"There Is No Planet B", But for Banks "There Are Countries B to Z": Domestic Climate Policy and Cross-Border Lending

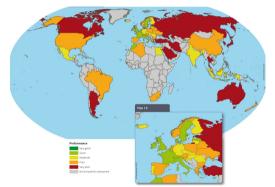
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Climate change: A global challenge

- Climate change is a global challenge whose solution requires global coordination and cooperation
- There is a significant heterogeneity across countries regarding climate policy stringency



The Climate Change Performance Index 2016: Results

Climate policy: A global challenge

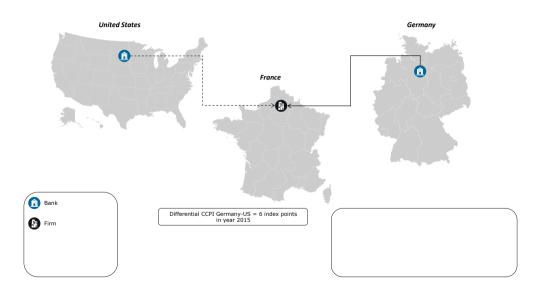
- In the **domestic market**, stringent climate policy may:
 - 1. Increase the demand for funds for innovation and green technologies
 - Bank lending not well-suited to finance innovation (Minetti RF 2011; De Haas and Popov, 2022; Degryse, Roukny and Tielens, 2022)
 - 2. Require a change in firms' business model or production process
 - Might decrease firms' profitability
 - Domestic lending less appealing?

- Little known about effects on bank lending across borders
 - Do banks react to the heterogeneity in national climate policy?
 - Refocusing cross-border lending from 'green' to 'brown' countries and firms?

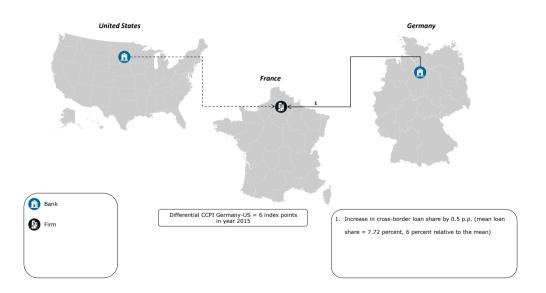
This paper

- Evidence that **banks exploit the lack of global coordination in climate policies** by increasing cross-border lending to 'brown' firms in 'brown' countries
- Use the CCPI Index to measure and compare climate policy stringency globally and estimate its effects on cross-border lending in the syndicated loan market
 - Isolate credit supply by using loan fixed effects
 - Use **change in the green party share** in the parliament as **instrument** to estimate causal effects of domestic climate policy stringency

