

Data Annex

**International Specialization, Sector Structure and the Evolution of
Manufacturing Energy Intensity in OECD Countries**

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The dataset is available at www.petermulder.net/data

Table A1. Value added and energy shares of Manufacturing subsectors in aggregate Manufacturing

Sector	NACE rev1 code	In terms of:	USA		OECD11		EU8		EU4
			1980	2005	1980	2005	1980	2005	2005
FOOD , BEVERAGES AND TOBACCO	15t16	Energy	8.8	10.4	8.0	9.2	7.8	9.5	11.1
		Value added	10.8	9.2	11.8	8.6	11.9	10.4	12.7
TEXTILES, LEATHER AND FOOTWEAR	17t19	Energy	4.0	2.2	4.0	2.6	3.5	2.0	2.1
		Value added	4.8	2.4	5.9	2.2	5.2	2.3	4.1
WOOD AND CORK	20	Energy	3.8	4.2	2.7	2.6	1.6	2.0	3.3
		Value added	2.8	2.3	2.4	1.8	1.8	2.0	3.9
PULP, PAPER , PRINTING, PUBLISHING	21t22	Energy	19.9	19.5	15.5	15.1	9.6	11.9	8.2
		Value added	13.0	9.3	10.9	8.1	8.2	8.6	4.8
CHEMICALS	24	Energy	26.8	27.7	23.0	22.9	20.3	19.3	21.6
		Value added	10.9	9.1	8.5	10.2	7.3	12.3	6.8
NON-METALLIC MINERALS	26	Energy	7.8	8.9	8.7	9.7	15.5	12.7	15.9
		Value added	3.0	2.7	1.0	3.8	5.4	5.5	16.5
BASIC METALS	27	Energy	16.6	11.7	22.1	16.0	21.0	16.4	23.5
		Value added	4.5	2.8	5.7	3.7	3.9	3.6	2.9
MACHINERY	28t32	Energy	6.5	7.3	6.3	7.1	6.6	6.0	6.8
		Value added	25.5	37.4	31.2	37.7	38.1	30.9	27.6
TRANSPORT EQUIPMENT	34t35	Energy	2.4	3.3	2.5	3.5	2.8	3.6	3.2
		Value added	12.4	11.5	10.8	11.6	7.4	9.3	5.5
NON-SPECIFIED INDUSTRY	25,33,36t37	Energy	3.3	4.7	7.1	11.3	11.3	16.4	4.2
		Value added	12.3	13.2	11.8	12.3	10.8	15.1	15.2

* Aggregate economy = Agriculture + Manufacturing + Services + Construction + Transport

Table A2a. Percentage contribution of the efficiency effect (EFF) and the structure effect (STR) by sector to the annual growth rate of Manufacturing energy intensity. GDP-weighted cross-country averages.

	USA						EU8					
	1980-2005			1995-2005			1980-2005			1995-2005		
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect
Food and beverages	-7.8	0.1	-7.6	-4.7	-1.8	-6.5	2.1	4.4	6.5	-0.1	-5.1	-5.1
Tobacco	0.3	-0.4	-0.2	0.3	-0.5	-0.2	0.1	0.0	0.0	0.1	-0.3	-0.2
Textiles	-2.8	-1.9	-4.7	-2.3	-2.3	-4.6	-0.9	-3.4	-4.3	-0.8	-5.8	-6.6
Leather and footwear	0.0	-0.4	-0.4	-0.1	-0.2	-0.2	-0.2	-0.8	-1.0	0.1	-1.0	-0.9
Wood and Cork	-2.7	-0.9	-3.6	-1.0	-1.9	-2.9	-1.2	0.1	-1.2	1.8	-0.3	1.5
Pulp and paper	-13.3	-3.3	-16.6	-18.4	-2.7	-21.1	-0.4	5.7	5.3	-9.1	-3.1	-12.1
Printing, publishing, etc.	-1.5	-2.0	-3.5	-1.7	-2.6	-4.3	-5.1	3.9	-1.3	-2.2	-2.3	-4.5
Chemicals	-21.2	-5.1	-26.3	-25.2	-9.6	-34.8	-51.9	24.2	-27.7	-42.6	7.7	-34.9
Non-Metallic Minerals	-6.2	-0.9	-7.1	-3.1	-0.7	-3.8	-21.9	-4.2	-26.1	-2.3	-5.7	-8.0
Basic Metals	-12.7	-7.1	-19.8	-8.8	-2.5	-11.3	-27.3	-9.8	-37.1	1.2	-20.4	-19.3
Fabricated metal	-1.2	-0.7	-1.8	-0.9	-0.7	-1.6	2.7	-7.2	-4.4	-2.4	0.3	-2.1
Machinery NEC	-1.0	-1.3	-2.2	-1.0	-0.8	-1.8	-3.9	-0.9	-4.9	-4.3	-0.5	-4.8
Office machinery, etc.	-0.7	0.5	-0.3	-0.7	0.3	-0.3	-0.6	0.3	-0.3	-1.3	0.2	-1.1
Electrical engineering	-5.9	4.2	-1.7	-5.3	3.4	-1.9	-0.9	0.9	-0.1	-3.5	1.7	-1.8
Motor vehicles, trailers, etc.	-1.5	0.5	-1.0	-2.2	0.8	-1.5	-2.3	1.4	-0.9	-1.9	1.6	-0.3
Other transport equipment	-0.3	-0.6	-0.9	-0.2	-0.2	-0.4	-0.9	0.1	-0.7	-1.6	1.1	-0.5
Rubber and plastics	-2.0	1.0	-0.9	-1.4	-0.3	-1.7	-15.2	15.2	0.0	-7.1	10.2	3.1
Medical instruments etc.	-0.6	-0.2	-0.7	-0.3	-0.3	-0.5	-2.1	1.7	-0.4	-4.0	2.4	-1.6
Manufacturing nec; recycling	-0.8	0.1	-0.7	-0.5	0.0	-0.5	2.7	-4.4	-1.7	3.2	-4.0	-0.8
MANUFACTURING	-81.7	-18.3	-100.0	-77.5	-22.5	-100.0	-127.1	27.1	-100.0	-77.0	-23.0	-100.0

Table A2b. Percentage contribution of the efficiency effect (EFF) and the structure effect (STR) by sector to the annual growth rate of Manufacturing energy intensity. GDP-weighted cross-country averages.

