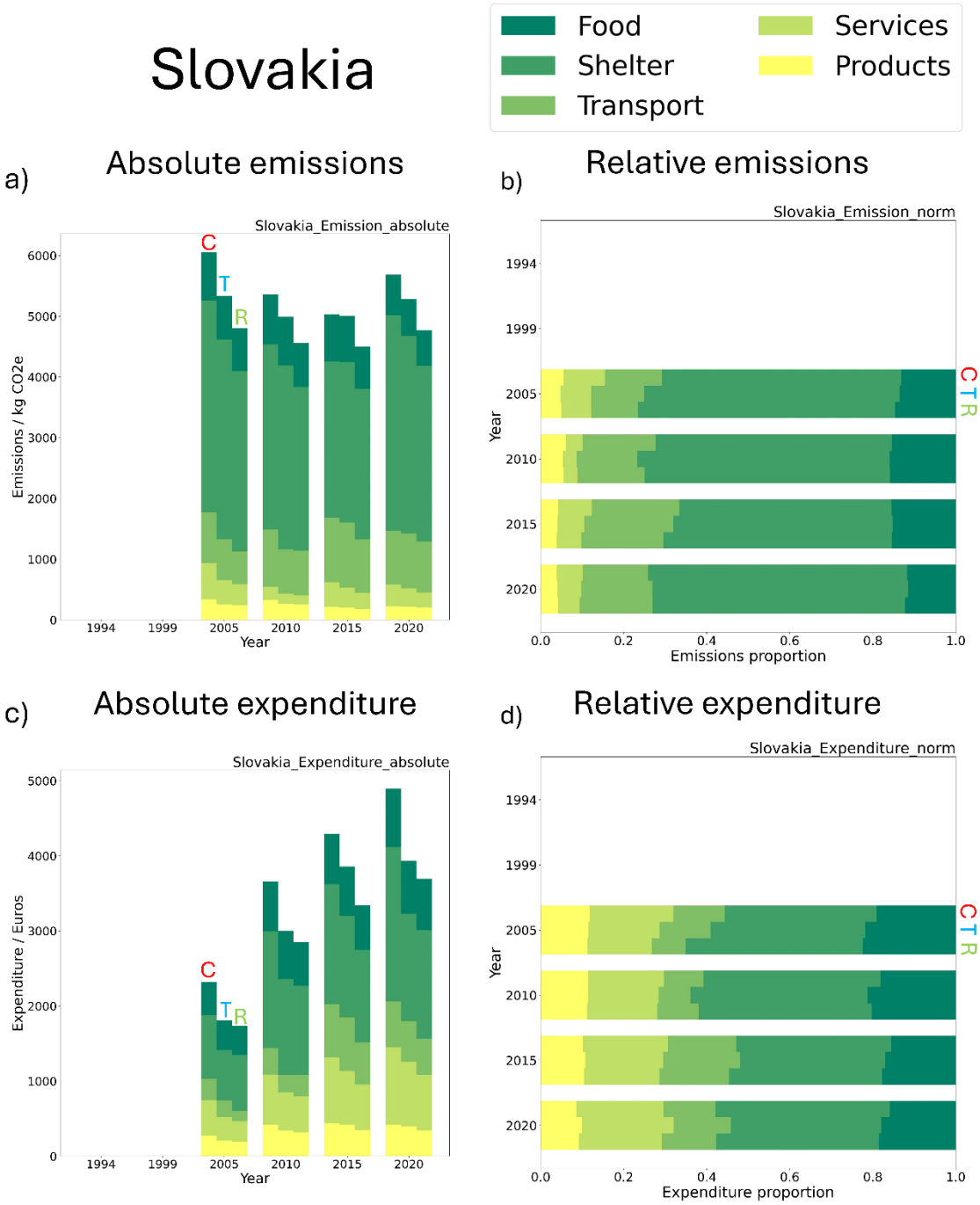

Figure S27: Time series emissions and expenditure for Slovakia by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

