CEO Hometown Favoritism in Corporate Environmental Policies

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ABFER, May 2022

Motivation

- Corporations play a vital role in environmental sustainability.
  - In 2020 alone, facilities in the U.S industry sectors released three billion pounds of toxic chemicals.

- An emerging literature seeks to uncover how corporate environmental sustainability is shaped by external forces such as the presence of institutional investors and the influence of capital markets.
  - Akey and Appel, 2019; Dyck, Lins, Roth, and Wagner, 2019; Krueger, Sautner, and Starks, 2020; Naaraayanan, Sachdeva, and Sharma, 2020; Shive and Forster, 2020; etc.

This paper: How corporate insiders (i.e., CEOs) affect corporate environmental policies and pollution outcomes?

Motivation

Empirically challenging to identify the effect of managerial preferences on CSR (manager trait $X \rightarrow$ firm behavior Y).

- Preferences are often not revealed or well identified.
  - Over 99% CEOs agree on the importance of sustainability issues (HBS review, Winston 2019).
  - Post-2000: around 200,000 non-compliance cases investigaged by the EPA with over $800 billion of legal penalties.
- Inconclusive debate on whether CEO truly have a personal impact on corporate policies.
  - Much of the managerial style effects can be explained by the matching between firms and CEOs through the board (Fee, Hadlock, and Pierce, 2013).

This paper:

We overcome these challenges by studying the effect of **CEO hometown attachment** on **plant-level** pollution.

- CEOs' personal preferences are location-specific.
- Granular data with firm-year FE research design allow us to exploit within-firm variation across plants.
- Plant-level pollution and waste management activities can be precisely measured – linking environmental performance and firm resource allocation to establish the channels.

Hometown Attachment

CEOs are more reluctant to pollute near their birthplaces.

- Psychology research suggests that hometown is the places that people feel a "sense of belonging" and get incorporated into one's identity (Fullilove 1996, Dahl and Sorenson 2010).
- People have a stronger desire to maintain a good image in their hometowns, where their good deeds are **more salient and memorable** (Relph 1976).
- Place attachment encourages individual environmentally responsible behavior (Vaske and Kobrin 2001, Hernandez et al. 2010).
- Hometown linkages in business decisions:
  CEOs favoritism towards hometown labors (Yonker 2017), M&A targets (Jiang, Qian, and Yonker 2019), and R&D (Lai, Li, and Yang 2020)

Main Findings:

Q: Do firms pollute less near CEOs' hometowns?

- **YES**: hometown plants' emission is **20%** lower than peer plants, conditional on production scale.
- Within firm-year, location-year, and industry-year.
- Post CEO turnovers where "hometown" label changes.
  - Pollution increases in outgoing CEOs' hometown plants.
  - Pollution drops in incoming CEOs' hometown plants.

Q: Channels for CEOs to reduce hometown toxic releases?

- Investing more in pollution prevention.
- Implementing waste management activities post-production: recycling, energy recovery, and treatment.

Main Findings:

Q: Is the observed reduction in hometown plants optimal for shareholders?

- Cross-sectional: most pronounced in poorly-governed firms.
- Reduced by the 2003 dividend tax cut, which aligned managerial incentives better.
- Interpretation: pollution reduction as a form of agency conflict.

1. Data

Data sources: Toxic release data

The EPA's Toxic Release Inventory (TRI)

- Plant-level pollution emission from 1992 to 2018
- The total amount of toxic release for each chemical
- Waste management activities