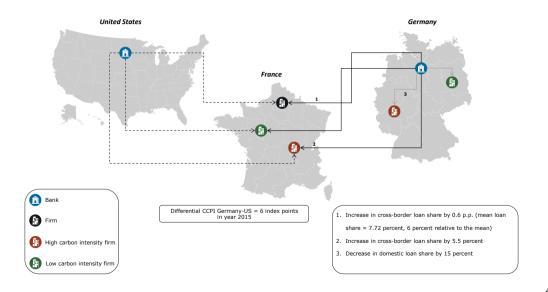
Main results



Main results



Main results



Contribution

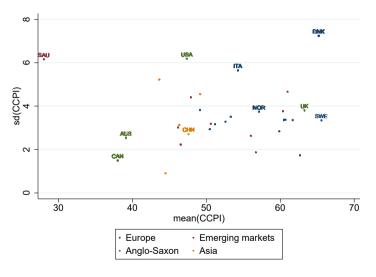
- Cross-border lending as a tool to protect loan portfolios exposure to transition risks (Krueger, Sautner, and Starks, RFS 2020; Seltzer, Starks, and Zhu, 2020, Stroebel and Wurgler, 2021)
 - Firms reallocate their activity to areas with less stringent policy (Bartram, Hou, Kim, JFE 2021; Ben-David, Jang, Kleimeier, and Viehs, 2021)
- Role of banks in promoting sustainable (green) economy and the allocation of the funding
 - Fossil fuel lending (Laeven and Popov, 2022); Bank- vs bond- financing (Delis, De Greiff, and Ongena, 2021)
- Climate policy stringency as an incentive for cross-border lending
 - Geographical and cultural proximity, regulatory arbitrage opportunities (Mian, JF 2006, Lin, Ma, Malatesta, and Xuan JFE 2012, Karolyi and Taboada, JF 2015, Houston, Lin, and Ma, JF 2012, Ongena, Popov, and Udell, JFE 2013, Demyanyk and Loutskina, JFE 2016)

Data and Identification

Climate policy stringency

- We measure climate policy stringency using the Climate Change Performance Index (CCPI)
 - Country-year climate policy index developed by Germanwatch (Burck, Hermwille, and Bals, 2016)
 - It covers 57 countries
 - Four main categories: Greenhouse Gas Emissions (60%), Renewable Energy (10%), Energy Efficiency (10%), and Climate Policy (20%)
- Advantages:
 - An index makes global comparison possible and easy
 - Many different climate policies across countries: CCPI is a comprehensive measure
 - Presented at the UN's annual climate change policy conference; used by policy institutions (e.g. World Bank, Financial Stability Board) and financial industry (e.g. Black Rock, NN Investment)

Variation in Climate Change Performance Index



Cross-border lending

- We use syndicated loans to measure cross-border lending (source: LPC DealScan)
 - A group of lenders come together (syndicate) and provide funds to a single borrower
- Sample: Only (observable) cross-border loan shares
 - Period: 2007-2017
 - Loans provided by a bank to a borrower with different nationality (De Haas and Van Horen, RFS 2013)
 - Firm's location: Headquarters country
 - Bank's location: Country
 - Hand-match loan shares to bank balance sheet data (source: Bankscope)

Identification

$$\text{Lender Share}_{b,k,l,f,t} = \underbrace{\alpha_l}_{\text{Loan FE}} + \beta \text{CCPI}_{\text{lenderc},t} + \gamma \mathbf{X}_{b,l,t-1} + \varepsilon_{b,l,f,t}$$

- 1. Loan demand: Borrowers can adjust their loan demand
 - → We compare lenders within the same loan saturating the model with loan fixed effects
- 2. Variables correlated with climate policy stringency and cross-border lending
 - → We control for variables that are associated to cross-border lending (Houston Lin and Ma 2012 JF; Ongena Popov and Udell 2013 JFE; Karolyi and Taboada 2015 JF)
 - → Green Party share in the parliaments as an IV for climate policy stringency
 - Relevance condition: Green Party's policy mandate
 - Exclusion restriction: Election cycles are orthogonal to economic cycles

Results

Stringent home country climate policy increases lending abroad

				Lender Sha	re		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CCPI _{lender}	0.027	0.043***	0.044***	0.045***	0.042***	0.042***	0.081***
	(0.019)	(800.0)	(0.008)	(800.0)	(800.0)	(0.013)	(0.016)
Controls & Fixed Effects:							
Bank Group Controls	✓	✓	✓	✓	✓	✓	
Borrower FE		✓	✓				
Year FE			✓				
Borrower × Year FE				✓			
Loan FE					✓	✓	✓
Bank Group FE						✓	
$Bank\;Group\;\times\;Year\;FE$							✓
Obs.	12,478	12,478	12,478	12,478	12,478	12,394	12,105
R ²	0.004	0.735	0.736	0.809	0.842	0.863	0.878
Mean(Lender Share)	7.722						

German bank has 0.5pp or 6% on average higher loan share than an American bank in the same loan (+6 index points)