	OECD11						OECD19			EU4			EU16		
	1980-2005			1995-2005			1995-2005			1995-2005			1995-2005		
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect
Food and beverages	-4.3	-0.1	-4.4	-3.0	-2.9	-5.9	-2.9	-3.2	-6.1	-6.5	-7.5	-14.1	-0.6	-5.9	-6.5
Tobacco	0.2	-0.3	-0.1	0.2	-0.4	-0.2	0.1	-0.3	-0.2	0.0	-0.1	-0.1	0.1	-0.2	-0.2
Textiles	-1.0	-3.5	-4.6	-0.9	-4.4	-5.2	-0.8	-4.8	-5.6	-1.1	-3.4	-4.5	-0.3	-7.8	-8.0
Leather and footwear	0.1	-0.6	-0.5	0.0	-0.5	-0.5	0.0	-0.5	-0.5	-0.6	-0.9	-1.6	0.0	-1.2	-1.2
Wood and Cork	-1.6	-1.2	-2.8	-0.3	-1.6	-1.9	-0.3	-1.3	-1.6	0.0	0.1	0.1	1.8	0.2	1.9
Pulp and paper	-9.6	-1.9	-11.5	-15.0	-3.9	-18.9	-14.9	-3.8	-18.7	-0.2	-1.8	-2.0	-9.9	-3.0	-12.9
Printing, publishing, etc.	-1.4	-1.1	-2.6	-1.1	-2.8	-3.9	-1.0	-2.9	-3.8	-0.1	-0.9	-1.0	-0.8	-3.0	-3.8
Chemicals	-29.3	6.2	-23.1	-25.5	-4.5	-30.0	-24.0	-4.6	-28.5	16.0	-15.6	0.4	-26.6	2.6	-24.1
Non-Metallic Minerals	-8.8	-3.5	-12.3	-2.4	-3.8	-6.2	-4.9	-1.9	-6.8	-36.3	16.5	-19.7	-15.4	5.2	-10.2
Basic Metals	-16.3	-11.9	-28.2	-6.7	-8.2	-14.9	-6.1	-10.0	-16.1	0.9	-41.8	-40.9	2.5	-26.9	-24.5
Fabricated metal	0.2	-2.3	-2.2	-0.7	-1.0	-1.7	-0.8	-0.9	-1.8	-4.2	0.8	-3.3	-2.5	0.3	-2.3
Machinery NEC	-1.5	-0.9	-2.4	-1.4	-0.6	-1.9	-1.3	-0.7	-1.9	-4.8	-0.6	-5.4	-2.6	-1.0	-3.6
Office machinery, etc.	-0.7	0.5	-0.2	-0.8	0.4	-0.4	-0.8	0.4	-0.4	-0.2	0.3	0.1	-1.0	0.3	-0.7
Electrical engineering	-4.6	3.8	-0.8	-5.5	4.0	-1.5	-5.8	4.4	-1.4	-3.0	2.3	-0.7	-5.6	4.6	-1.0
Motor vehicles, trailers, etc.	-1.6	0.8	-0.8	-1.9	0.8	-1.1	-2.0	0.9	-1.1	-6.8	3.9	-2.9	-2.4	1.5	-1.0
Other transport equipment	-0.3	-0.4	-0.7	-0.3	0.0	-0.2	-0.3	0.0	-0.3	-0.2	-1.2	-1.4	-1.0	0.3	-0.7
Rubber and plastics	-3.9	3.1	-0.8	-2.6	-0.1	-2.7	-2.7	0.2	-2.5	-2.6	1.9	-0.7	-5.6	6.5	0.8
Medical instruments etc.	-0.6	-0.1	-0.7	-0.8	-0.4	-1.1	-0.7	-0.4	-1.1	0.0	-0.1	-0.1	-2.5	1.2	-1.3
Manufacturing nec; recycling	-0.4	-1.0	-1.3	-0.9	-0.8	-1.6	-0.6	-0.9	-1.5	-2.0	-0.1	-2.1	2.4	-3.3	-0.9
MANUFACTURING	-85.6	-14.4	-100.0	-69.5	-30.5	-100.0	-69.7	-30.3	-100.0	-51.7	-48.3	-100.0	-70.3	-29.7	-100.0

Table A3a. Decomposition of β -convergence, per sector

	1980-2005						1980-2005					
	OECD11			OECD11			EU8			EU8		
	EFFICIENCY EFFECT			STRUCTURAL EFFECT			EFFICIENCY EFFECT			STRUCTURAL EFFECT		
	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2
Food and beverages	-0.049	-3.975	0.41	0.010	1.128	0.32	-0.073	-3.914	0.44	0.015	1.081	0.24
Tobacco	-0.001	-0.750	0.09	0.000	0.333	0.17	-0.001	-0.615	0.06	0.001	0.500	0.09
Textiles	-0.034	-2.677	0.18	-0.003	-0.358	0.81	-0.039	-4.063	0.41	0.002	0.485	0.45
Leather and footwear	-0.006	-3.150	0.28	0.008	2.075	0.59	-0.006	-3.056	0.32	0.002	1.333	0.14
Wood and Cork	-0.010	-1.437	0.33	0.002	0.429	0.30	-0.015	-1.681	0.44	0.000	0.000	0.37
Pulp and paper	0.005	0.171	0.18	0.055	1.868	0.11	0.004	0.084	0.17	0.084	1.725	0.13
Printing, publishing, etc.	-0.004	-0.185	0.14	0.005	0.634	0.27	-0.005	-0.116	0.12	-0.004	-0.282	0.28
Chemicals	-0.050	-1.384	0.33	0.034	1.365	0.25	-0.028	-0.584	0.39	-0.010	-0.299	0.16
Non-Metallic Minerals	-0.069	-2.548	0.20	-0.014	-1.286	0.46	-0.111	-2.786	0.28	-0.035	-2.370	0.58
Basic Metals	-0.093	-1.947	0.33	0.011	0.242	0.36	-0.108	-1.621	0.40	0.026	0.366	0.32
Fabricated metal	-0.015	-2.254	0.22	0.008	2.000	0.44	-0.022	-2.287	0.29	0.001	0.151	0.52
Machinery NEC	-0.006	-1.632	0.34	0.000	0.125	0.36	-0.016	-3.154	0.51	0.001	0.200	0.37
Office machinery, etc.	0.001	0.778	0.28	0.001	0.667	0.27	-0.001	-0.625	0.14	0.001	0.714	0.24
Electrical engineering	0.003	0.674	0.39	-0.004	-1.189	0.43	-0.009	-1.809	0.39	0.002	0.621	0.36
Motor vehicles, trailers, etc.	-0.005	-1.159	0.17	-0.003	-1.120	0.20	-0.012	-2.071	0.23	-0.003	-0.757	0.21
Other transport equipment	-0.004	-1.615	0.14	-0.002	-0.773	0.18	-0.008	-1.925	0.20	-0.002	-0.469	0.22
Rubber and plastics	-0.046	-3.742	0.47	0.014	2.585	0.63	-0.068	-3.690	0.53	0.010	1.118	0.62
Medical instruments etc.	-0.013	-3.308	0.31	0.008	3.231	0.32	-0.018	-3.034	0.35	0.004	2.095	0.52
Manufacturing nec; recycling	-0.028	-3.693	0.32	0.006	2.905	0.60	-0.046	-4.269	0.45	0.007	2.129	0.59
MANUFACTURING	-0.425			0.136			-0.578			0.100		

Table A3b. Decomposition of β -convergence, per sector

	1980-1995						1980-1995					
	OECD11			OECD11			EU8			EU8		
	EFFICIENCY EFFECT			STRUCTURAL EFFECT			EFFICIENCY EFFECT			STRUCTURAL EFFECT		
	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2
Food and beverages	-0.071	-5.450	0.70	0.007	0.523	0.32	-0.097	-5.330	0.77	0.012	0.578	0.15
Tobacco	-0.001	-0.615	0.11	0.000	0.400	0.18	-0.001	-0.636	0.10	0.001	0.706	0.14
Textiles	-0.050	-2.269	0.23	0.004	0.478	0.92	-0.061	-4.698	0.67	0.003	0.805	0.64
Leather and footwear	-0.011	-3.645	0.45	0.018	2.889	0.66	-0.008	-2.690	0.46	0.002	0.850	0.13
Wood and Cork	-0.025	-2.091	0.33	0.003	0.405	0.30	-0.037	-2.566	0.52	0.003	0.277	0.38
Pulp and paper	-0.059	-1.565	0.18	0.004	0.142	0.45	-0.065	-1.045	0.14	-0.008	-0.203	0.41
Printing, publishing, etc.	0.002	0.053	0.08	0.005	0.384	0.32	0.015	0.212	0.08	0.007	0.288	0.32
Chemicals	-0.107	-2.316	0.44	0.020	0.556	0.41	-0.061	-0.922	0.34	-0.024	-0.495	0.38
Non-Metallic Minerals	-0.079	-2.230	0.45	-0.022	-1.734	0.73	-0.104	-2.138	0.53	-0.032	-1.753	0.78
Basic Metals	-0.107	-1.479	0.47	-0.009	-0.149	0.66	-0.092	-0.985	0.57	0.017	0.184	0.63
Fabricated metal	-0.016	-1.582	0.46	0.005	1.080	0.70	-0.021	-1.626	0.57	-0.001	-0.123	0.78
Machinery NEC	-0.010	-1.667	0.40	-0.003	-0.867	0.59	-0.022	-2.805	0.59	-0.002	-0.395	0.63
Office machinery, etc.	0.001	0.615	0.28	0.000	0.111	0.48	-0.001	-1.857	0.44	0.001	1.429	0.29
Electrical engineering	0.003	0.500	0.39	-0.007	-1.479	0.44	-0.007	-1.302	0.63	-0.002	-0.696	0.66
Motor vehicles, trailers, etc.	-0.013	-2.745	0.38	-0.002	-0.767	0.35	-0.016	-3.383	0.58	-0.002	-0.435	0.21
Other transport equipment	-0.006	-1.622	0.18	-0.002	-0.750	0.16	-0.010	-1.807	0.25	-0.003	-0.698	0.23
Rubber and plastics	-0.061	-3.421	0.54	0.007	1.278	0.81	-0.074	-2.633	0.53	-0.003	-0.446	0.85
Medical instruments etc.	-0.020	-3.111	0.34	0.007	2.219	0.34	-0.029	-3.053	0.44	0.003	1.889	0.63
Manufacturing nec; recycling	-0.044	-3.669	0.45	0.004	1.370	0.44	-0.066	-3.723	0.56	0.001	0.250	0.40
MANUFACTURING	-0.672			0.040			-0.756			-0.026		