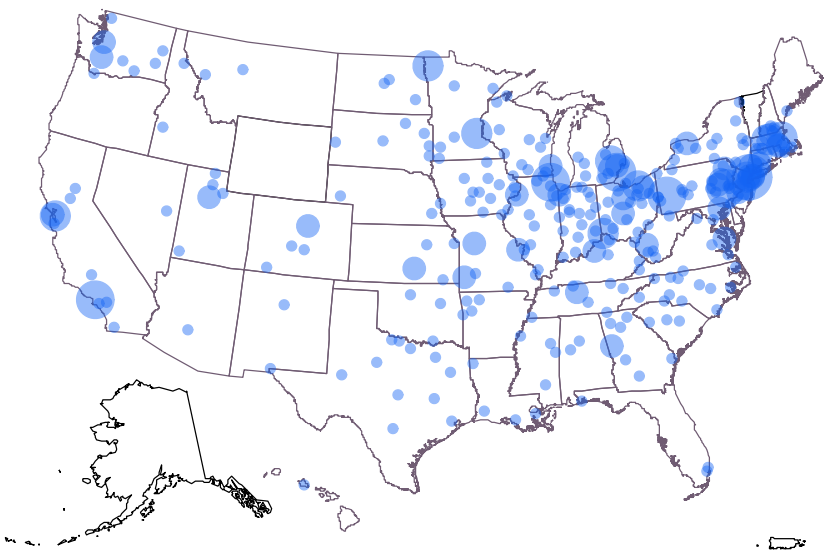
The National Establishments Time-series (NETS) database

- Plant-level production scale information

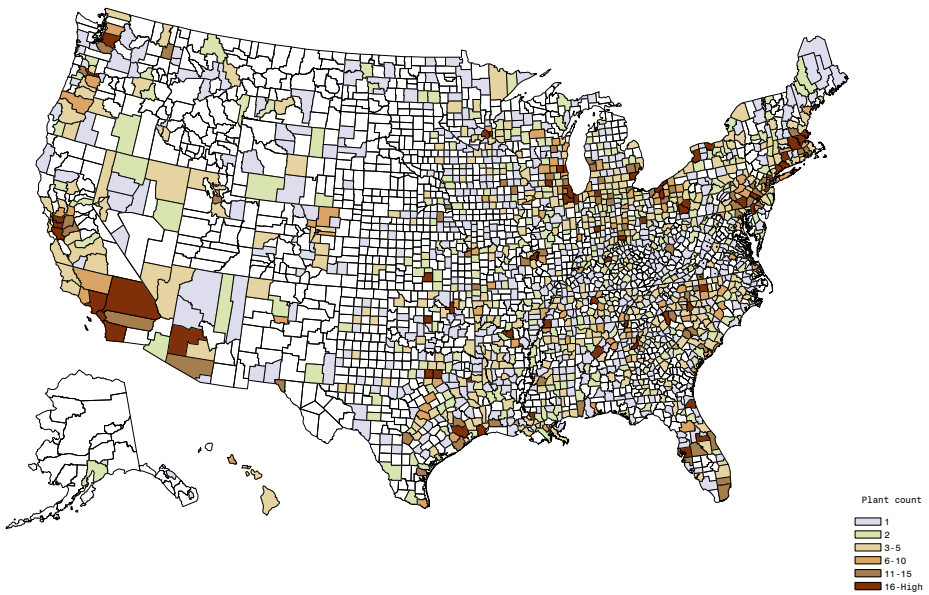
Data sources: CEO hometown data

- CEO identitiers: ExecuComp (covers S&P 1500 companies)
- CEO birthplaces: Marquis Who's Who/Notable Names/Google
- Hometown indicators: D(Hometown State), D($\leq$ 100 miles)

(a) CEO Count



(b) Plant Count



2. Pollution Reduction in CEOs' Hometowns

Do firms pollute less near CEOs' hometowns?

$$\begin{aligned} log(1 + Pollution_{p,s,i,j,t}) = \alpha &+ \beta_1 D(Hometown\ State) \\ &+ \beta_2 D(HQ\ State) + \beta_3 Log(Employees) \\ &+ \beta_4 Chemical\ Counts + FEs + \epsilon_{p,s,i,j,t} \end{aligned}$$

- Plant p, in parent firm i year t, in industry j, located in state s
- Firm-year FEs ($\alpha_{i,t}$): time varying firm characteristics, including firm-CEO matching
- Industry-year FEs ($\alpha_{j,t}$): pollution intensity across industries
- State-year FEs ($\alpha_{s,t}$): local environment regulations, economic development, etc.