Mitigating concerns about omitted variables

			Lender	Share		
	(1)	(2)	(3)	(4)	(5)	(6)
CCPI _{lender}	0.039***	0.034***	0.032***	0.037***	0.045**	0.058*
	(0.008)	(0.008)	(800.0)	(0.009)	(0.019)	(0.033)
Controls & Fixed Effects:						
Loan FE	✓	✓	✓	✓	✓	✓
Bank Group Controls	✓	✓	✓	✓	✓	✓
Economic Controls	✓	✓	✓	✓	✓	✓
Culture Controls		✓	✓	✓	✓	✓
Bank Competition Controls			✓	✓	✓	✓
Demography Controls				✓	✓	✓
Bank Regulation Controls					✓	✓
Institutions Controls						✓
Obs.	11,530	11,076	11,076	11,076	5,810	3,571
R ²	0.853	0.854	0.854	0.854	0.865	0.872
Mean(Lender Share)	7.722					

Saturating the model with relevant controls does not change the effect

Green Party share as an IV for CCPI

	CCPI _{lender}	Lender Share						
	(1)	(2) (3)		(4)				
Δ Green Party Vote Shr.	1.620***							
	(0.277)							
CCPI _{lender}		0.120***	0.122***	0.121***				
		(0.032)	(0.031)	(0.037)				
Controls & Fixed Effects:								
CONTROLS & FIXED Effects.								
Country Controls			✓	✓				
Bank Controls				./				
Dank Controls				•				
Loan FE	✓	✓	✓	✓				
Obs.	3,216	3,216	3,084	3,191				
R ²	0.340	0.026	0.033	0.062				
1 st Stage Eff. F-stat	34.252	34.252	35.612	29.508				
Mean(Lender Share)	7.716							

- First stage: Weak instrument test by Montiel Olea and Pflueger JBES (2013)
 - Larger than the threshold level of 23.1 for 10 percent worst-case benchmark
 - ► Relaxing the exclusion restriction assumption
 ► Correlation with economic conditions
 ► Alternative IV

Mechanism

Underlying mechanism

- Results show that a more stringent domestic climate policy leads to an increase in cross-border lending
- What is the economic mechanism at a play?
- Our conjecture: Race-to-the-bottom
 - Heterogeneity among countries' climate policy can be viewed as a form of regulatory arbitrage
 - Banks can circumvent climate policies by using cross-border lending (international banking)
 - Banks may want to increase their cross-border lending to protect their loan portfolio from the risks entailed by strict domestic climate policy, leading to a race-to-the-bottom behavior

Cross-border lending as a regulatory arbitrage tool

Lender Share	Intera	action	CC	Pl _{borrower}	< CCPI _{lend}	ler
	(1)	(2)	(3) Yes	(4) No	(5) Yes	(6) No
CCPI _{lender}	0.046*** (0.008)	0.043*** (0.008)	0.061*** (0.015)	0.008 (0.016)	0.060*** (0.016)	0.009 (0.017)
$CCPI_{lender} \times CCPI_{borrower}$	-0.002** (0.001)	-0.002*** (0.001)				
Controls & Fixed Effects:						
Bank Group Controls	✓	✓	✓	✓	✓	✓
$Borrower\timesYear\;FE$	\checkmark		✓	✓		
Loan FE		✓			✓	✓
Obs.	12,478	12,478	7,980	3,860	7,763	3,519
R^2	0.809	0.842	0.812	0.819	0.851	0.841
Mean(Lender Share)	7.722					
Difference			0.052**		0.052**	

Effect decreases in borrower's stringency and it is absent if $\mathsf{CCPI}_{\mathsf{borrower}} > \mathsf{CCPI}_{\mathsf{lender}}$

Does a higher CCPI change the supply of credit domestically?

