Banks' climate commitments and credit to carbon-intensive industries: new evidence for France.

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Online appendix - not for publication

1 Descriptive statistics: complement

Table A1: GHG emissions, emission intensities and value added by industrial sectors

Variable Names	EI 2010	EI 2016	% GHG 2010	% VA 2010	$\Delta ln(GHG)$	$\Delta ln(EI)$
C19 Manufacture of coke and refi	10.29	5.81	5.39	0.18	-20.55	-57.28
H51 Air transport	3.38	2.92	5.61	0.57	-0.87	-14.48
C24 Manufacture of basic metals	3.25	3.72	5.90	0.62	-8.71	13.49
A01 Crop and animal production,	3.10	3.20	25.59	2.83	0.39	3.32
C23 Manufacture of other non-met	3.06	2.54	6.62	0.74	-16.59	-18.63
E37-E39 Sewerage, waste manageme	2.54	2.06	7.64	1.03	-16.36	-20.73
A03 Fishing and aquaculture	1.88	1.74	0.37	0.07	2.45	-7.47
D Electricity, gas, steam and ai	1.62	0.77	11.83	2.50	-37.56	-74.17
H50 Water transport	1.57	1.81	1.05	0.23	4.23	13.81
C20 Manufacture of chemicals and	1.57	1.08	6.46	1.41	-12.06	-36.83
C17 Manufacture of paper and pap	0.75	0.66	0.83	0.38	2.45	-12.37
B Mining and quarrying	0.62	0.53	0.40	0.22	-32.76	-14.65
H49 Land transport and transport	0.60	0.46	6.54	3.72	-13.30	-27.26
C10-C12 Manufacture of food prod	0.29	0.19	3.00	3.59	-22.04	-41.61
A02 Forestry and logging	0.28	0.19	0.17	0.21	0.82	-39.88
C16 Manufacture of wood and of p	0.22	0.14	0.18	0.28	-38.52	-44.75
C13-C15 Manufacture of textiles,	0.21	0.15	0.30	0.48	-28.89	-35.23
C22 Manufacture of rubber and pl	0.17	0.13	0.49	1.01	-15.44	-26.66
N77 Rental and leasing activitie	0.16	0.15	1.33	2.81	4.32	-6.68
G45 Wholesale and retail trade a	0.10	0.10	0.81	2.69	-2.07	-7.05
C18 Printing and reproduction of	0.09	0.08	0.11	0.40	-29.45	-21.03
C21 Manufacture of basic pharmac	0.09	0.06	0.30	1.14	-40.84	-45.13
I Accommodation and food service	0.08	0.06	1.07	4.58	-7.10	-22.69
F Construction	0.07	0.08	2.23	10.49	5.15	4.94
C27 Manufacture of electrical eq	0.07	0.06	0.15	0.69	-24.33	-21.06
C29 Manufacture of motor vehicle	0.07	0.06	0.29	1.39	-22.06	-14.40
H53 Postal and courier activitie	0.07	0.07	0.16	0.83	-3.54	0.68
C25 Manufacture of fabricated me	0.06	0.05	0.34	1.83	-14.34	-19.26
C28 Manufacture of machinery and	0.06	0.05	0.19	1.09	-16.02	-24.24
G47 Retail trade, except of moto	0.05	0.04	1.09	7.42	-5.49	-16.57
C31 C32 Manufacture of furniture	0.05	0.04	0.09	0.68	-19.01	-25.32
N80-N82 Security and investigati	0.05	0.04	0.48	3.63	-2.29	-18.38
G46 Wholesale trade, except of m	0.04	0.04	1.05	8.28	-1.14	-8.00
C30 Manufacture of other transpo	0.03	0.02	0.11	1.10	-28.75	-64.05
N78 Employment activities	0.03	0.02	0.25	2.56	-17.25	-36.60
N79 Travel agency, tour operator	0.03	0.03	0.02	0.20	-14.19	-22.99
M73 Advertising and market resea	0.03	0.03	0.08	0.86	-6.11	-7.37
M74 M75 Other professional, scie	0.03	0.03	0.05	0.50	8.81	-19.55
M71 Architectural and engineerin	0.03	0.03	0.23	2.52	3.35	-14.67
E36 Water collection, treatment	0.03	0.03	0.03	0.32	7.93	10.55