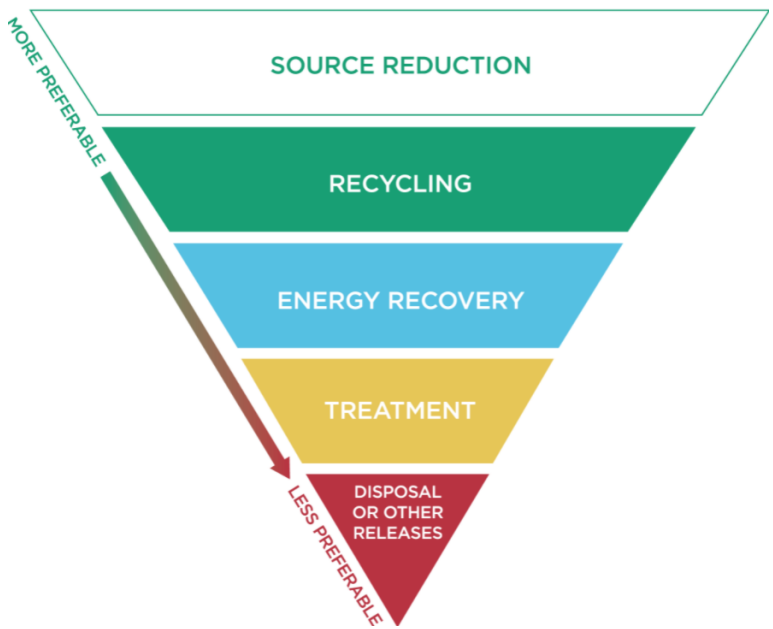
Do firms pollute less in CEOs' hometowns?

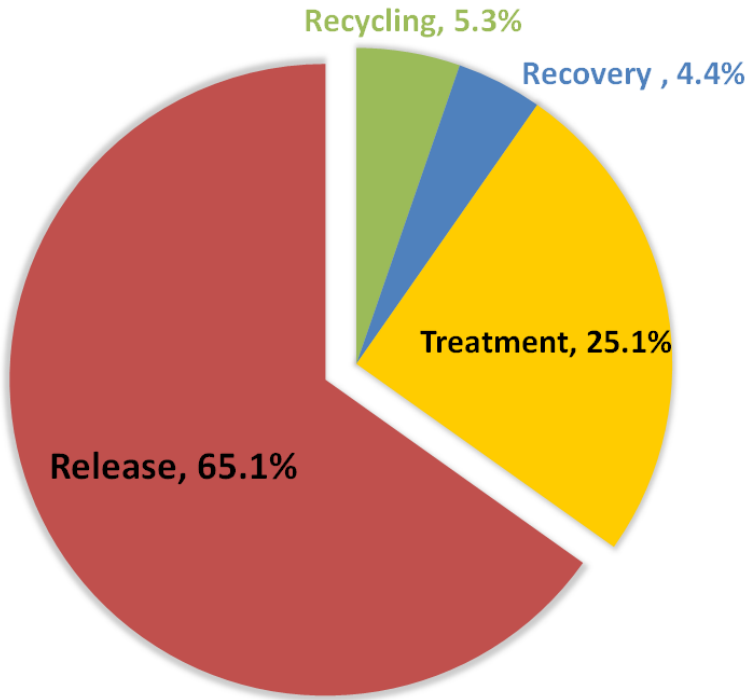
- Pollution is about 20% lower for hometown plants