Lender Share		Carbo	n-intensive f	irms	
	(1)	(2)	(3)	(4)	(5)
Same Country \times High Carbon Intensity Risk \times CCPI _{lender}	-0.317** (0.125)	-0.353*** (0.110)	-0.344*** (0.111)	-0.234** (0.097)	-0.234** (0.096)
Same Country \times High Carbon Intensity Risk	19.355*** (7.041)	19.198*** (6.585)	18.794*** (6.619)	11.999** (5.664)	11.733** (5.672)
${\sf High\ Carbon\ Intensity\ Risk\ \times\ CCPI_{lender}}$	0.085 (0.085)	0.070 (0.068)	0.077 (0.065)	0.104** (0.044)	0.083° (0.043)
Same Country \times CCPI _{lender}	0.066 (0.101)	0.086 (0.125)	0.079 (0.126)	0.011 (0.099)	0.023 (0.107)
Same Country	-1.752 (5.998)	-2.171 (7.491)	-1.784 (7.539)	2.550 (5.939)	1.799 (6.354)
High Carbon Intensity Risk	-4.178 (5.066)	-0.698 (4.887)	-1.201 (4.680)		
CCPI _{lender}	-0.022 (0.067)	0.012 (0.069)	0.002 (0.067)	-0.023 (0.045)	-0.021 (0.044)
Controls & Fixed Effects:					
Bank Group Controls	✓	✓	✓	✓	✓
Borrower FE		✓	✓		
Year FE			✓		
Borrower × Year FE				✓	
Loan FE					✓
Obs. R ² Mean(Lender Share)	2,540 0.073 9.008	2,540 0.540	2,540 0.543	2,540 0.612	2,540 0.701

Climate policy stringency decreases loan supply to domestic borrowers with high carbon risk while increasing loan supply if such borrowers are abroad

Climate policy stringency and corporate profits

	ROE	ROC	Net Margin	Opr. Margin
	(1)	(2)	(3)	(4)
CCPI	-0.007**	-0.004*	-0.007**	-0.004*
	(0.003)	(0.002)	(0.003)	(0.002)
Controls & Fixed Effects:				
Controls	✓	✓	✓	\checkmark
Country FE	✓	✓	✓	\checkmark
Obs.	214	213	216	216
R ²	0.302	0.291	0.337	0.395
Mean(Dep. var.)	0.096	0.079	0.076	0.097

The changes induced by stringent climate policy may hurt the firms' profitability, which in turn can lead the lenders to increase their lending abroad

Climate policy stringency and banks' loan portfolio

	Nonperforming Loans Ratio				Net Pro	fit Ratio		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CCPI _{lender, t-1}	0.032**	0.031*	0.037**	0.013	-4.628***	-1.533***	-1.411***	-1.058**
	(0.014)	(0.017)	(0.016)	(0.022)	(0.762)	(0.515)	(0.479)	(0.461)
$CCPI_{lender,\ t-1} \times Cross\text{-}Border\ Lender$				-0.060**				2.990*
				(0.024)				(1.577)
Controls & Fixed Effects:								
Controls			✓	✓			✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Country FE	✓				✓			
Bank FE		✓	✓	✓		✓	✓	✓
Obs.	24,297	23,434	23,216	23,076	179,856	178,323	177,236	176,286
R ²	0.318	0.943	0.943	0.943	0.156	0.527	0.529	0.529
Mean(Dep. Var.)	4.893				24.786			

Climate policies hurt banks' loan portfolios $[\rightarrow]$ cross-border lending enables banks to circumvent these adverse effects

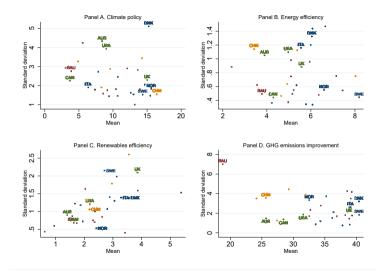
Tentative conclusions

- We investigate whether banks use cross-border lending to react to a change in climate policy stringency in their home country
- Banks exploit uncoordinated national climate policies by refocusing syndicated lending from 'green' to 'brown' countries and firms