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... table A1 continued

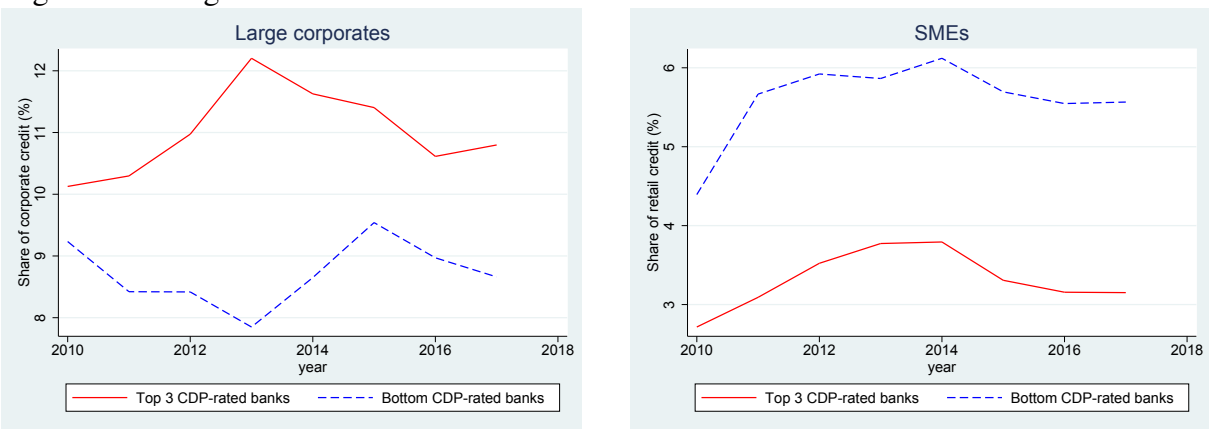
Variable Names	EI 2010	EI 2016	% GHG 2010	% VA 2010	$\Delta ln(GHG)$	$\Delta ln(EI)$
M72 Scientific research and deve	0.02	0.02	0.20	2.89	-10.99	-23.35
C33 Repair and installation of m	0.02	0.02	0.13	1.85	-0.66	-16.10
C26 Manufacture of computer, ele	0.02	0.02	0.07	1.11	-6.97	-9.57
J58 Publishing activities	0.02	0.01	0.06	1.10	-8.33	-24.66
H52 Warehousing and support acti	0.02	0.02	0.15	2.71	-8.57	-14.56
M69 M70 Legal and accounting act	0.02	0.01	0.29	6.38	-3.46	-18.95
J62 J63 Computer programming, co	0.02	0.01	0.18	3.96	-4.89	-30.98
J59 J60 Motion picture, video, t	0.01	0.01	0.04	0.97	-9.95	-24.82
J61 Telecommunications	0.01	0.01	0.08	2.93	0.46	18.10

Table A2: Empirical model: correlation matrix of dependent variables and regressors

	(1)	(2)	(3)	(4)	(5)	(7)	(8)
Credit growth	1.00						
Credit growth SMEs	0.22	1.00					
Credit growth large firms	0.80	-0.03	1.00				
CDP(-1)*EI Top5	-0.04	0.05	-0.04	1.00			
CDP(-1)*EI Top6-10	-0.00	0.01	-0.00	-0.09	1.00		
CDP(-1)	0.06	-0.00	0.07	0.12	0.12	1.00	
PtfShare(-1)	-0.02	0.04	-0.02	-0.05	-0.01	0.01	1.00

2 Preliminary evidence: lending to top 6-10 emission-intensive sectors

Figure A1: Lending shares to top 6-10 emission-intensive industries, corporate vs retail lending: High CDP-rating banks vs others



Note. Note: *Top CDP-rated banks* aggregate the three banking groups with the highest average CDP climate scores over 2010-2016. *Bottom CDP-rated banks* aggregate the two other banking groups in the main sample and a third major banking group with no CDP rating. Top 6-10 GHG-intensive sectors are: [E37-E39] Sewerage, waste management, remediation activities, [A03] Fishing and aquaculture, [D] Electricity, gas, steam and air conditioning supply, [H50] Water transport, [C20] Manufacture of chemicals and chemical products.

3 Robustness

3.1 Variants of main regression table

Table A3: Green banks and credit growth to carbon-intensive sectors: using industries' emission intensity as a continuous variable.