	Log(Total Release)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
D(Hometown State)	-0.413***	-0.152*	-0.230**	-0.220***					
	(0.086)	(0.090)	(0.091)	(0.076)					
D($\leq$ 100 miles)					-0.483***	-0.216**	-0.413***	-0.332***	
					(0.093)	(0.091)	(0.091)	(0.078)	
D(0 – 50 miles)									-0.372***
									(0.098)
D(50 – 100 miles)									-0.251**
									(0.105)
D(100 – 300 miles)									0.056
									(0.056)
D(300 – 500 miles)									-0.008
									(0.052)
D(HQ State)	0.250***	0.399***	0.344***	0.052	0.201***	0.380***	0.329***	0.034	0.032
	(0.071)	(0.070)	(0.069)	(0.054)	(0.071)	(0.071)	(0.071)	(0.056)	(0.056)
Log(1+Employees)				0.104***				0.113***	0.113***
				(0.012)				(0.013)	(0.013)
Chemical Counts				0.354***				0.357***	0.357***
				(0.007)				(0.007)	(0.007)
Observations	41633	41633	41633	41633	39616	39616	39616	39616	39616
Adjusted R^2	0.393	0.404	0.513	0.625	0.391	0.403	0.512	0.625	0.625
Parent-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Plant state-year FE	N	Y	Y	Y	N	Y	Y	Y	Y
Plant Industry-year FE	N	N	Y	Y	N	N	Y	Y	Y

Channels: Waste management Activities

1. Source reduction (aka pollution prevention)
   - to reduce/eliminate the production of toxic chemicals
2. Post production: recycling; energy recovery; treatment





Mechanisms: Source reduction

Panel (a): Source Reduction Activity Count

	(1)	(2)
D(Hometown State)	0.197**	
	(0.098)	
D($\leq$ 100 miles)		0.284**
		(0.138)
Observations	187789	187789
Adjusted R^2	0.206	0.206
Controls	Y	Y
Parent-year FE	Y	Y
Chemical-year FE	Y	Y

Panel (b): Total Waste Generated

	(1)	(2)
D(Hometown State)	-0.135***	
	(0.050)	
D($\leq$ 100 miles)		-0.089*
		(0.051)
Observations	41545	41545
Adjusted R^2	0.578	0.578
Parent-year FE	Y	Y
Plant state-year FE	Y	Y
Plant industry-year FE	Y	Y

Mechanisms: Further waste management

	% Recycled (1)	% Recovery (2)	% Treatment (3)	% Released (4)
D($\leq$ 100 miles)	1.421***	1.206***	0.593	-3.222***
	(0.435)	(0.456)	(0.787)	(0.867)
Observations	37621	37621	37621	37621
Adjusted R^2	0.250	0.315	0.337	0.370
Controls	Y	Y	Y	Y
Parent-year FE	Y	Y	Y	Y
Plant state-year FE	Y	Y	Y	Y
Plant industry-year FE	Y	Y	Y	Y

Evidence from CEO turnovers

A subsample of firms with CEO turnovers:

- The predecessor and successor have difference hometown states
- Re-run plant-level regressions with **plant fixed effects**

	Log(Total Release)	
	(1)	(2)
D(Hometown to Nonhometown)*D(Post)	0.415**	
	(0.181)	
D(Nonhometown to Hometown)*D(Post)		-0.572**
		(0.264)
D(Post)	0.0503	0.0106
	(0.034)	(0.069)
Log(1+Employees)	0.0683	0.127**
	(0.089)	(0.061)
Chemical Counts	0.161***	0.223***
	(0.027)	(0.026)
Observations	4617	4684
Adjusted R^2	0.971	0.975
Parent-year FE	Y	Y
Plant state-year FE	Y	Y
Plant FE	Y	Y

3. Hometown Favoritism and Firm Value

Hometown-pollution reduction and firm value

- Manager-initiated CSR is unlikely to be optimal for firm value
- Empirically difficult to directly assess the value implication of hometown-pollution reduction.
- Our approach:

    1. Cross-sectional variation in the **quality of corporate governance**.
    2. An exogenous reduction in agency conflicts driven by the 2003 dividend tax cut.

Agency issue: Cross-sectional analyses

	Log(Total Release)		
	(1)	(2)	(3)
D(Hometown State)*D(High G-index)	-0.228*		
	(0.136)		
D(Hometown State)*D(High E-index)		-0.501***	
		(0.133)	
D(Hometown State)*D(Low Analysts)			-0.273**
			(0.118)
Observations	30285	29356	41596
Adjusted R^2	0.640	0.639	0.625
Parent-year FE	Y	Y	Y
Plant state-year FE	Y	Y	Y
Plant industry-year FE	Y	Y	Y
Controls	Y	Y	Y

Agency issue: The 2003 dividend tax cut

- Reduces the highest statutory dividend tax rate from 35% to 15%, affecting wealthy people the most.
- Lower dividend tax rate $\Rightarrow$ fewer **agency-motivated** projects, in particular for CEOs' with high stock ownership (Chetty and Saez (2010); Masulis and Reza (2015); Cheng, Hong, and Shue (2020)).