Lack of policy harmonization may trigger a race-to-the-bottom behavior and threaten the effectiveness of climate policies

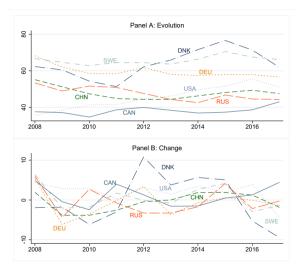
Appendix

Variation in CCPI components





Over time change CCPI





Summary statistics

	Obs.	Mean	Std. Dev.	Min.	Max.
Lender share	12,478	7.722	7.989	0.070	94.210
CCPI _{lender}	12,478	55.689	8.179	22.848	76.620
CCPI _{borrower}	12,478	49.961	8.887	22.848	76.620
Bank-level controls					
log(Total assets)	12,478	28.097	3.088	11.169	36.838
Tier 1 capital ratio	12,478	12.342	7.255	3.700	182.760
log(Customer deposits)	12,478	27.260	3.375	6.639	36.813
Liquidity ratio		49.097	35.340	0.720	395,494
ROAE	12,478 12,478	5.626	11.212	-223.690	46.09
		1.481	0.782	-0.130	9.17
Net interest margin	12,478	1.481	0.782	-0.130	9.17
Country-level controls					
log(GDP per capita)	11,942	10.497	0.709	6.906	11.685
GDP growth	11,942	1.949	2.605	-8.075	14.526
Domestic credit to GDP	11,705	121.545	37.846	25.456	206.671
Unemployment rate	11,942	7.562	3.457	0.489	27.071
Common Language	11,510	0.246	0.431	0	1
log(Distance)	11,510	7.908	1.025	4.798	9.384
Top 5 bank concentration	12,259	73.559	14.744	28.970	100
Population growth	11,943	0.547	0.532	-1.854	5.322
Young workforce	11,942	26.572	4.370	15.767	55.337
Old workforce	11,942	25.379	6.296	4.192	45.125
Capital regulatory index	9,004	6.851	1.778	2	10
Independence of supervisory authority	10,688	2.020	0.813	0	3
Property rights	11,838	77.153	18.426	20	97.1
Legal rights index	5,514	5.820	2.782	1	12
log(Contract enforcing days)	6,618	4.598	0.494	3.258	5.720
Financial liberalization index	11,838	67.711	14.805	20	90
Loan characteristics					
Number of lenders	12,478	19.897	11.435	2	94
Collateral	7,450	0.434	0.496	0	1
Maturity	12,406	51.532	29.789	3	342
log(Loan amount)	12,478	17.352	1.539	6.354	21.563
log(Loan volume)	4.211	19.488	2.180	13.153	25.155
log(Number of loans)	4.211	2.192	1.178	0.693	6.704
	.,		2.270		
Others					
Climate policy _{lender}	12,478	12.053	4.231	0	20
Renewable energy _{lender}	12,478	2.617	1.704	0.023	8.094
Energy efficiencylender	12,478	5.715	1.439	1.017	9.124
GHG emissions improvement _{lender}	12,478	35.304	5.257	9.570	45.564
Δ Green Party Vote Shr.	7,573	0.286	1.410	-4.5	6.667
High Carbon Intensity Risk	1,419	0.725	0.447	0	1
Bank Supervisory Power	11,264	10.106	1.909	6	16
C3-I _{lender}	2,785	54.690	1.779	48.455	58.345
EPI _{lender}	11,554	83.126	7.114	53.580	91.050

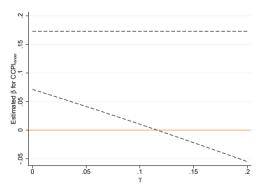
Is the Green Party share correlated with economic conditions?