	All			Large firms			SMEs		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CDP*log EI (-1)	-0.201	-0.202	-0.105	-0.366	-0.368	-0.139	0.158	0.160	0.189
	[0.144]	[0.144]	[0.182]	[0.226]	[0.228]	[0.274]	[0.140]	[0.142]	[0.156]
CDP (-1)	0.350			1.070			0.701		
	[0.763]			[1.269]			[0.680]		
log EI (-1)	5.880	5.806		0.944	0.957		8.048*	8.075	
	[4.667]	[4.559]		[6.588]	[6.494]		[4.812]	[4.900]	
Ptf Share (-1)	-0.297**	-0.296**	-0.151	-0.315**	-0.315**	-0.119	-0.106	-0.108	0.015
	[0.123]	[0.122]	[0.092]	[0.151]	[0.151]	[0.131]	[0.092]	[0.091]	[0.096]
Sector FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Time FE	Yes	No	No	Yes	No	No	Yes	No	No
Bank FE	Yes	No	No	Yes	No	No	Yes	No	No
Sec.-Time FE	No	No	Yes	No	No	Yes	No	No	Yes
Bank-Time FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	1637	1637	1636	1621	1621	1620	1635	1635	1634
R-Squared	0.06	0.08	0.33	0.05	0.07	0.33	0.11	0.16	0.39

Note. OLS regressions. Dependent variable: (log) growth rate of credit at the bank-sector level to firms in different size classes as specified in columns. Sample period: 2011-2017. Clustered standard errors (sector*bank) in parentheses unless otherwise stated.

Table A4: Green banks and credit growth to more carbon-intensive sectors: dummies for top 5 and top 6-10 polluting sectors, excl. farming.

	All			Large firms			SMEs		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CDP*EI Top 5 (-1)	-2.391**	-2.340**	-2.144*	-3.272**	-3.202**	-2.842*	1.821*	1.874*	1.470
	[1.024]	[1.010]	[1.241]	[1.427]	[1.466]	[1.638]	[1.032]	[1.086]	[1.043]
CDP*EI Top 6-10 (-1)	0.490	0.461	0.465	1.825	1.830	2.315	-0.881	-0.819	-0.370
	[0.866]	[0.897]	[1.258]	[1.487]	[1.507]	[1.948]	[0.849]	[0.839]	[1.040]
CDP (-1)	0.916			1.995*			0.346		
	[0.666]			[1.137]			[0.579]		
Ptf Share (-1)	-0.364*	-0.359*	-0.179	-0.395*	-0.394*	-0.194	-0.131	-0.128	0.026
	[0.194]	[0.193]	[0.139]	[0.233]	[0.234]	[0.191]	[0.126]	[0.123]	[0.117]
Sector FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Time FE	Yes	No	No	Yes	No	No	Yes	No	No
Bank FE	Yes	No	No	Yes	No	No	Yes	No	No
Sec.-Time FE	No	No	Yes	No	No	Yes	No	No	Yes
Bank-Time FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	1602	1602	1601	1586	1586	1585	1600	1600	1599
R-Squared	0.06	0.08	0.33	0.06	0.07	0.33	0.11	0.16	0.39

Note. OLS regressions. Dependent variable: (log) growth rate of credit at the bank-sector level to firms in different size classes as specified in columns. Sample period: 2011-2017. Clustered standard errors (sector*bank) in parentheses unless otherwise stated.

Table A5: Green banks and credit growth to more carbon-intensive sectors: dummies for top 5 and top 6-10 polluting sectors, excl. coke and oil refineries.

	All			Large firms			SMEs		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CDP*EI Top 5 (-1)	-2.436***	-2.418***	-1.980*	-3.622***	-3.603***	-2.933**	1.010	1.087	1.564**
	[0.618]	[0.611]	[1.024]	[1.087]	[1.102]	[1.473]	[0.879]	[0.909]	[0.738]
CDP*EI Top 6-10 (-1)	0.480	0.443	0.456	1.816	1.827	2.330	-0.883	-0.821	-0.372
	[0.865]	[0.889]	[1.249]	[1.492]	[1.508]	[1.949]	[0.846]	[0.832]	[1.037]
CDP (-1)	0.893			1.826			0.273		
	[0.653]			[1.153]			[0.574]		
Ptf Share (-1)	-0.310**	-0.309**	-0.169*	-0.335**	-0.334**	-0.159	-0.107	-0.107	0.015
	[0.128]	[0.128]	[0.098]	[0.159]	[0.160]	[0.136]	[0.084]	[0.083]	[0.083]
Sector FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Time FE	Yes	No	No	Yes	No	No	Yes	No	No
Bank FE	Yes	No	No	Yes	No	No	Yes	No	No
Sec.-Time FE	No	No	Yes	No	No	Yes	No	No	Yes
Bank-Time FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	1615	1615	1614	1597	1597	1596	1609	1609	1608
R-Squared	0.06	0.08	0.33	0.06	0.07	0.34	0.11	0.17	0.40

