3.1 Determinants of Carbon Emissions

Connor Nolan

November 2022

1 Regression Model Information

(1) scope1
(2) scope2
(3) total emissions
(4) energy consumption

Table 1: Determinants of Carbon Emissions: LOG EMISSIONS

	(1)	(2)	(3)	(4)
LOGSIZE	0.107	0.311	0.344	0.0501
	(0.145)	(0.242)	(0.263)	(0.129)
B/M	0.135	0.0162	0.0488	0.177
	(0.111)	(0.228)	(0.318)	(0.128)
ROE	0.191	0.477	0.999	0.0762
	(0.315)	(0.633)	(0.673)	(0.206)
LEVERAGE	0.698	-1.542	-1.760	-0.957
	(1.026)	(1.080)	(1.966)	(0.663)
INVEST/A	2.035	-0.773	0.766	1.838
	(1.919)	(2.879)	(4.486)	(1.400)
LOGPPE	0.408***	0.350	0.866***	0.482***
	(0.115)	(0.208)	(0.264)	(0.114)
SALESGR	-0.143	-0.198	-0.310	-0.185**
	(0.0869)	(0.179)	(0.192)	(0.0749)
EPSGR	0.000738	-0.000458	0.0000936	0.000496
	(0.000514)	(0.000424)	(0.000630)	(0.000333)
_cons	0.970	-2.545	-0.955	3.977*
	(2.655)	(3.279)	(4.923)	(2.134)
Year FE	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes
Observations	437	433	437	435
R2-Adj	0.768	0.657	0.687	0.827

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Determinants of Carbon Emissions: Yearly Change in Emissions

	(1)	(2)	(3)	(4)
LOGSIZE	207900.8	4002.8	2.38718e+10	2341066.2
	(149366.5)	(6990.5)	(4.44726e+11)	(1490453.8)
B/M	-11299.8	-6022.3	-5.77300e+11	-92149.9
	(102470.1)	(6081.2)	(4.30340e+11)	(864764.3)
ROE	-92229.1	-5089.4	4.86898e+11	-1118873.7
	(119513.3)	(15114.6)	(9.19034e+11)	(2309373.0)
LEVERAGE	967345.4	33694.2	2.78246e+12	15263694.7*
	(762860.1)	(29209.5)	(1.79161e+12)	(8135855.5)
INVEST/A	-1493632.9	-168500.5**	-8.15457e+12	-25370818.2*
	(1087808.3)	(76495.7)	(6.08482e+12)	(13383910.1)
LOGPPE	-56722.1	-2199.0	1.74778e+11	-1030110.7
	(52183.3)	(5434.8)	(3.49018e+11)	(981785.7)
SALESGR	-120881.5	9258.2*	6.21911e+11	334254.3
	(112085.1)	(5082.6)	(7.59286e+11)	(1943447.6)
EPSGR	685.9	-33.33	-2.53087e+09	-695.1
	(537.4)	(26.77)	(3.67934e+09)	(10189.8)
_cons	-3477742.1	-54517.9	-5.01130e+12***	-33645575.8*
	(2620307.7)	(66060.8)	(1.41228e+12)	(17191873.9)
Year FE	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes
Observations	367	367	367	366
R2-Adj	0.00103	-0.0464	-0.0835	-0.0603

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Determinants of Carbon Emissions: Emission Intensity

	(1)	(2)	(3)	(4)
LOGSIZE	3156.1	125.0	23288172.3	6858.4
	(2902.8)	(88.99)	(135330466.1)	(6810.0)
B/M	-2360.9	-86.94	163645086.0	-403.4
	(1723.7)	(62.30)	(155907179.4)	(3570.9)
ROE	2576.6	99.23	-350840585.6	-1623.0
	(1820.6)	(120.2)	(290822164.7)	(7879.9)
LEVERAGE	27599.4	689.2	-574733417.5	-3688.7
	(17221.4)	(544.3)	(938519141.4)	(15616.5)
INVEST/A	3341.5	-162.3	2.59032e+09	4406.8
	(18079.5)	(616.5)	(2.23791e+09)	(53495.0)
LOGPPE	-6297.3	-254.8*	-19149203.8	-15889.8
	(4185.3)	(130.8)	(117239764.8)	(9876.5)
SALESGR	744.6	35.57*	-51970422.4	-2641.8
	(724.8)	(18.72)	(78656616.6)	(2356.3)
EPSGR	1.279	-0.0662	-311769.9	16.31
	(3.160)	(0.102)	(408294.6)	(13.83)
_cons	59084.9*	2589.2**	436993291.1	191079.0*
	(30305.5)	(1134.5)	(2.05406e+09)	(99109.9)
Year FE	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes
Observations	437	437	437	435
R2-Adj	0.267	0.340	0.193	0.384

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$