			Panel A		
	(1)	(2)	(3)	(4)	
	log(GDP) _{pc}	$\Delta \log(GDP)$	Credit to GDP	Unemp. Rate	
	(1)	(2)	(3)	(4)	
Δ Green Party Sharet-1	0.014	0.168	-1.507	0.147	
	(0.024)	(0.294)	(2.876)	(0.378)	
Obs.	1,602	1,602	1,600	1,602	
R ²	0.021	0.019	0.008	0.011	
			Panel B		
	(1)	(2)	(3)	(4)	(5)
		Δ	Green Party Share		
	(1)	(2)	(3)	(4)	(5)
log(GDP) _{pc, t-1}	0.696				0.902
	(1.026)				(0.731)
$\Delta \log(GDP)_{t-1}$		-0.225			-0.255
0(*)		(0.145)			(0.158)
Credit to GDP _{t-1}			0.002		0.006
			(0.005)		(0.006)
Unemp. Rate _{t-1}				-0.021	0.011
				(0.177)	(0.184)
Obs.	1,622	1,622	1,622	1,625	1,621
R ²	0.008	0.093	0.002	0.001	0.123

In line with the exclusion restriction, the economic condition variables have insignificant coefficients in all of these models

Relaxing the exclusion restriction assumption

Lender share $= \beta$ CCPI $+ \gamma$ Δ Green Party share $+ \epsilon$



Plausibly exogenous instrumental variable method (Conley, Hansen, and Rossi, REStat 2012) provides interval estimates for β when γ deviates from being exactly zero

Alternative instrument: Neighboring countries' climate policy stringency

	CCPI _{lender}	Le	re	
	(1)	(2)	(3)	(4)
Neighbor CCPI _{lender}	0.808***			
	(0.078)			
\widehat{CCPI}_{lender}		0.048***	0.031+	0.035**
o o Friender		(0.012)	(0.019)	(0.016)
Controls & Fixed Effects:				
Country Controls			✓	\checkmark
Bank Controls				\checkmark
Loan FE	\checkmark	\checkmark	✓	✓
Obs.	11,070	11,070	10,729	10,729
R^2	0.280	0.010	0.016	0.026
1 st Stage Eff. F-stat	105.900	105.900	51.412	56.716
Mean(Lender Share)	7.716			

Alternative IV: Leave-one-out IV (Angrist, Imbens, Krueger, JAE 1999) or the average value of neighbors' CCPI

Influence of domestic bank regulation

	Panel A							
Lender Share	Ind. of B	ank Supervi	sory Auth.					
	(1)	(2)	(3)					
	Low	Medium	High					
CCPI _{lender}	0.071***	0.028	-0.001					
	(0.024)	(0.018)	(0.022)					
Controls & Fixed Effects:								
Bank Group Controls	✓	✓	✓					
Loan FE	✓	✓	✓					
Obs.	2,353	2,693	2,826					
R ²	0.827	0.867	0.867					
Mean(Lender Share)	7.722							
		Panel B						
Lender Share	Bank	Panel B Supervisory	Power					
Lender Share	Bank (1)		Power (3)					
Lender Share		Supervisory						
Lender Share CCPI _{lender}	(1)	Supervisory (2)	(3)					
	(1) Low	Supervisory (2) Medium	(3) High					
	(1) Low 0.071***	Supervisory (2) Medium 0.043	(3) High 0.027**					
CCPI _{lender}	(1) Low 0.071***	Supervisory (2) Medium 0.043	(3) High 0.027**					
CCPI _{lender} Controls & Fixed Effects:	(1) Low 0.071***	Supervisory (2) Medium 0.043	(3) High 0.027**					
CCPI _{lender} Controls & Fixed Effects: Bank Group Controls Loan FE Obs.	(1) Low 0.071***	Supervisory (2) Medium 0.043	(3) High 0.027**					
CCPI _{lender} Controls & Fixed Effects: Bank Group Controls Loan FE	(1) Low 0.071*** (0.021)	Supervisory (2) Medium 0.043 (0.069)	(3) High 0.027** (0.011)					

A weak supervision environment can facilitate a race-to-the-bottom behavior by banks