Note. OLS regressions. Dependent variable: (log) growth rate of credit at the bank-sector level to firms in different size classes as specified in columns. Sample period: 2011-2017. Clustered standard errors (sector*bank) in parentheses unless otherwise stated.

Table A6: Green banks and credit growth to more carbon-intensive sectors: dummies for top 5 and top 6-10 polluting sectors, including bank-sector fixed effects (within estimates).

	All			Large firms			SMEs		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CDP*EI Top 5 (-1)	-1.713*	-2.832	-4.725*	-2.431*	-3.777	-6.142*	1.275	0.760	2.844
	[1.014]	[1.814]	[2.483]	[1.398]	[2.694]	[3.329]	[0.831]	[1.701]	[2.374]
CDP*EI Top 6-10 (-1)	0.465	0.799	-0.769	2.325	1.923	1.781	-0.370	-1.477	-2.924*
	[1.256]	[1.255]	[1.723]	[1.945]	[1.787]	[2.448]	[1.039]	[1.683]	[1.662]
CDP (-1)		1.017			2.077*			0.497	
		[0.661]			[1.132]			[0.568]	
Ptf Share (-1)	-0.166*	-8.331***	-8.560***	-0.152	-10.159***	-10.788***	0.011	-3.109***	-2.962***
	[0.097]	[1.698]	[1.855]	[0.136]	[2.274]	[2.449]	[0.084]	[0.890]	[1.068]
Time FE	No	Yes	No	No	Yes	No	No	Yes	No
Sec.-Time FE	Yes	No	No	Yes	No	No	Yes	No	No
Bank-Time FE	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes
Bank-Sec. FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	1636	1637	1401	1620	1620	1386	1634	1634	1401
R-Squared	0.33	0.19	0.22	0.34	0.16	0.21	0.39	0.21	0.28

Note. OLS regressions. Dependent variable: (log) growth rate of credit at the bank-sector level to firms in different size classes as specified in columns. Sample period: 2011-2017. Clustered standard errors (sector*bank) in parentheses unless otherwise stated.

Table A7: Green banks and credit growth to more carbon-intensive sectors: dummies for top 5 and top 6-10 polluting sectors, excl. coke and oil refineries (within estimates).

	All			Large firms			SMEs		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CDP*EI Top 5 (-1)	-1.980*	-2.773	-4.492**	-2.933**	-3.835	-6.450*	1.564**	-0.287	0.953
	[1.024]	[1.686]	[1.802]	[1.473]	[3.003]	[3.510]	[0.738]	[1.843]	[2.584]
CDP*EI Top 6-10 (-1)	0.456	0.793	-0.791	2.330	1.926	1.816	-0.372	-1.477	-2.973*
	[1.249]	[1.257]	[1.710]	[1.949]	[1.790]	[2.451]	[1.037]	[1.681]	[1.659]
CDP (-1)		0.951			1.883*			0.483	
		[0.663]			[1.132]			[0.570]	
Ptf Share (-1)	-0.169*	-8.311***	-8.542***	-0.159	-10.116***	-10.721***	0.015	-3.082***	-2.927***
	[0.098]	[1.696]	[1.847]	[0.136]	[2.277]	[2.450]	[0.083]	[0.898]	[1.068]
Time FE	No	Yes	No	No	Yes	No	No	Yes	No
Sec.-Time FE	Yes	No	No	Yes	No	No	Yes	No	No
Bank-Time FE	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes
Bank-Sec. FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	1614	1615	1383	1596	1596	1366	1608	1609	1380
R-Squared	0.33	0.18	0.22	0.34	0.16	0.21	0.40	0.22	0.29

Note. OLS regressions. Dependent variable: (log) growth rate of credit at the bank-sector level to firms in different size classes as specified in columns. Sample period: 2011-2017. Clustered standard errors (sector*bank) in parentheses unless otherwise stated.