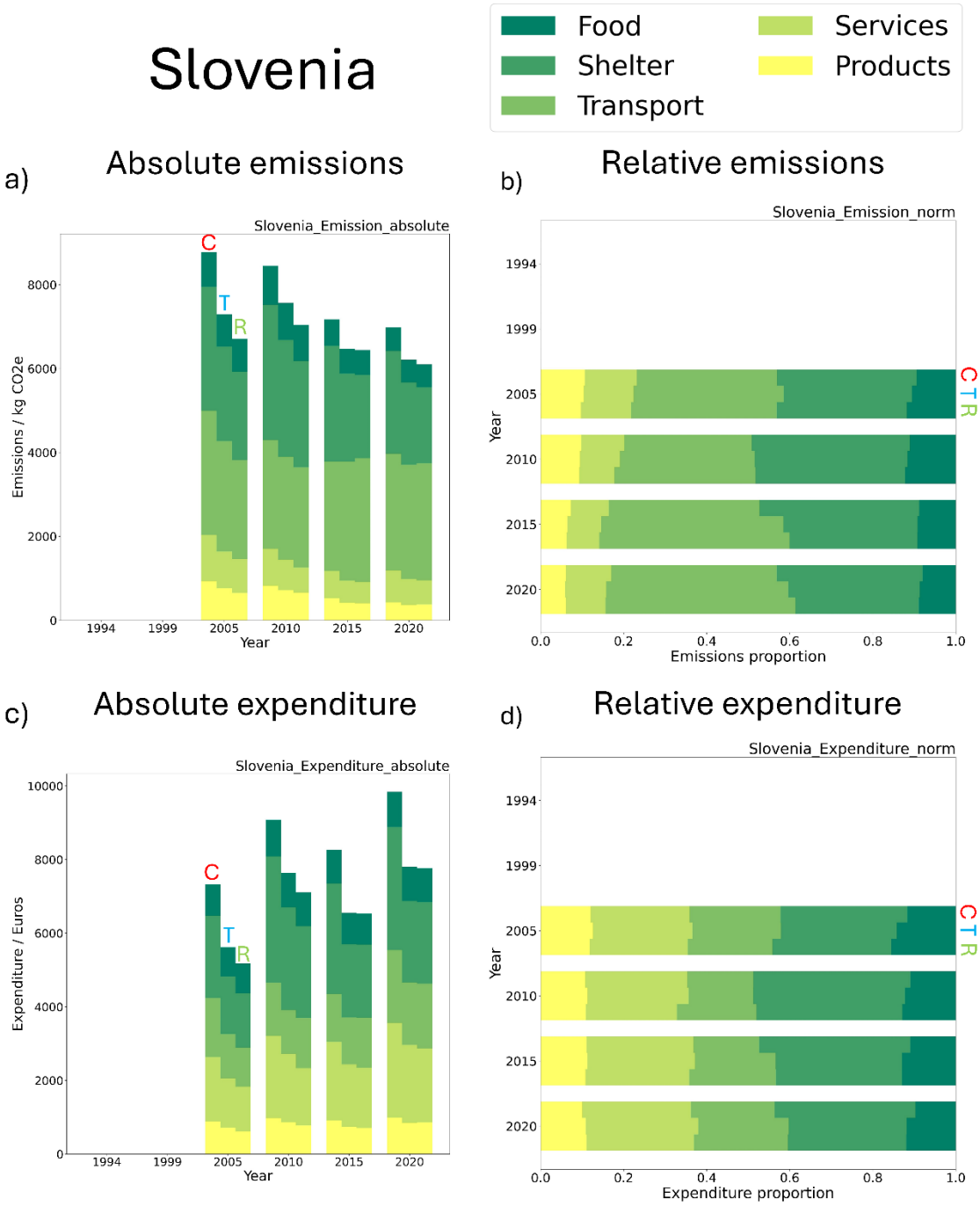

Figure S28: Time series emissions and expenditure for Slovenia by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