Role of bank reputation

Lender Share	Lang	Language		nce	Boro	ler
	(1)	(2)	(3)	(4)	(5)	(6)
	Diff.	Same	High	Low	No	Yes
CCPI _{lender}	0.031***	0.019	0.073***	0.001	0.052***	0.010
	(800.0)	(0.014)	(0.011)	(0.011)	(0.009)	(0.047)
Controls & Fixed Effects:						
Bank Group Controls	✓	✓	✓	✓	✓	✓
Loan FE	✓	✓	✓	✓	✓	✓
Obs.	8,156	1,904	6,152	4,952	10,928	972
R^2	0.867	0.842	0.818	0.880	0.838	0.938
Mean(Lender Share)	7.722					
Difference	-0.031*		0.048***		-0.055***	
Loan FE Obs. R ² Mean(Lender Share)	8,156 0.867 7.722	1,904	6,152 0.818	√ 4,952	10,928 0.838	972

The effect is stronger when the bank's reputation is less likely to be affected, which is in line with race-to-the-bottom behavior

Climate policy stringency and cross-border lending specialization

	Sp	ecialized Lo	oan	L	Lender Share			
	(1)	(2)	(3)	(4)	(5)	(6)		
CCPI _{lender}	0.007***	0.006***	0.006***	0.044***	0.030***	0.029***		
	(0.002)	(0.002)	(0.002)	(0.007)	(0.008)	(800.0)		
$CCPI_{lender} imes Specialized$ Loan				0.034**	0.039**	0.030*		
Hender				(0.015)	(0.018)	(0.017)		
Controls & Fixed Effects:								
Bank Group Controls		\checkmark	\checkmark		\checkmark	\checkmark		
Country Controls			\checkmark			\checkmark		
Loan FE	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓		
Obs.	12,478	12,478	11,530	12,478	12,478	11,530		
R^2	0.460	0.462	0.465	0.841	0.843	0.853		
Mean(Dep. Var.)	0.291			7.722				

The likelihood of granting a specialized loan and the cross-border loan share increase with the stringency of home-country climate policy

How does the effect differentiate with respect to lenders' characteristics?

<u>Lender Share</u>	Si	ze	Cross-	Border	Capital		NPL		Lead bank	
	(1) Low	(2) High	(3) Low	(4) High	(5) Low	(6) High	(7) Low	(8) High	(9) Yes	(10) No
CCPI _{lender}	0.018** (0.008)	0.061*** (0.010)	0.022** (0.009)	0.107*** (0.013)	0.053*** (0.013)	0.045*** (0.009)	0.031* (0.018)	0.097*** (0.031)	0.046*** (0.013)	0.046*** (0.007)
Fixed Effects:										
Loan FE	\checkmark	✓	✓	✓	✓	✓	✓	\checkmark	✓	\checkmark
Obs.	5,356	5,337	5,328	5,459	5,406	5,626	847	881	1,758	10,119
R^2	0.843	0.858	0.842	0.846	0.841	0.861	0.838	0.808	0.848	0.864
Mean(Lender Share)	7.722									
Difference	0.043***		0.085***		-0.008		0.065*		-0.001	

The effect is stronger for larger, more experienced cross-border lending banks, and banks with high NPL ratios

Which component of the CCPI matters the most?

			Lende	r Share		
	(1)	(2)	(3)	(4)	(5)	(6)
Climate policy _{lender}	0.065***				0.069***	0.065***
	(0.013)				(0.012)	(0.013)
Renewable energy _{lender}		0.111**			0.020	0.037
Kellewable ellergylender		(0.049)			(0.053)	(0.055)
		(0.043)			(0.055)	(0.055)
Energy efficiency _{lender}			0.111***		0.039	0.027
			(0.042)		(0.079)	(0.084)
CHC				0.007***	0.005	0.000
GHG emissions improvement _{lender}				0.037***	0.035	0.032
				(0.014)	(0.022)	(0.023)
Controls & Fixed Effects:						
Bank Group Controls	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
$Borrower \times Year FE$					✓	
Loan FE	✓	✓	✓	✓		✓
Obs.	12,478	12,478	12,478	12,478	12,478	12,478
R ²	0.842	0.841	0.841	0.841	0.809	0.842
Mean(Lender Share)	7.722					

Among four categories, climate policy matters the most

Are there regional patterns?