3.2 Main regression table using untrimmed credit growth data

Table A8: Green banks and credit growth to carbon-intensive sectors: no trimming of extreme credit groth rates (outliers).

	All			Large firms			SMEs		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CDP*EI Top 5 (-1)	-3.602**	-3.638**	-3.986*	-4.188**	-4.132**	-3.787	0.781	0.701	0.108
	[1.567]	[1.592]	[2.278]	[1.886]	[1.845]	[2.628]	[1.437]	[1.504]	[1.575]
CDP*EI Top 6-10 (-1)	0.033	0.034	0.469	-0.900	-0.913	2.958	-0.958	-0.960	-0.306
	[1.040]	[1.018]	[1.626]	[2.255]	[2.260]	[2.570]	[0.990]	[0.990]	[1.244]
CDP (-1)	1.389			-0.997			-0.198		
	[1.634]			[2.955]			[0.820]		
Ptf Share (-1)	-0.526**	-0.527**	-0.326**	-0.639**	-0.638**	-0.416	-0.197	-0.198	-0.068
	[0.209]	[0.209]	[0.155]	[0.307]	[0.314]	[0.261]	[0.120]	[0.120]	[0.110]
Sector FE	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Time FE	Yes	No	No	Yes	No	No	Yes	No	No
Bank FE	Yes	No	No	Yes	No	No	Yes	No	No
Sec.-Time FE	No	No	Yes	No	No	Yes	No	No	Yes
Bank-Time FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	1710	1710	1710	1693	1693	1693	1710	1710	1710
R-Squared	0.04	0.05	0.32	0.03	0.04	0.30	0.07	0.10	0.35

Note. OLS regressions. Dependent variable: (log) growth rate of credit at the bank-sector level to firms in different size classes as specified in columns. Sample period: 2011-2017. Clustered standard errors (sector*bank) in parentheses unless otherwise stated.

Table A9: Bank-sector-level dataset: descriptive statistics (untrimmed data).

	(1)							
	Nb.Obs.	Mean	Std.Dev.	Min	p25	Median	p75	Max
Credit growth (log, pp)	1710	1.530	34.253	-399.17	-5.66	1.06	8.20	496.24
Credit growth, SMEs (log, pp)	1710	1.600	22.109	-234.57	-6.08	0.62	7.66	230.36
Credit growth, large firms (log, pp)	1693	2.115	52.129	-774.86	-9.43	0.57	12.78	669.09
Top 5 EI	1710	0.101	0.301	0.00	0.00	0.00	0.00	1.00
Top 6-10 EI	1710	0.102	0.303	0.00	0.00	0.00	0.00	1.00
CDP*EI Top 5 (-1)	1710	0.351	1.139	0.00	0.00	0.00	0.00	5.00
CDP*EI Top 6-10 (-1)	1710	0.360	1.153	0.00	0.00	0.00	0.00	5.00
CDP (-1)	1710	3.511	1.382	1.00	2.00	4.00	5.00	5.00
Ptf Share (-1)	1710	2.047	4.148	0.00	0.28	0.63	1.72	40.83
Observations	1710							

Note. Growth rates and ratios are expressed in percentage points. *CDP* stands for the CDP climate score of banks, scaled from 1 (low) to 5 (high). *log EI* is the GHG emission intensity of industries, measured in kilograms of GHG emissions per EUR of value added and expressed in logs. *Ptf share* is the share of industry *s* in the loan portfolio of banking group *b*.

Figure A2: Share of credit to SMEs in total credit to non-financial corporations (selected A-N sectors)