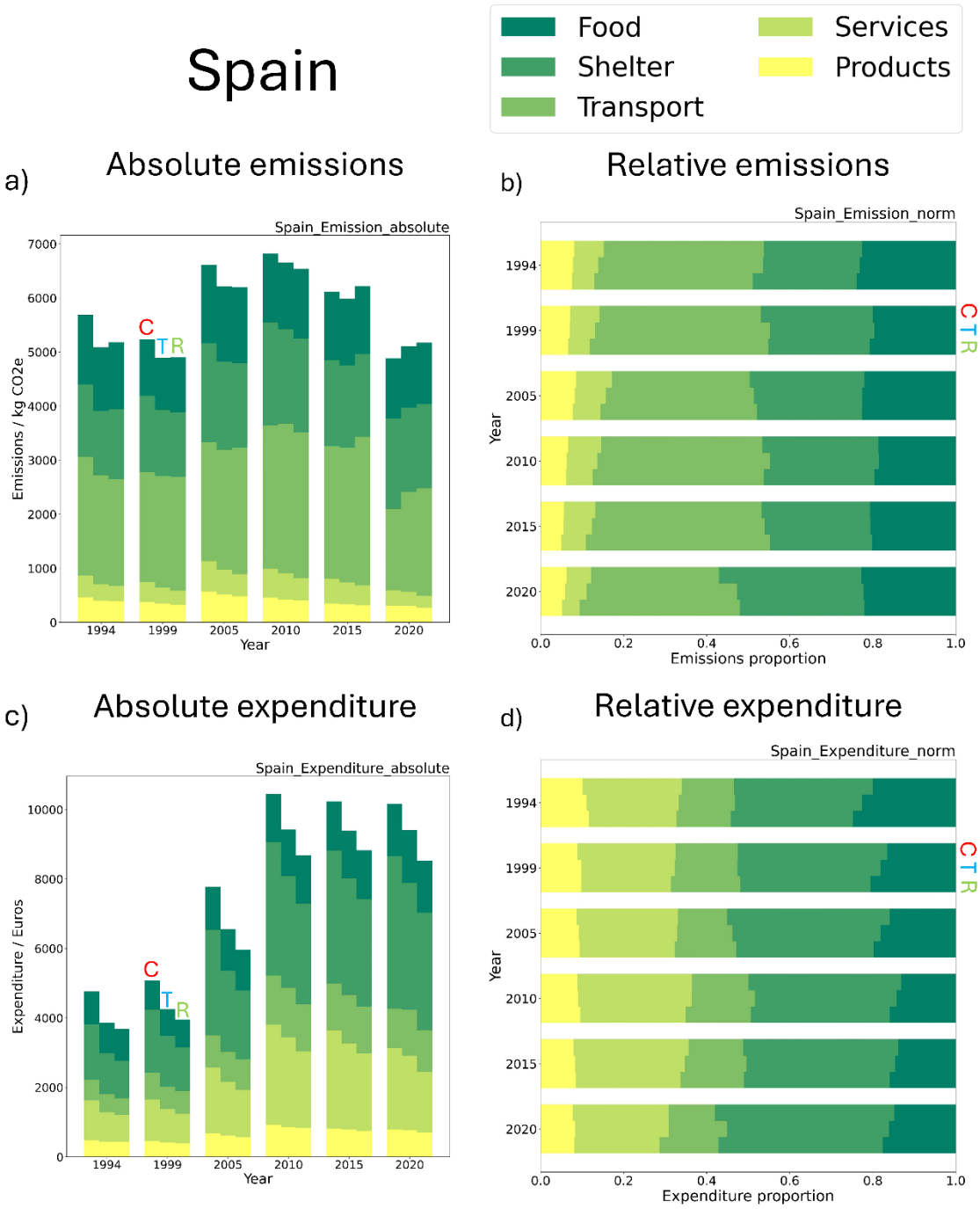

Figure S29: Time series emissions and expenditure for Spain by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