Table A3c. Decomposition of β -convergence, per sector

	1995-2005						1995-2005					
	OECD11			OECD11			EU8			EU8		
	EFFICIENCY EFFECT			STRUCTURAL EFFECT			EFFICIENCY EFFECT			STRUCTURAL EFFECT		
	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2
Food and beverages	-0.061	-2.235	0.52	-0.013	-0.774	0.65	-0.084	-2.406	0.53	-0.015	-0.702	0.68
Tobacco	-0.001	-0.429	0.22	0.001	1.000	0.36	-0.001	-0.867	0.27	0.001	0.588	0.26
Textiles	-0.016	-1.291	0.64	0.011	0.725	0.80	-0.018	-1.167	0.34	-0.005	-1.190	0.70
Leather and footwear	-0.006	-1.333	0.47	0.009	0.833	0.64	-0.004	-1.750	0.36	0.000	-0.250	0.35
Wood and Cork	0.009	0.791	0.58	0.001	0.109	0.74	0.002	0.113	0.62	0.003	0.564	0.65
Pulp and paper	0.109	1.267	0.22	0.114	1.428	0.26	0.107	0.930	0.17	0.157	1.470	0.29
Printing, publishing, etc.	-0.079	-1.717	0.62	-0.018	-1.521	0.57	-0.114	-1.906	0.65	-0.019	-1.324	0.57
Chemicals	0.023	0.318	0.59	-0.057	-2.018	0.63	-0.025	-0.310	0.64	-0.064	-1.960	0.60
Non-Metallic Minerals	-0.039	-0.782	0.33	-0.016	-0.787	0.57	-0.063	-0.984	0.27	-0.007	-0.330	0.57
Basic Metals	-0.044	-0.779	0.47	0.015	0.391	0.18	-0.029	-0.406	0.44	0.017	0.388	0.16
Fabricated metal	-0.029	-2.402	0.41	0.009	2.200	0.70	-0.040	-2.608	0.46	0.008	1.727	0.55
Machinery NEC	-0.012	-1.360	0.39	-0.001	-0.261	0.23	-0.022	-2.210	0.51	0.000	0.074	0.26
Office machinery, etc.	0.001	0.357	0.57	-0.001	-0.227	0.22	0.000	-0.118	0.27	-0.002	-1.583	0.53
Electrical engineering	-0.007	-0.881	0.67	0.011	1.701	0.68	-0.017	-1.965	0.52	0.005	0.730	0.36
Motor vehicles, trailers, etc.	-0.005	-0.495	0.38	-0.008	-1.415	0.43	-0.013	-1.094	0.31	-0.003	-0.391	0.45
Other transport equipment	-0.013	-1.894	0.28	0.002	0.457	0.29	-0.018	-2.131	0.35	0.006	1.052	0.32
Rubber and plastics	-0.052	-2.192	0.66	-0.002	-0.180	0.69	-0.073	-2.649	0.74	-0.002	-0.123	0.67
Medical instruments etc.	-0.023	-2.411	0.34	0.009	1.896	0.66	-0.029	-2.504	0.37	0.010	2.149	0.53
Manufacturing nec; recycling	-0.045	-2.390	0.49	0.014	3.317	0.83	-0.061	-2.675	0.56	0.017	3.660	0.84
MANUFACTURING	-0.290			0.108			-0.503			0.108		

Table A3d. Decomposition of β -convergence, per sector

	1995-2005						1995-2005					
	OECD19			OECD19			EU16			EU16		
	EFFICIENCY EFFECT			STRUCTURAL EFFECT			EFFICIENCY EFFECT			STRUCTURAL EFFECT		
	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2	β	<i>t-stat</i>	R^2
Food and beverages	-0.017	-0.539	0.34	-0.012	-0.730	0.87	-0.021	-0.559	0.31	-0.013	-0.660	0.88
Tobacco	-0.005	-4.273	0.30	0.002	1.500	0.41	-0.001	-0.917	0.34	0.001	1.273	0.35
Textiles	-0.017	-1.663	0.69	0.009	0.861	0.80	-0.018	-1.546	0.58	0.000	-0.098	0.71
Leather and footwear	-0.009	-2.742	0.58	0.006	0.792	0.63	-0.008	-3.391	0.65	0.000	-0.059	0.54
Wood and Cork	-0.009	-0.793	0.41	0.007	1.237	0.59	-0.015	-1.244	0.45	0.010	1.463	0.56
Pulp and paper	0.061	1.043	0.21	0.140	2.396	0.59	0.052	0.749	0.17	0.168	2.429	0.61
Printing, publishing, etc.	-0.054	-1.744	0.61	-0.003	-0.307	0.58	-0.069	-1.898	0.62	-0.001	-0.082	0.59
Chemicals	0.113	1.730	0.54	-0.069	-2.147	0.73	0.102	1.376	0.54	-0.075	-2.024	0.74
Non-Metallic Minerals	-0.074	-1.479	0.63	0.026	1.040	0.67	-0.094	-1.582	0.64	0.038	1.361	0.69
Basic Metals	-0.054	-0.886	0.67	0.047	1.225	0.71	-0.048	-0.656	0.68	0.054	1.226	0.73
Fabricated metal	-0.029	-3.267	0.55	0.007	2.433	0.76	-0.035	-3.427	0.57	0.006	2.065	0.72
Machinery NEC	-0.004	-0.565	0.63	-0.007	-1.850	0.35	-0.008	-1.063	0.66	-0.008	-1.689	0.37
Office machinery, etc.	-0.001	-0.636	0.57	0.000	-0.063	0.26	-0.001	-1.083	0.38	-0.001	-0.800	0.47
Electrical engineering	-0.010	-1.102	0.55	0.012	1.949	0.66	-0.015	-1.571	0.46	0.008	1.262	0.56
Motor vehicles, trailers, etc.	-0.015	-1.686	0.71	0.012	1.657	0.59	-0.021	-2.158	0.73	0.018	2.256	0.64
Other transport equipment	-0.006	-1.189	0.20	0.000	0.000	0.38	-0.008	-1.317	0.21	0.002	0.475	0.38
Rubber and plastics	-0.037	-2.290	0.67	0.001	0.106	0.71	-0.046	-2.619	0.72	0.002	0.158	0.69
Medical instruments etc.	-0.016	-2.422	0.28	0.007	2.156	0.65	-0.018	-2.452	0.26	0.007	2.500	0.55
Manufacturing nec; recycling	-0.031	-2.289	0.52	0.014	2.446	0.71	-0.038	-2.464	0.56	0.016	2.358	0.70
MANUFACTURING	-0.212			0.197			-0.312			0.232		

Table A4. Percentage contribution of sectors to the aggregate energy-intensity specialization index Q , per country.