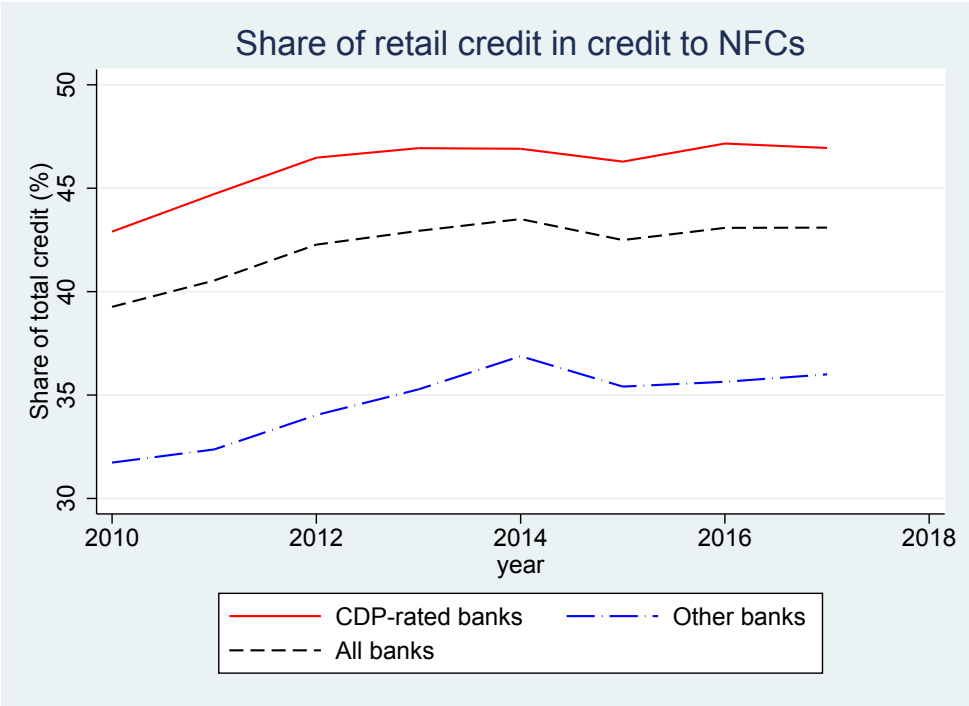
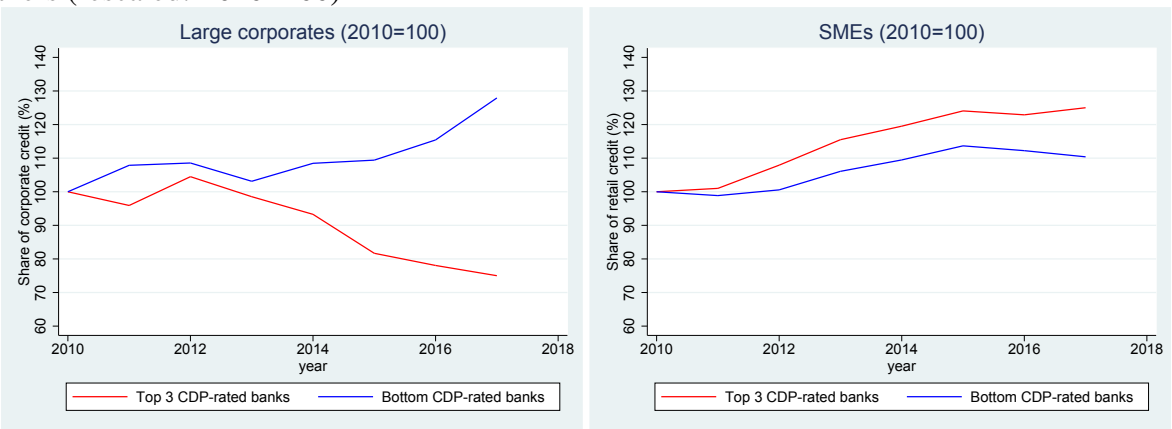


Figure A3: Lending shares to top 5 emission-intensive industries: High CDP-rating banks vs others (rescaled: 2010=100)



Note. Top CDP-rated banks aggregate the three banking groups with the highest average CDP climate scores over 2010-2016. *Bottom CDP-rated banks* aggregate the two other banking groups in the main sample and a third major banking group with no CDP rating. Top 5 GHG-intensive sectors are: [C19] Manufacture of coke and refined petroleum products, [H51] Air transport, [C24] Manufacture of basic metals, [A01] Farming, [C23] Manufacture of other non-metallic mineral products. These 5 sectors: 50% of GHG, 5% of VA in 2010 (in A-N sectors).

Figure A4: GHG emissions and emission intensities in 2010, sector level.