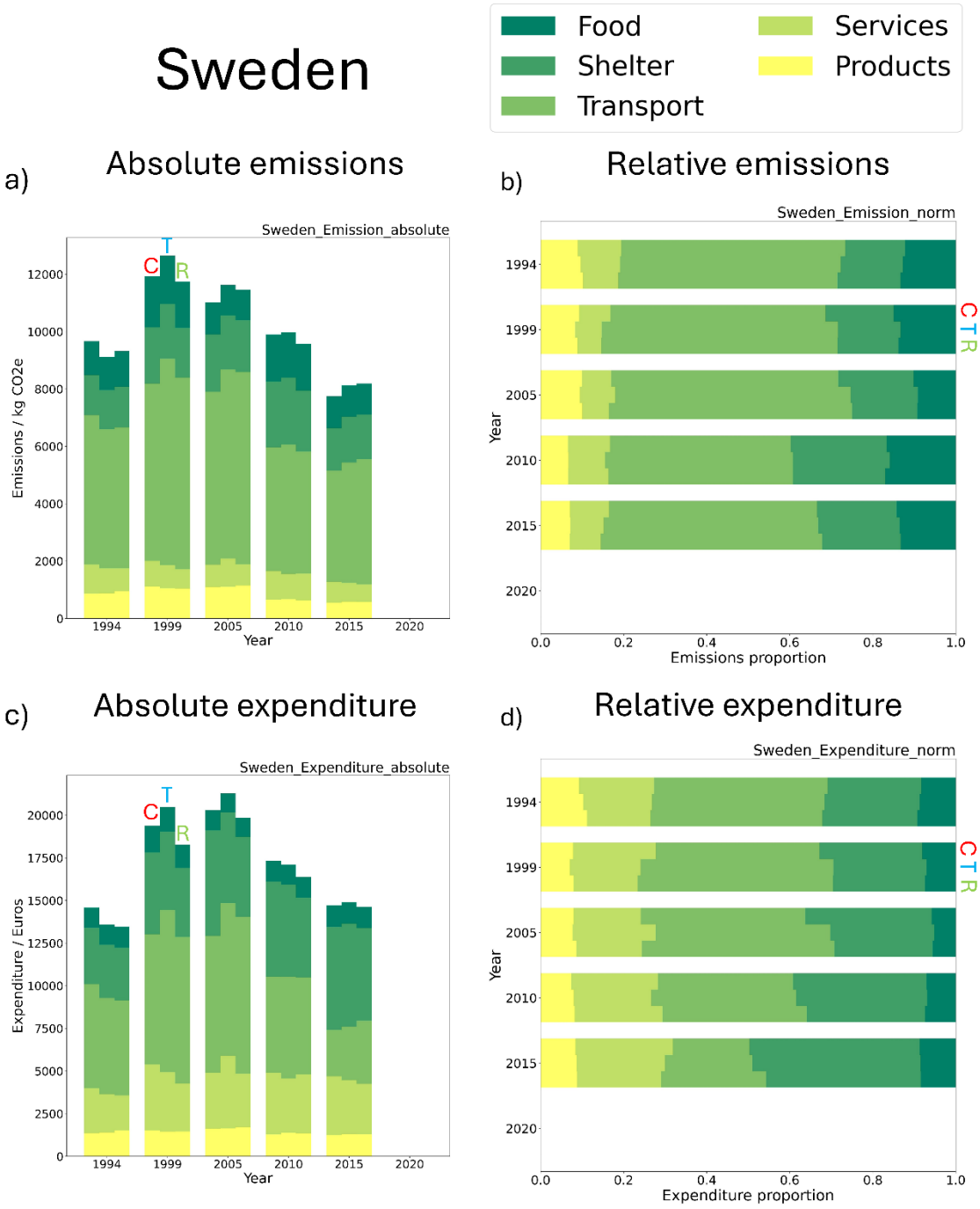

Figure S30: Time series emissions and expenditure for Sweden by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.