%	1980-2005												1995-2005						
	AUT	BEL	DNK	FIN	FRA	GER	JPN	KOR	NLD ¹	SPA	UK	USA	CZE	HUN	ITA	POL	PRT	SVK	SWE
Food and beverages	4	6	40	0	-33	12	13	13	41	22	9	-11	-8	-9	-4	13	73	-2	18
Tobacco	3	-6	14	-4	-26	-83	-11	-155	-292	-25	-9	10	-16	2	1	7	-87	0	0
Textiles	8	3	4	1	-23	8	19	-80	3	-4	5	-14	1	-13	20	21	-44	-2	1
Leather and footwear	7	7	10	-2	-80	-11	12	-457	-15	-65	-5	-4	-33	-18	-139	46	-48	-23	-38
Wood and Cork	23	9	-6	2	-31	-6	11	29	1	25	0	-7	-3	-3	-14	15	-30	-8	41
Pulp and paper	4	-1	-2	1	42	-11	8	24	16	10	5	-8	-1	0	-2	19	-106	2	83
Printing, publishing, etc.	3	6	9	-100	-5	-7	9	40	18	-14	4	-1	-2	-5	3	13	37	1	55
Chemicals	-3	20	-18	2	-3	-16	-3	42	40	27	-5	2	8	6	10	27	49	1	5
Non-Metallic Minerals	6	-5	2	0	-220	11	12	52	-1	26	17	-5	-11	-6	6	-6	-17	-5	55
Basic Metals	11	13	7	2	-22	-8	-1	80	31	9	2	-2	-17	0	-1	-137	293	-8	-64
Fabricated metal	3	9	2	1	-22	9	7	15	8	29	4	-4	9	-1	21	-19	-3	-19	23
Machinery NEC	2	-6	-2	-4	229	-47	-1	0	63	-20	1	-9	-4	-11	-21	-25	-35	-4	95
Office machinery, etc.	6	2	26	3	-70	-26	1	22	37	-8	12	1	-15	-4	80	-21	34	-5	28
Electrical engineering	-1	9	10	1	31	25	6	66	42	22	8	-11	3	-29	48	2	5	1	50
Motor vehicles, trailers, etc.	12	29	-5	-7	148	77	-4	77	95	26	12	-19	3	-4	62	2	31	0	-444
Other transport equipment	-1	-1	-3	4	-64	4	8	-3	-14	6	2	-2	1	2	3	-1	-1	0	14
Rubber and plastics	8	10	-1	0	17	18	4	72	-5	32	1	-6	-6	-8	9	-23	8	-8	-63
Medical instruments etc.	2	0	7	-5	43	-34	5	24	7	13	3	-1	-5	2	13	-25	-72	-10	-32
Manufacturing nec; recycling	1	-2	6	5	-11	-15	6	38	25	-10	34	-8	-3	0	5	-9	12	-11	73
TOTAL (Manufacturing)	100	100	100	-100	-100	-100	100	-100	100	100	100	-100	-100	-100	100	-100	100	-100	-100

¹ 1987-2005

Table B.1a Average annual growth rates energy intensity by sector for the periods 1980–2005 and 1995–2005

Sector	NACE rev1 code	Austria		Belgium		Czech Republic		Denmark		Finland		France	
		1980	1995	1980	1995	1980	1995	1980	1995	1980	1995	1980	1995
		-	-	-	-	-	-	-	-	-	-	-	-
		2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
FOOD , BEVERAGES AND TOBACCO	15t16	0.8	0.8	-0.5	-3.2	--	-4.8	1.0	0.3	-1.1	0.0	0.7	0.1
Food and beverages	15	0.5	0.9	--	-3.4	--	-4.7	0.9	0.3	-2.4	-3.3	--	--
Tobacco	16	7.5	3.7	--	-7.5	--	-9.5	4.9	0.8	-0.6	1.7	--	--
TEXTILES, LEATHER AND FOOTWEAR	17t19	4.9	1.8	1.4	0.6	--	-2.3	0.8	4.8	-0.8	-1.3	-1.2	-2.4
Textiles	17t18	4.8	1.2	1.2	0.3	--	-0.7	0.5	4.3	-0.8	-1.7	-1.3	-3.7
Leather and footwear	19	5.6	6.0	2.7	6.4	--	-18.5	4.2	13.1	-0.4	0.6	-2.8	4.0
WOOD AND CORK	20	6.1	7.6	0.0	3.0	--	-2.8	-1.9	-3.0	-1.4	-3.6	-4.3	-0.1
PULP, PAPER , PRINTING, PUBLISHING	21t22	-0.3	0.3	0.3	-0.6	--	-5.4	-0.5	0.7	-1.9	-4.1	1.4	-0.9
Pulp and paper	21	-0.9	1.2	--	-4.5	--	-6.6	-2.2	1.1	-2.0	-4.1	3.3	-1.3
Printing, publishing and reproduction	22	0.6	0.1	--	4.1	--	-5.3	-0.5	-0.5	-10.9	-16.8	-0.4	-0.7
CHEMICALS	24	-5.5	-9.1	-1.1	1.9	--	8.4	-3.6	-3.4	-1.1	-0.5	-3.6	-0.7
NON-METALLIC MINERALS	26	1.7	0.0	0.1	-0.5	--	-9.1	-1.4	-0.4	-1.3	-2.6	-3.2	-2.0
BASIC METALS	27	-0.2	2.0	-1.1	-3.0	--	7.3	1.8	5.8	-0.8	-3.3	-10.3	-3.8
MACHINERY	28t32	1.1	1.5	-0.5	-2.2	--	-7.7	-1.5	0.5	-5.9	-13.5	1.3	-5.1
Fabricated metal	28	1.6	2.1	-1.7	-2.7	--	-3.0	-1.4	1.5	-4.7	0.5	4.2	-4.0
Machinery nec	29	1.5	0.9	-1.1	-6.1	--	-8.3	0.2	1.3	0.5	-1.7	-6.9	-6.7
Office, accounting & computing machinery	30	-4.6	-12.1	4.6	7.2	--	-15.5	-2.1	-3.4	-5.8	-8.1	-4.2	-15.3
Electrical engineering	31t32	0.1	1.4	3.0	4.1	--	-9.2	-6.6	-3.8	-10.1	-26.8	3.2	-2.8
TRANSPORT EQUIPMENT	34t35	0.9	-2.6	1.0	0.2	--	-12.5	1.2	6.0	-0.6	-6.9	-1.2	-0.8
Motor vehicles, trailers and semi-trailers	34	0.5	-2.0	--	0.6	--	-15.2	-1.1	-1.4	-0.3	0.1	-2.0	-4.4
Other transport equipment	35	1.2	-4.1	--	-3.6	--	0.5	2.9	11.2	-2.8	-13.7	0.2	6.5
NON-SPECIFIED INDUSTRY	25,33,36t37	1.6	2.4	-1.6	-4.3	--	-10.1	-0.6	0.4	0.9	2.7	-7.4	-6.0
Rubber and plastics	25	1.9	2.3	-2.1	-5.3	--	-14.0	-2.1	-2.2	-0.3	1.4	-10.9	-8.9
Medical, precision & optical instruments	33	0.9	-2.0	-1.4	-7.7	--	-0.5	-1.9	-1.9	1.7	0.2	5.0	-3.2
Manufacturing nec; recycling	36t37	1.9	4.1	-0.2	-1.3	--	-6.3	1.5	3.5	2.3	5.5	5.5	3.1

Table B.1b Average annual growth rates energy intensity by sector for the periods 1980–2005 and 1995–2005.