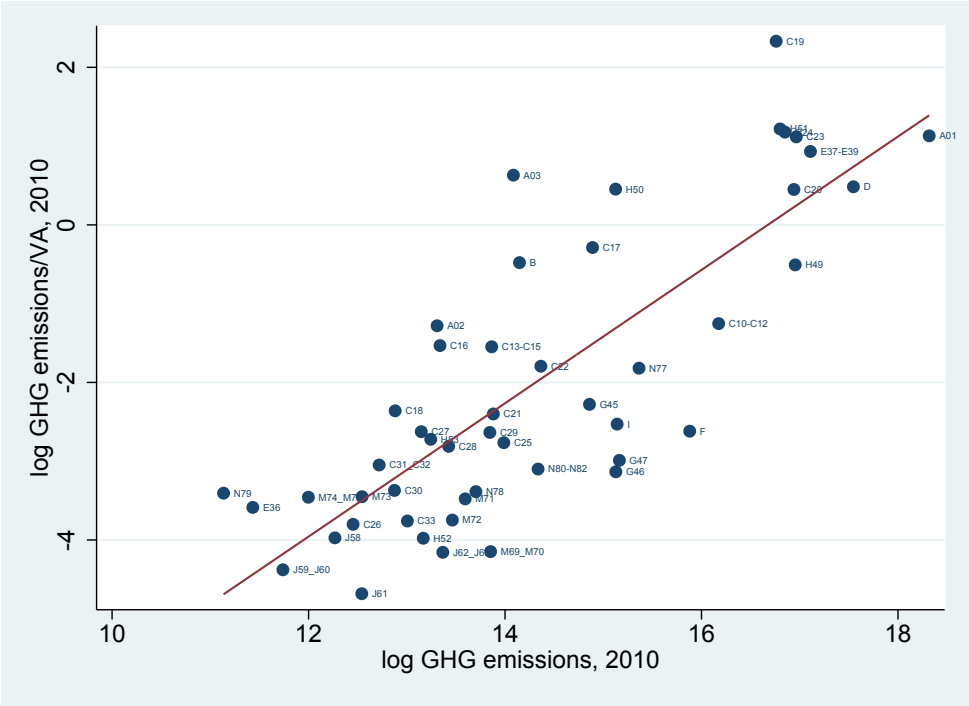
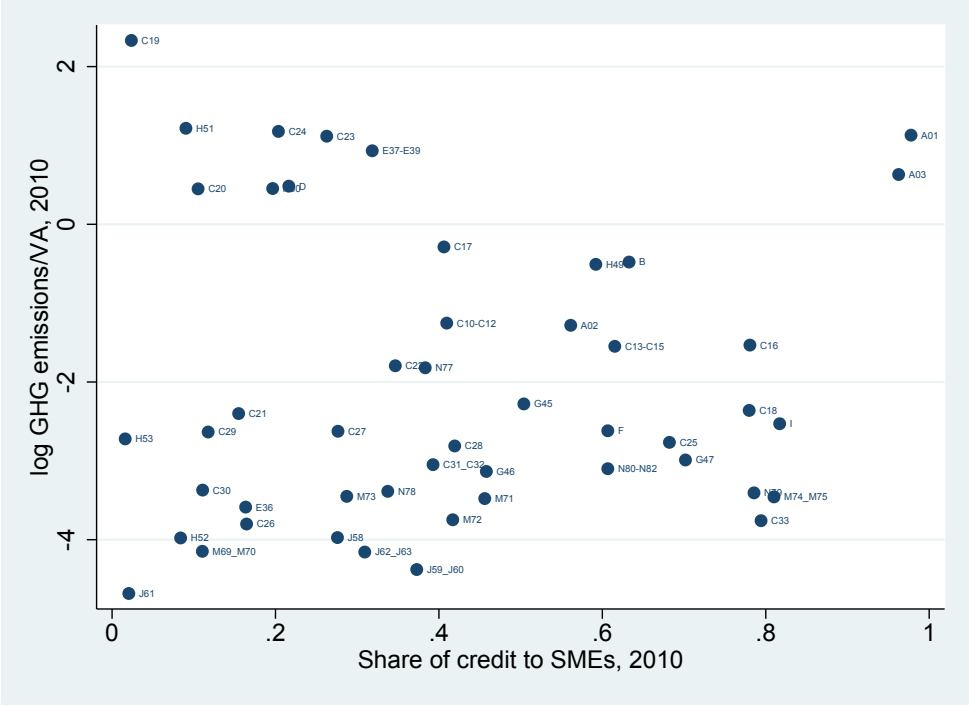



Figure A5: GHG emission intensities and share of bank credit to SMEs, sector level.