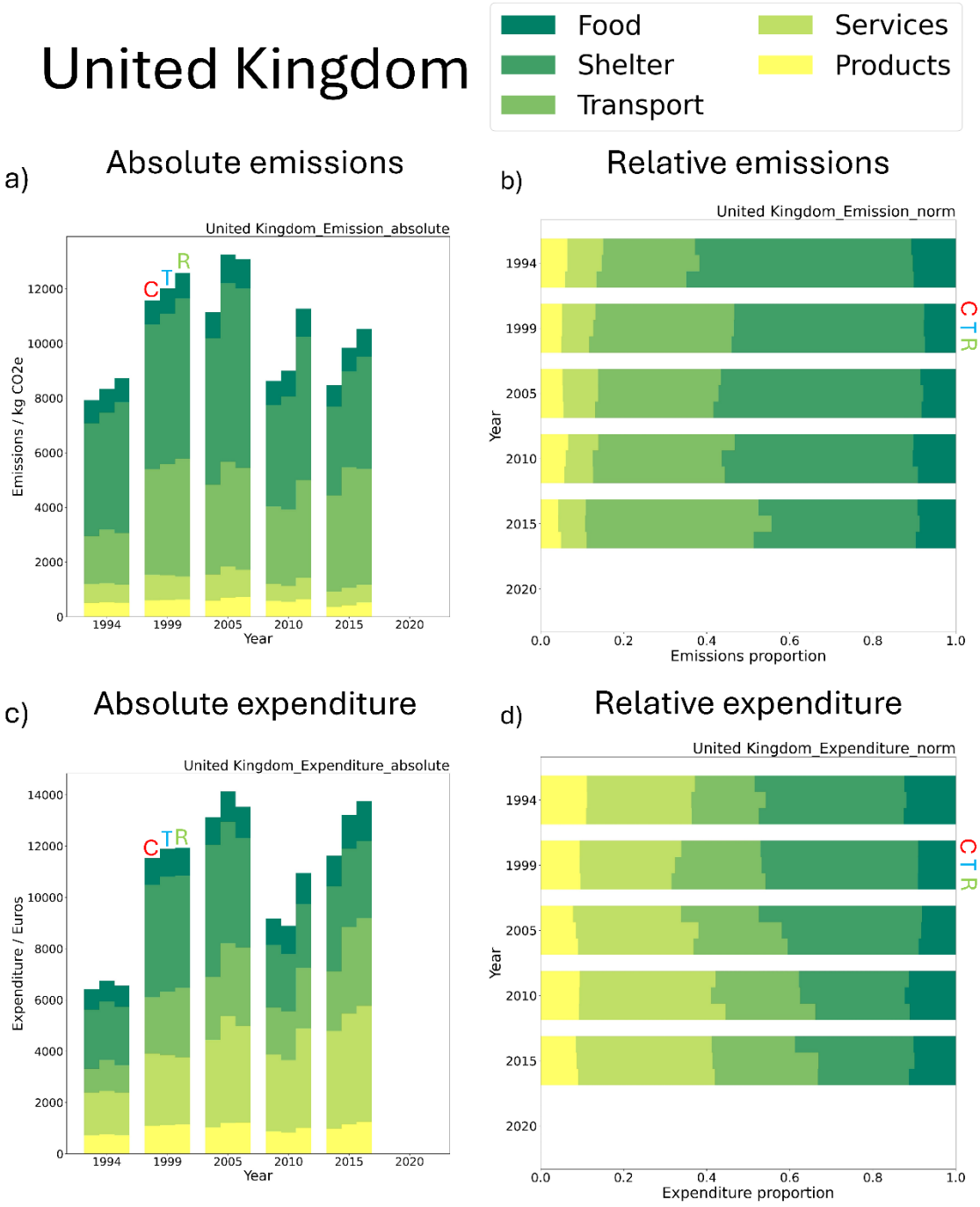

Figure S31: Time series emissions and expenditure for the United Kingdom by sector and degree of urbanisation showing absolute emissions (a) and expenditure (b) as well as the relative contributions of each sector to total emissions (c) and expenditure (d). In all cases, the first, second and first bars represent cities, towns and suburbs and rural areas, respectively, as indicated by the C, T and R labels.