Sector	NACE rev1 code	Germany		Hungary		Italy		Japan		South Korea		Netherlands	
		1980	1995	1980	1995	1980	1995	1980	1995	1980	1995	1980	1995
		2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
FOOD , BEVERAGES AND TOBACCO	15t16	-1.1	-0.5	--	-1.4	1.4	4.9	2.9	1.3	0.4	1.5	-0.4	-1.0
Food and beverages	15	--	-0.3	--	-1.9	--	--	2.7	0.9	0.4	1.6	-0.3	-1.0
Tobacco	16	--	-4.4	--	10.3	--	--	0.7	1.1	-1.5	1.7	-1.5	-0.9
TEXTILES, LEATHER AND FOOTWEAR	17t19	0.1	-1.4	--	-13.9	2.7	1.5	3.9	4.8	1.5	3.6	-0.1	-2.2
Textiles	17t18	--	-1.4	--	-15.2	2.8	1.5	3.9	5.0	1.4	3.8	-0.3	-2.2
Leather and footwear	19	--	-2.2	--	-7.4	2.5	2.3	6.0	2.6	1.8	1.7	1.3	-2.9
WOOD AND CORK	20	-1.9	-0.3	--	-4.9	2.1	1.9	--	--	1.1	2.0	2.5	-0.4
PULP, PAPER , PRINTING, PUBLISHING	21t22	-1.9	-1.7	--	-8.3	0.2	2.0	0.7	0.0	2.5	4.8	0.3	-0.5
Pulp and paper	21	--	-4.2	--	-4.6	--	-0.1	-0.1	-1.2	0.7	2.6	-0.4	-2.4
Printing, publishing and reproduction	22	--	-0.9	--	-13.0	--	3.6	2.4	2.0	5.2	7.0	0.9	0.2
CHEMICALS	24	-4.4	-5.9	--	3.2	-2.7	-0.4	-5.3	0.3	-0.4	0.9	-1.3	-2.8
NON-METALLIC MINERALS	26	-2.8	-2.5	--	-1.1	-2.5	-0.8	-2.3	-1.4	1.1	3.1	1.0	0.2
BASIC METALS	27	-1.9	-0.1	--	-0.8	--	1.6	-1.5	-0.3	-1.3	1.2	-0.6	-3.0
MACHINERY	28t32	-3.1	-4.5	--	-13.8	--	1.8	-2.7	-4.6	-4.0	-1.8	0.7	0.0
Fabricated metal	28	-2.6	-2.1	--	-10.7	--	-0.8	0.1	0.9	-0.3	4.0	0.9	1.0
Machinery nec	29	-3.5	-5.6	--	-5.6	1.6	3.5	-0.4	-1.7	-0.8	2.7	-0.7	-1.8
Office, accounting & computing machinery	30	-5.6	-12.0	--	-2.1	--	12.2	-7.2	-5.4	-1.4	5.3	-10.3	-2.6
Electrical engineering	31t32	-2.5	-5.5	--	-15.1	--	3.0	-7.9	-8.9	-2.4	0.7	3.4	2.3
TRANSPORT EQUIPMENT	34t35	-2.0	-3.2	--	-13.6	1.5	1.9	-0.9	-1.5	1.6	2.8	-2.0	-4.4
Motor vehicles, trailers and semi-trailers	34	-1.5	-2.2	--	-15.1	--	0.2	-1.4	-1.7	2.0	2.6	-3.8	-2.9
Other transport equipment	35	-5.7	-10.1	--	6.5	--	6.2	2.3	0.0	0.6	3.4	-0.2	-4.9
NON-SPECIFIED INDUSTRY	25,33,36t37	-1.0	-0.5	--	-10.6	--	2.5	1.2	0.7	1.9	3.8	0.4	-0.1
Rubber and plastics	25	-1.8	-0.6	--	-15.7	2.2	1.9	0.6	-0.7	0.9	3.0	-1.5	-0.9
Medical, precision & optical instruments	33	-1.3	-3.0	--	8.9	--	1.8	1.1	2.8	-1.6	4.2	-0.9	-1.1
Manufacturing nec; recycling	36t37	0.5	2.6	--	-5.9	-0.1	3.8	1.6	0.3	1.7	4.0	4.4	2.6

Sector	NACE rev1 code	Poland	Portugal	Spain	Slovakia	Sweden	UK
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Table B.1c Average annual growth rates energy intensity by sector for the periods 1980–2005 and 1995–2005

		1980	1995	1980	1995	1980	1995	1980	1995	1980	1995	1980	1995
		2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
FOOD , BEVERAGES AND TOBACCO	15t16	--	1.3	--	2.3	-0.1	5.6	--	-3.4	--	-1.4	1.0	-1.2
Food and beverages	15	--	1.0	--	2.6	-0.3	5.6	--	-4.3	--	-1.4	1.0	-1.6
Tobacco	16	--	12.7	--	-8.5	1.3	1.9	--	9.7	--	--	0.3	11.4
TEXTILES, LEATHER AND FOOTWEAR	17t19	--	3.5	-2.7	0.1	-1.2	2.7	--	-6.1	--	-1.3	0.4	0.1
Textiles	17t18	--	3.6	-3.0	-0.7	-1.3	2.6	--	-4.8	--	-0.5	0.4	0.3
Leather and footwear	19	--	2.3	0.8	3.8	-0.2	2.8	--	-13.1	--	-6.9	-2.1	-7.6
WOOD AND CORK	20	--	3.4	-5.6	-0.8	0.1	1.6	--	-11.6	--	1.0	--	2.2
PULP, PAPER , PRINTING, PUBLISHING	21t22	--	9.6	-1.4	1.8	-2.3	2.8	--	-0.6	--	0.2	0.6	3.2
Pulp and paper	21	--	9.1	--	-0.9	-1.1	5.0	--	-1.9	--	-1.2	0.6	6.3
Printing, publishing and reproduction	22	--	8.3	--	0.6	-2.4	1.1	--	2.8	--	2.7	3.3	2.7
CHEMICALS	24	--	5.7	2.3	3.7	0.0	2.3	--	-0.8	--	-6.2	-5.0	-6.1
NON-METALLIC MINERALS	26	--	-12.7	--	6.4	-1.8	4.8	--	-7.6	--	-5.3	-0.8	-0.9
BASIC METALS	27	--	-0.7	2.1	-2.0	-0.3	5.6	--	-11.1	--	-1.2	-0.2	6.5
MACHINERY	28t32	--	-8.0	-1.7	-2.8	-1.8	3.0	--	-9.6	--	-16.4	0.2	-0.3
Fabricated metal	28	--	-9.2	0.9	-4.0	-1.2	3.8	--	-10.4	--	3.1	-0.7	-0.7
Machinery nec	29	--	-7.0	0.0	3.2	-3.1	-0.3	--	-9.4	--	-4.4	1.7	0.0
Office, accounting & computing machinery	30	--	4.1	-8.4	-6.9	-2.0	1.4	--	1.0	--	-0.5	-5.0	-7.0
Electrical engineering	31t32	--	-6.4	-6.9	-3.5	-1.4	5.8	--	-9.0	--	-37.1	-0.4	0.0
TRANSPORT EQUIPMENT	34t35	--	-5.7	--	-10.9	1.2	3.6	--	-17.4	--	-5.5	-1.0	-0.9
Motor vehicles, trailers and semi-trailers	34	--	-10.8	--	-10.7	0.8	3.7	--	-21.0	--	-6.6	-1.5	1.6
Other transport equipment	35	--	-0.6	--	-9.6	0.9	3.3	--	-4.3	--	-0.9	-0.1	-4.2
NON-SPECIFIED INDUSTRY	25,33,36t37	--	-2.0	-3.4	-0.4	-0.1	2.9	--	-13.1	--	3.6	2.2	1.1
Rubber and plastics	25	--	2.7	-2.5	3.1	-0.2	2.9	--	-10.2	--	3.4	1.1	3.4
Medical, precision & optical instruments	33	--	-3.4	-6.1	-1.2	-1.7	2.9	--	-0.7	--	-2.4	-3.4	-5.0
Manufacturing nec; recycling	36t37	--	-5.0	-4.8	-0.2	-0.7	2.4	--	-20.4	--	4.9	7.1	0.9

Table B.2a Percentage contribution of the efficiency effect (EFF) and the structural effect (STR) by sector to the average annual growth rate of Manufacturing energy intensity per country, for the period 1980–2005.

