

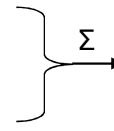
USE (U)	farms	mines	food manuf.	other manuf.	services
cattle	10	0	80	10	0
iron ore	0	0	0	100	0
milk	10	5	100	0	5
cheese	0	5	0	0	5
fuel	100	200	10	50	50
steel	0	5	0	145	0
cars	10	5	5	5	10
advertising	5	15	20	40	20

Final Demand
0
0
60
200
600
0
165
0

checking commodity
make = use+fd

0
0
0
0
0
0
0
0

MAKE (V)	cattle	iron ore	milk	cheese	fuel	steel	cars	advertising
farms	100	0	100	10	0	0	0	0
mines	0	100	0	0	1000	0	0	0
food manuf.	0	0	80	200	0	0	0	0
other manuf.	0	0	0	0	10	150	200	0
services	0	0	0	0	0	0	0	100



g
210
1100
280
360
100

q	cattle	iron ore	milk	cheese	fuel	steel	cars	advertising
	100	100	180	210	1010	150	200	100

Σ

totals

g'	210	1100	280	360	100
----	-----	------	-----	-----	-----

B (U/g)	farms	mines	food manuf.	other manuf.	services
cattle	0.05	0.00	0.29	0.03	0.00
iron ore	0.00	0.00	0.00	0.28	0.00
milk	0.05	0.00	0.36	0.00	0.05
cheese	0.00	0.00	0.00	0.00	0.05
fuel	0.48	0.18	0.04	0.14	0.50
steel	0.00	0.00	0.00	0.40	0.00
cars	0.05	0.00	0.02	0.01	0.10
advertising	0.02	0.01	0.07	0.11	0.20
Σ	0.6	0.2	0.8	0.97	0.9

D (V/q)	cattle	iron ore	milk	cheese	fuel	steel	cars	advertising
farms	1.00	0.00	0.56	0.05	0.00	0.00	0.00	0.00
mines	0.00	1.00	0.00	0.00	0.99	0.00	0.00	0.00
food manuf.	0.00	0.00	0.44	0.95	0.00	0.00	0.00	0.00
other manuf.	0.00	0.00	0.00	0.00	0.01	1.00	1.00	0.00
services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Σ	1	1	1	1	1	1	1	1

DB	farms	mines	food manuf.	other manuf.	services
farms	0.07	0.00	0.48	0.03	0.03
mines	0.47	0.18	0.04	0.42	0.50
food manuf.	0.02	0.01	0.16	0.00	0.07
other manuf.	0.05	0.01	0.02	0.42	0.10
services	0.02	0.01	0.07	0.11	0.20

I	farms	mines	food manu	other man	services
farms	1	0	0	0	0
mines	0	1	0	0	0
food manuf.	0	0	1	0	0
other manuf.	0	0	0	1	0
services	0	0	0	0	1

(I-DB)	farms	mines	food manuf.	other manuf.	services
farms	0.93	0.00	-0.48	-0.03	-0.03
mines	-0.47	0.82	-0.04	-0.42	-0.50
food manuf.	-0.02	-0.01	0.84	0.00	-0.07
other manuf.	-0.05	-0.01	-0.02	0.58	-0.10
services	-0.02	-0.01	-0.07	-0.11	0.80

De	output to final demand
	42.86
	594.06
	217.14
	170.94
	0.00

(I-DB) ⁻¹	farms	mines	food manuf.	other manuf.	services
farms	1.11	0.01	0.65	0.08	0.12
mines	0.74	1.26	0.59	1.13	1.01
food manuf.	0.04	0.01	1.22	0.03	0.12
other manuf.	0.13	0.03	0.14	1.80	0.27
services	0.07	0.03	0.16	0.27	1.32

g calc	g=(I-DB) ⁻¹ De	real g	g
	210		210
	1100		1100
	280		280
	360		360
	100		100

meaning? dollars of output from industry at row to deliver (to final demand) a dollar of output from industry at column

decomposition of row one of (I-DB)⁻¹ times column one of De (Row 1 of (I-DB)⁻¹ times column of De)

plus 1.11 * 42.86 (\$1.11 of production from farms is required to deliver a dollar of production from farms, so to get 42.86 of final demand we need farms to produce:)

plus 0.01 * 594.06 (\$0.01 of production from farms is required to deliver a dollar of production from mines, so to get 594.06 of final demand we need farms to produce:)

plus 0.65 * 217.14 (\$0.65 of production from farms is required to deliver a dollar of production from food manufacturers, so to get 217.14 of final demand we need farms to produce:)

plus 0.08 * 170.94 (\$0.08 of production from farms is required to deliver a dollar of production from other manufacturers, so to get 170.94 of final demand we need farms to produce:)

plus 0.12 * 0 (\$0.12 of production from farms is required to deliver a dollar of production from services, so to get 0.00 to final demand we need farms to produce:)

47.51138
7.0069
141.1847
14.29702
0
SUM 210

So, to deliver all of final demand, farms must produce 210 dollars of gross output (which is exactly how much they do produce)

Intensity indicators

emissions per unit of output (direct emissions intensity)

α	farms	mines	food manuf	other manuf	services
co2/g	0.5	0.8	0.3	0.4	0.1
alpha inverse	1.218388	1.030774	1.234589	1.698604	1.139405

$(I-DB)^{-1}$	farms	mines	food manuf	other manuf	services
farms	1.11	0.01	0.65	0.08	0.12
mines	0.74	1.26	0.59	1.13	1.01
food manuf	0.04	0.01	1.22	0.03	0.12
other manuf	0.13	0.03	0.14	1.80	0.27
services	0.07	0.03	0.16	0.27	1.32

So, $\alpha \cdot (I-DB)^{-1}$ for row of α times column 1 of $(I-DB)^{-1}$ is...

	0.5 * 1.11 (1.11 dollars of production from farms is required to deliver a dollar of production from farms. Farms emit .05 CO2 per dollar of output,so in terms of emissions this is:)	0.554299
plus	0.8 * 0.74 (0.74 dollars of production from mines is required to deliver a dollar of production from farms. Mines emit .8 CO2 per dollar of output, so in terms of emissions this is:)	0.594947
plus	0.3 * 0.04 (0.04 dollars of production from food manuf. Is required to deliver a dollar of production from farms. Food manuf. Emit .3 CO2 per dollar of output, so in terms of emissions:)	0.011714
plus	0.4 * 0.13 (0.13 dollars of production from other manuf. Is required to deliver a dollar of output from farms. Other manuf. Emit .4 CO2 per dollar of output, so in terms of emissions:)	0.05075
plus	0.1 * 0.01 (0.01 dollars of production from services is required to deliver a dollar of output from farms. Services emit .1 CO2 per dollar of output, so in terms of emissions this is:)	0.006678
	SUM	1.218388

This is the total emissions required (direct plus indirect) from all industries per dollar of output from farms.