Lender Share	Europe vs USA	Europe vs Emerging markets	Europe vs Europe	Europe vs Asia	Europe vs Anglo-Saxor	
	(1)	(2)	(3)	(4)	(5)	
CCPI _{lender}	0.029	0.131***	0.008	0.110	0.040*	
	(0.026)	(0.032)	(0.016)	(0.071)	(0.023)	
Controls & Fixed Effects:						
Bank Group Controls	✓	✓	✓	✓	✓	
Loan FE	✓	✓	✓	✓	✓	
Obs.	3,751	885	3,069	371	4,091	
R^2	0.820	0.894	0.907	0.864	0.833	
Mean(Lender Share)	7.722					

- We study regional patterns to see the direction of cross-border lending
- European lenders channel their credit supply towards emerging markets due to a more stringent climate policy at home

Climate policy stringency differentials and cross-border credit flows

		log(Number of loans)				log(Loan amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Δ ССРІ	0.025***	0.028***	0.036***	0.028***	0.029***	0.055***	0.073***	0.057***	
	(0.005)	(0.004)	(0.005)	(0.005)	(800.0)	(0.009)	(0.010)	(0.011)	
Controls & Fixed Effects:									
Borrower country FE		✓				✓			
Borrower country \times Year FE			✓	✓			✓	✓	
Bank Group Controls				✓				✓	
Obs.	4,211	4,208	4,185	4,185	4,211	4,208	4,185	4,185	
R^2	0.058	0.265	0.318	0.354	0.024	0.222	0.309	0.373	
Mean(dep. var.)	2.198				19.495				

CCPI changes may cause higher lender shares that are offset by fewer loans o Our results are robust to this conjecture

▶ More on loan amounts

Loan amounts

		log(Loan amount)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)			
CCPI _{lender}	0.029***	0.012***	0.012***	0.012***	0.012***	0.008***	0.016***			
	(0.007)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)			
Controls & Fixed Effects:										
Bank Group Controls	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark				
Borrower FE		✓	\checkmark							
Year FE			✓							
$Borrower\timesYear\;FE$				\checkmark						
Loan FE					✓	✓	\checkmark			
Bank Group FE						\checkmark				
$Bank\;Group\;\times\;Year\;FE$							✓			
Obs.	12,478	12,478	12,478	12,478	12,478	12,394	12,105			
R ²	0.069	0.728	0.732	0.804	0.902	0.925	0.930			
Mean(log(Loan amount))	17.352									

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Alternative indices for home country climate policy stringency

		Lender Share								
	(1)	(2)	(3)	(4)	(5)	(6)				
C3-I _{lender}	0.141* (0.072)	0.162* (0.093)	0.128 (0.131)							
EPI _{lender}				0.075*** (0.011)	0.070*** (0.011)	0.064*** (0.022)				
Controls & Fixed Effects:										
Bank Group Controls		\checkmark	\checkmark		✓	✓				
Country Controls			\checkmark			✓				
Loan FE	✓	✓	✓	✓	✓	✓				
Obs.	1,897	1,897	1,742	11,889	11,889	10,833				
R ²	0.817	0.822	0.818	0.833	0.835	0.846				
Mean(Lender Share)	7.081			7.918						

- We test the robustness of our results to alternative climate policy indices
 - 1. The Climate Change Cooperation Index (C3-I) by Bernauer and Böhmelt (2013)
 - 2. The Environmental Policy Index (EPI) developed by YCELP, CIESIN, and the World Economic Forum