1980–2005	Austria			Belgium			Denmark			Finland			France				
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect		
Food and beverages	17.6	-4.9	12.7	}	-21.6	-33.4	-55.0	16.1	-23.4	-7.3	-1.5	-0.9	-2.4	}	8.6	16.4	25.1
Tobacco	2.0	-1.4	0.6					1.0	-0.8	0.2	0.0	-0.1	-0.1				
Textiles	39.3	-38.6	0.7	9.5	-12.6	-3.0	0.6	-3.7	-3.1	-0.2	-2.0	-2.2	-3.6	-2.6	-6.2		
Leather and footwear	6.1	-5.8	0.4	1.1	-2.8	-1.8	0.5	-1.0	-0.5	0.0	-0.3	-0.3	-1.4	-3.1	-4.5		
Wood and Cork	120.2	-30.4	89.9	-0.4	13.4	13.1	-4.9	2.6	-2.2	-1.0	-1.6	-2.5	-17.5	18.4	0.9		
Pulp and paper	-76.9	147.3	70.4	}	5.4	5.3	10.7	-3.8	0.9	-2.9	-25.1	-13.1	-38.3	17.6	-2.2	15.4	
Printing, publishing, etc.	11.6	11.9	23.5					-1.3	-3.9	-5.2	-34.8	-9.7	-44.5	-1.4	3.6	2.2	
Chemicals	-588.5	208.4	-380.0	-160.6	463.1	302.5	-19.1	22.2	3.1	-1.4	-0.7	-2.1	-96.0	95.6	-0.3		
Non-Metallic Minerals	108.6	-113.4	-4.8	7.3	-60.0	-52.7	-31.3	-42.3	-73.6	-1.1	-2.0	-3.1	-68.3	13.4	-54.9		
Basic Metals	-17.3	1.3	-16.0	-126.5	-154.4	-280.9	3.2	-1.6	1.6	-1.3	1.4	0.0	-274.2	221.0	-53.2		
Fabricated metal	19.4	-0.4	19.0	-10.3	-3.1	-13.3	-4.7	2.8	-1.9	-1.0	0.0	-0.9	19.7	-29.4	-9.7		
Machinery NEC	15.0	5.3	20.3	-3.1	-4.0	-7.1	0.7	-2.2	-1.5	0.1	-0.3	-0.3	-23.5	13.2	-10.3		
Office machinery, etc.	-0.2	0.6	0.3	0.1	0.0	0.0	-0.1	0.1	-0.1	0.0	0.0	0.0	-1.2	-0.5	-1.7		
Electrical engineering	0.6	5.4	6.0	5.4	-2.3	3.1	-12.5	8.0	-4.5	-1.0	1.0	-0.1	4.0	0.7	4.7		
Motor vehicles, trailers, etc.	7.5	26.4	33.9	}	6.0	2.9	8.9	-0.9	-0.7	-1.6	0.0	-0.1	-0.1	-6.7	8.7	2.1	
Other transport equipment	3.2	-2.7	0.6					1.7	-2.5	-0.7	-0.3	-0.6	-0.9	0.4	0.7	1.0	
Rubber and plastics	10.7	1.6	12.3	-26.0	50.9	24.8	-6.2	3.8	-2.4	-0.5	-1.1	-1.6	-97.0	81.3	-15.7		
Medical instruments etc.	0.6	1.7	2.4	-3.0	-1.7	-4.7	-1.1	1.8	0.7	0.2	0.1	0.3	0.7	1.0	1.7		
Manufacturing nec; recycling	10.1	-2.0	8.1	-3.1	-41.6	-44.6	2.8	-0.8	2.1	2.3	-3.2	-0.9	2.7	0.6	3.3		
MANUFACTURING	-310.3	210.3	-100.0	-319.8	219.8	-100.0	-59.3	-40.7	-100.0	-66.9	-33.1	-100.0	-536.9	436.9	-100.0		

Table B.2b Percentage contribution of the efficiency effect (EFF) and the structural effect (STR) by sector to the average annual growth rate of Manufacturing energy intensity per country, for the period 1980–2005.

1980–2005	Germany			Japan			South Korea			Netherlands			Spain			
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	
Food and beverages	}	-3.3	-4.9	-8.3	4.9	-4.2	0.6	1.2	-15.6	-14.3	-24.0	-38.0	-62.0	-3.3	-4.2	-7.5
Tobacco					0.0	-0.2	-0.2	-0.1	-0.7	-0.8	-2.0	0.5	-1.5	0.3	-1.1	-0.8
Textiles	}	0.1	-2.6	-2.5	3.6	-7.0	-3.4	10.5	-67.7	-57.2	-1.5	-17.3	-18.8	-6.5	-18.5	-25.0
Leather and footwear					0.3	-0.3	-0.1	2.4	-15.4	-13.0	0.3	-1.3	-1.0	-0.2	-2.0	-2.2
Wood and Cork		-0.9	-0.2	-1.2	--	--	--	0.5	-3.1	-2.6	4.9	-0.3	4.6	0.3	-3.9	-3.5
Pulp and paper	}	-7.3	-1.3	-8.6	-0.2	-5.2	-5.4	1.0	-3.6	-2.7	-8.2	-14.9	-23.1	-7.4	-3.7	-11.1
Printing, publishing, etc.					2.1	-1.8	0.3	4.4	-3.8	0.6	8.8	-11.4	-2.6	-7.1	6.3	-0.8
Chemicals		-34.1	12.8	-21.3	-26.0	24.4	-1.6	-2.8	3.3	0.5	-235.2	290.7	55.5	0.1	10.5	10.6
Non-Metallic Minerals		-14.0	-4.1	-18.1	-10.8	-10.2	-21.0	6.3	-15.8	-9.5	24.6	-36.4	-11.8	-48.1	28.1	-20.0
Basic Metals		-16.5	-7.7	-24.1	-20.3	-45.9	-66.3	-12.0	0.5	-11.5	-37.0	-13.2	-50.2	-7.1	-36.2	-43.4
Fabricated metal		-2.7	-0.1	-2.8	0.1	-0.9	-0.9	-0.3	-2.4	-2.8	13.3	0.1	13.3	-2.9	1.0	-1.9
Machinery NEC		-3.4	-0.8	-4.2	-0.2	0.2	0.0	-0.4	1.5	1.1	-6.9	4.1	-2.8	-4.5	1.4	-3.1
Office machinery, etc.		-0.2	0.2	0.0	-0.7	0.8	0.1	-0.1	0.3	0.3	-7.5	7.7	0.2	-0.1	0.2	0.1
Electrical engineering		-1.1	0.7	-0.5	-5.7	6.2	0.5	-2.2	7.0	4.7	41.1	-45.1	-4.1	-1.6	1.3	-0.2
Motor vehicles, trailers, etc.		-2.1	1.2	-0.8	-1.1	0.8	-0.3	1.4	3.6	5.0	-8.1	5.3	-2.9	1.4	2.2	3.6
Other transport equipment		-1.2	0.6	-0.6	0.3	-0.3	0.0	0.2	0.6	0.8	-0.4	-1.1	-1.5	0.6	-2.0	-1.4
Rubber and plastics		-7.6	8.4	0.8	2.1	-1.4	0.7	2.0	0.0	1.9	-13.8	5.2	-8.6	-1.3	8.7	7.3
Medical instruments etc.		-1.1	0.3	-0.8	1.0	-1.8	-0.8	-0.1	0.1	0.0	-1.0	2.6	1.6	-0.6	1.3	0.7
Manufacturing nec; recycling		1.3	-8.3	-7.0	2.6	-4.8	-2.2	0.4	-0.9	-0.6	19.1	-3.6	15.4	-1.5	0.1	-1.4
MANUFACTURING		-94.1	-5.9	-100.0	-48.1	-51.9	-100.0	12.1	-112.1	-100.0	-233.6	133.6	-100.0	-89.6	-10.4	-100.0

Table B.2c Percentage contribution of the efficiency effect (Eff) and the structural effect (STR) by sector to the average annual growth rate of Manufacturing energy intensity per country, for the period 1980–2005.

1980–2005	United Kingdom			USA		
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect
Food and beverages	10.3	-1.6	8.7	-7.8	0.1	-7.6
Tobacco	0.0	0.1	0.1	0.3	-0.4	-0.2
Textiles	1.7	-16.5	-14.8	-2.8	-1.9	-4.7
Leather and footwear	-0.5	-1.5	-2.0	0.0	-0.4	-0.4
Wood and Cork	0.0	0.0	0.0	-2.7	-0.9	-3.6
Pulp and paper	2.6	-8.0	-5.4	-13.3	-3.3	-16.6
Printing, publishing, etc.	8.4	1.9	10.3	-1.5	-2.0	-3.5
Chemicals	-143.9	52.5	-91.4	-21.2	-5.1	-26.3
Non-Metallic Minerals	-8.0	-4.1	-12.1	-6.2	-0.9	-7.1
Basic Metals	-2.5	-44.7	-47.2	-12.7	-7.1	-19.8
Fabricated metal	-2.9	1.9	-1.0	-1.2	-0.7	-1.8
Machinery NEC	5.2	-3.9	1.3	-1.0	-1.3	-2.2
Office machinery, etc.	-1.0	1.2	0.2	-0.7	0.5	-0.3
Electrical engineering	-0.6	1.4	0.8	-5.9	4.2	-1.7
Motor vehicles, trailers, etc.	-3.3	-0.1	-3.3	-1.5	0.5	-1.0
Other transport equipment	-0.1	0.7	0.6	-0.3	-0.6	-0.9
Rubber and plastics	13.5	11.7	25.2	-2.0	1.0	-0.9
Medical instruments etc.	-9.5	10.7	1.2	-0.6	-0.2	-0.7
Manufacturing nec; recycling	33.4	-4.8	28.6	-0.8	0.1	-0.7
MANUFACTURING	-97.2	-2.8	-100.0	-81.7	-18.3	-100.0

Table B.3a Percentage contribution of the efficiency effect (EFF) and the structural effect (STR) by sector to the average annual growth rate of Manufacturing energy intensity per country, for the period 1995–2005.

1995–2005	Austria			Belgium			Czech Republic			Denmark			Finland		
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect
Food and beverages	10.7	-16.2	-5.6	-31.1	-8.4	-39.5	-11.4	-13.5	-24.9	15.6	-99.4	-83.8	-0.8	-0.6	-1.5
Tobacco	0.4	-0.1	0.3	-0.1	0.0	-0.1	-0.3	-0.2	-0.5	0.6	-1.9	-1.4	0	0	0
Textiles	3.6	-9.6	-6.1	0.6	-4.4	-3.8	-0.5	-3.7	-4.1	11.4	-13.8	-2.4	-0.1	-0.5	-0.6
Leather and footwear	2.1	-1.4	0.7	0.3	-0.3	0.0	-1.5	-1.3	-2.8	2.8	-3.5	-0.7	0.0	-0.1	-0.1
Wood and Cork	62.2	-11.3	50.9	5.1	3.4	8.5	-1.3	0.2	-1.1	-22.9	12.1	-10.7	-1.1	-0.8	-1.9
Pulp and paper	35.6	-15.0	20.6	-14.3	4.5	-9.8	-8.6	1.7	-7.0	4.5	-2.8	1.7	-30.1	-34.7	-64.9
Printing, publishing, etc.	0.8	10.3	11.1	7.8	-2.8	5.0	-2.1	-0.5	-2.5	-3.2	3.0	-0.1	-11.4	-3.6	-15.0
Chemicals	-288.2	76.5	-211.7	66.2	33.7	99.9	24.2	-9.1	15.1	-55.2	90.9	35.7	-0.4	-2.5	-2.9
Non-Metallic Minerals	1.1	-41.0	-39.9	-5.2	-29.9	-35.1	-34.2	0.5	-33.8	-20.9	-25.4	-46.3	-0.8	-0.6	-1.4
Basic Metals	50.1	-10.2	39.9	-70.3	-31.0	-101.3	36.3	-54.5	-18.2	34.5	-30.1	4.4	-3.9	-1.2	-5.0
Fabricated metal	9.2	-0.8	8.5	-3.0	0.8	-2.1	-2.3	-2.2	-4.5	13.7	-3.1	10.6	0.0	-0.1	-0.1
Machinery NEC	3.4	2.2	5.6	-3.4	0.5	-2.9	-8.1	-1.3	-9.4	14.0	-19.5	-5.5	-0.1	-0.4	-0.5
Office machinery, etc.	-0.3	0.5	0.2	0.0	0.0	0.0	-0.4	0.5	0.1	-0.5	0.3	-0.3	-0.1	-0.1	-0.1
Electrical engineering	3.9	-6.0	-2.0	1.6	0.2	1.8	-4.9	4.9	0.0	-16.1	16.9	0.8	-2.7	1.4	-1.3
Motor vehicles, trailers, etc.	-12.4	28.0	15.5	0.7	0.8	1.6	-9.5	8.1	-1.4	-2.6	1.3	-1.3	0.0	0.0	0.0
Other transport equipment	-3.2	5.6	2.4	-0.4	0.2	-0.2	0.1	-1.4	-1.3	20.1	-24.2	-4.1	-1.0	-0.7	-1.7
Rubber and plastics	5.0	-0.6	4.4	-21.4	9.6	-11.8	-7.5	6.9	-0.5	-19.4	13.3	-6.1	1.2	-3.9	-2.7
Medical instruments etc.	-0.7	0.9	0.2	-3.9	0.9	-3.0	0.0	-0.1	-0.1	-3.8	5.1	1.3	0.0	-0.7	-0.7
Manufacturing nec; recycling	7.8	-2.7	5.0	-3.4	-3.7	-7.2	-2.0	-1.0	-3.1	21.9	-13.6	8.2	2.4	-2.0	0.4
MANUFACTURING	-108.9	8.9	-100.0	-74.1	-25.9	-100.0	-34.2	-65.8	-100.0	-5.7	-94.3	-100.0	-49.0	-51.0	-100.0

Table B.3b Percentage contribution of the efficiency effect (Eff) and the structural effect (STR) by sector to the average annual growth rate of Manufacturing energy intensity per country, for the period 1995-2005.

1995–2005	France			Germany			Hungary			Italy			Japan				
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect		
Food and beverages	}	0.5	-6.0	-5.5	-0.9	-4.2	-5.1	-4.7	-27.3	-32.0	}	47.3	-10.2	37.1	2.3	-5.3	-3.0
Tobacco					-0.3	-0.1	-0.4	0.1	-0.1	0.0					0.0	-0.2	-0.2
Textiles	-2.3	-2.1	-4.4	-0.7	-2.0	-2.7	-6.4	-4.2	-10.6	12.0	-29.7	-17.8	5.3	-13.2	-7.9		
Leather and footwear	0.2	-0.6	-0.4	-0.1	-0.3	-0.4	-0.6	-1.2	-1.8	2.2	-3.0	-0.9	0.2	-0.6	-0.4		
Wood and Cork	-0.1	1.6	1.5	-0.1	-0.9	-1.1	-1.1	-0.7	-1.8	2.2	0.6	2.8	0.0	0.0	0.0		
Pulp and paper	-2.5	-2.3	-4.8	-10.2	3.6	-6.6	-2.1	-0.6	-2.7	-0.6	9.8	9.2	-4.3	-9.1	-13.4		
Printing, publishing, etc.	-0.6	-1.6	-2.2	-0.9	-2.5	-3.4	-2.8	0.2	-2.5	5.4	-1.7	3.7	2.4	-4.2	-1.8		
Chemicals	-4.8	-9.6	-14.4	-43.2	11.7	-31.5	7.0	-21.0	-14.0	-6.9	4.4	-2.5	1.9	-4.1	-2.3		
Non-Metallic Minerals	-7.7	-4.7	-12.4	-11.0	-10.4	-21.5	-2.4	-6.1	-8.5	-22.8	37.9	15.1	-5.4	-12.0	-17.5		
Basic Metals	-23.8	-18.7	-42.5	-0.6	-11.9	-12.5	-2.1	-13.2	-15.3	39.2	-46.4	-7.2	-3.3	-27.8	-31.1		
Fabricated metal	-4.2	-1.3	-5.4	-1.8	-0.1	-2.0	-4.5	0.0	-4.5	-3.8	10.2	6.5	0.7	-2.4	-1.7		
Machinery NEC	-4.3	1.0	-3.3	-4.5	-0.7	-5.2	-2.2	0.5	-1.7	20.5	2.1	22.6	-1.1	0.6	-0.6		
Office machinery, etc.	-1.3	-0.4	-1.6	-0.8	0.3	-0.5	0.0	0.3	0.3	2.9	-2.2	0.7	-0.9	0.5	-0.4		
Electrical engineering	-1.4	0.1	-1.3	-2.9	1.0	-1.8	-2.7	2.4	-0.3	10.9	1.6	12.5	-9.8	7.1	-2.7		
Motor vehicles, trailers, etc.	-3.5	2.9	-0.6	-3.4	1.3	-2.1	-6.4	4.2	-2.3	0.1	-1.3	-1.2	-1.6	1.3	-0.3		
Other transport equipment	2.2	-1.9	0.3	-1.8	1.5	-0.3	0.2	0.1	0.3	1.9	-0.9	1.1	0.0	0.1	0.1		
Rubber and plastics	-15.0	11.8	-3.2	-2.9	4.3	1.4	-2.7	0.7	-2.1	8.2	2.9	11.1	-3.5	-3.7	-7.2		
Medical instruments etc.	-0.3	0.4	0.1	-2.5	1.6	-0.9	0.1	-0.1	0.1	0.9	0.6	1.5	3.4	-6.9	-3.6		
Manufacturing nec; recycling	0.6	-0.4	0.3	5.5	-9.0	-3.5	-0.3	-0.2	-0.5	6.4	-0.6	5.9	0.6	-6.7	-6.1		
MANUFACTURING	-68.3	-31.7	-100.0	-83.1	-16.9	-100.0	-33.6	-66.4	-100.0	126.0	-26.0	100.0	-13.2	-86.8	-100.0		

Table B.3c Percentage contribution of the efficiency effect (EFF) and the structural effect (STR) by sector to the average annual growth rate of Manufacturing energy intensity per country, for the period 1995-2005.

1995–2005	South Korea			Netherlands			Poland			Portugal			Slovakia		
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect
Food and beverages	5.3	-21.1	-15.8	-13.2	-15.6	-28.8	3.1	-3.0	0.1	14.0	-4.2	9.8	-2.5	-1.1	-3.7
Tobacco	0.1	-0.4	-0.3	-0.2	-0.3	-0.5	0.4	-0.1	0.3	-0.7	0.4	-0.3	0.0	-0.1	-0.1
Textiles	24.6	-53.4	-28.9	-1.9	-3.1	-5.1	1.8	-4.0	-2.2	-3.5	-12.4	-15.9	-1.0	-1.3	-2.3
Leather and footwear	2.2	-16.7	-14.5	-0.1	-0.2	-0.4	0.2	-1.0	-0.8	2.4	-3.5	-1.0	-0.7	-0.2	-0.9
Wood and Cork	1.1	-2.7	-1.7	-0.2	-0.7	-0.9	3.2	0.0	3.2	-1.2	3.4	2.2	-1.7	0.6	-1.1
Pulp and paper	7.1	-18.3	-11.2	-9.3	1.4	-8.0	10.4	-3.8	6.6	-8.1	13.8	5.7	-2.1	-2.7	-4.8
Printing, publishing, etc.	16.6	-27.0	-10.4	0.4	-3.6	-3.2	3.0	-1.8	1.2	2.9	-15.1	-12.2	0.4	-0.6	-0.3
Chemicals	11.9	-9.8	2.1	-92.3	74.1	-18.2	30.1	-19.8	10.4	21.8	-4.1	17.8	-1.4	-15.1	-16.5
Non-Metallic Minerals	33.1	-61.0	-27.9	1.0	-4.4	-3.4	-64.4	42.9	-21.4	97.9	9.4	107.3	-11.1	0.4	-10.7
Basic Metals	20.3	-41.8	-21.5	-32.5	8.4	-24.1	-5.8	-72.2	-78.1	-6.2	-5.7	-12.0	-51.7	3.1	-48.6
Fabricated metal	8.5	-13.5	-4.9	2.7	-2.6	0.1	-5.8	3.0	-2.8	-4.4	1.6	-2.8	-1.6	0.5	-1.1
Machinery NEC	3.4	-1.9	1.4	-3.0	2.2	-0.8	-5.1	-1.2	-6.3	1.4	0.5	1.8	-1.8	0.0	-1.8
Office machinery, etc.	0.7	0.3	1.0	-0.4	-0.3	-0.7	0.0	0.0	0.0	-0.1	0.1	0.0	0.0	0.0	0.0
Electrical engineering	1.4	19.3	20.8	5.2	-10.0	-4.7	-2.2	0.9	-1.3	-1.3	1.7	0.4	-0.9	0.5	-0.4
Motor vehicles, trailers, etc.	7.0	-1.5	5.5	-1.0	1.0	0.0	-7.0	1.9	-5.1	-5.8	7.2	1.4	-4.1	2.1	-2.0
Other transport equipment	2.7	0.4	3.1	-2.1	-0.3	-2.4	-0.2	-2.6	-2.9	-3.3	0.3	-3.0	-0.4	-1.0	-1.4
Rubber and plastics	13.9	-10.3	3.7	-1.5	-0.2	-1.7	1.3	0.9	2.2	1.5	1.1	2.6	-4.0	1.2	-2.7
Medical instruments etc.	0.5	-0.3	0.2	-0.2	0.6	0.3	-0.2	0.0	-0.2	-0.1	0.2	0.1	0.0	0.0	0.0
Manufacturing nec; recycling	1.5	-2.2	-0.8	2.4	-0.1	2.3	-2.4	-0.5	-2.9	-0.2	-1.8	-1.9	-3.0	1.3	-1.7
MANUFACTURING	161.8	-261.8	-100.0	-146.2	46.2	-100.0	-39.6	-60.4	-100.0	107.2	-7.2	100.0	-87.6	-12.4	-100.0

Table B.3d Percentage contribution of the efficiency effect (EFF) and the structural effect (STR) by sector to the average annual growth rate of Manufacturing energy intensity per country, for the period 1995-2005.

1995-2005	Spain			Sweden			United Kingdom			USA		
	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect	EFF Effect	STR Effect	TOT Effect
Food and beverages	14.3	-4.9	9.4	-0.7	-4.7	-5.4	-19.5	9.4	-10.1	-4.7	-1.8	-6.5
Tobacco	0.1	-0.1	-0.1	--	--	--	1.3	-0.5	0.8	0.3	-0.5	-0.2
Textiles	2.3	-3.2	-0.8	0.0	-0.7	-0.8	1.1	-22.8	-21.7	-2.3	-2.3	-4.6
Leather and footwear	0.6	-1.0	-0.4	-0.1	-0.1	-0.1	-1.7	-2.3	-4.0	-0.1	-0.2	-0.2
Wood and Cork	1.3	-0.3	1.0	0.5	-2.6	-2.1	--	--	--	-1.0	-1.9	-2.9
Pulp and paper	6.9	-0.5	6.4	-7.0	-42.8	-49.8	21.2	-15.7	5.5	-18.4	-2.7	-21.1
Printing, publishing, etc.	0.9	1.8	2.6	0.9	-4.1	-3.2	9.9	-0.1	9.8	-1.7	-2.6	-4.3
Chemicals	10.6	-3.1	7.5	-6.7	-2.7	-9.4	-153.9	26.5	-127.3	-25.2	-9.6	-34.8
Non-Metallic Minerals	28.7	7.4	36.0	-3.2	-4.7	-7.9	-7.3	5.5	-1.8	-3.1	-0.7	-3.8
Basic Metals	24.5	-3.7	20.8	-2.0	-11.2	-13.3	58.3	-49.4	8.9	-8.8	-2.5	-11.3
Fabricated metal	2.1	0.9	3.0	0.4	-1.0	-0.7	-2.9	7.6	4.7	-0.9	-0.7	-1.6
Machinery NEC	-0.1	0.6	0.6	-0.6	-0.9	-1.4	0.1	-1.9	-1.8	-1.0	-0.8	-1.8
Office machinery, etc.	0.0	-0.2	-0.1	0.0	0.0	0.0	-1.9	1.2	-0.7	-0.7	0.3	-0.3
Electrical engineering	1.7	-0.3	1.4	-1.4	0.9	-0.5	0.0	-2.3	-2.3	-5.3	3.4	-1.9
Motor vehicles, trailers, etc.	2.2	-0.1	2.1	-1.6	-0.2	-1.8	2.6	0.3	2.9	-2.2	0.8	-1.5
Other transport equipment	0.5	0.1	0.6	-0.1	-0.5	-0.6	-6.0	5.3	-0.7	-0.2	-0.2	-0.4
Rubber and plastics	5.2	2.4	7.6	0.7	-1.6	-0.9	48.6	-17.9	30.7	-1.4	-0.3	-1.7
Medical instruments etc.	0.4	0.0	0.3	-0.2	-0.5	-0.7	-16.4	11.7	-4.7	-0.3	-0.3	-0.5
Manufacturing nec; recycling	1.4	0.6	2.0	2.7	-4.1	-1.5	8.3	3.6	11.9	-0.5	0.0	-0.5
MANUFACTURING	103.4	-3.4	100.0	-18.3	-81.7	-100.0	-58.3	-41.7	-100.0	-77.5	-22.5	-100.0