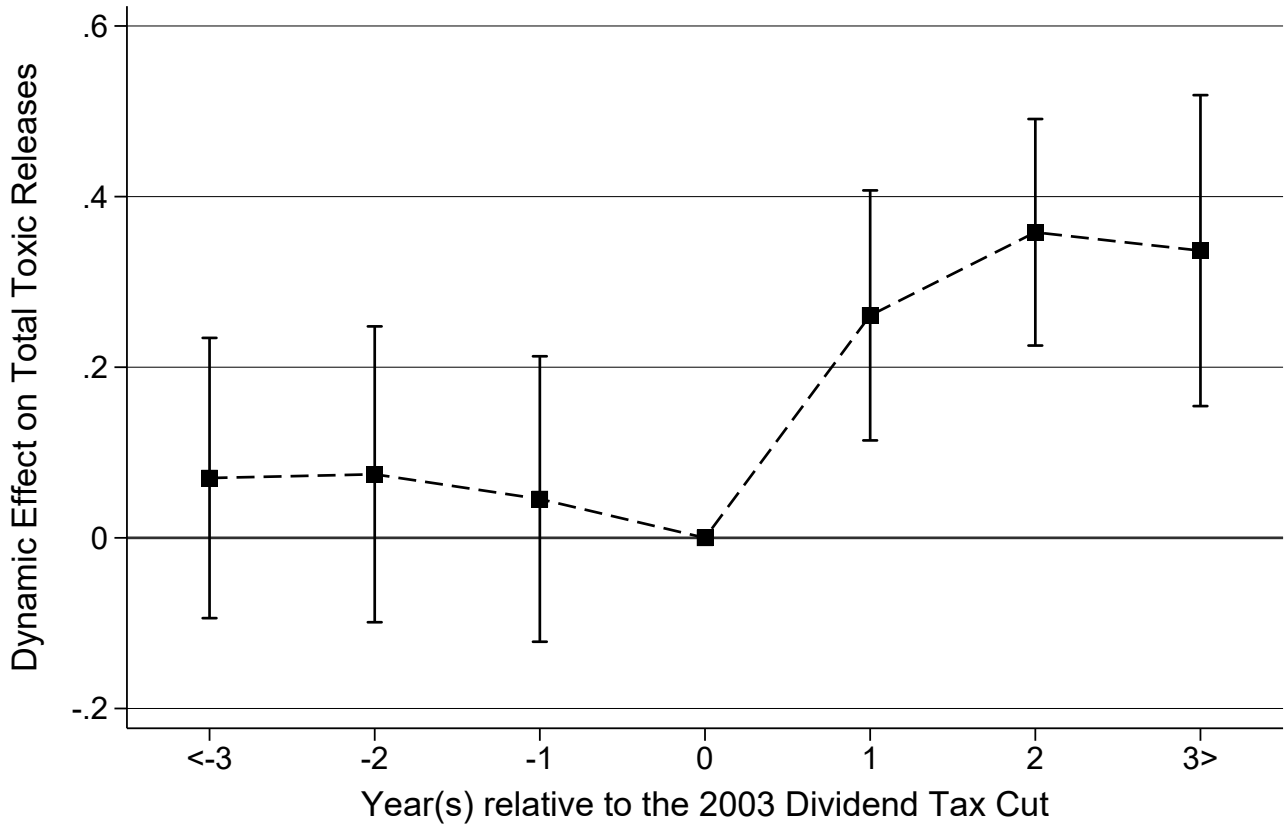
A triple-difference regression design:

$$\begin{aligned} Log(Pollution) + \beta_3 D(Hometown\ State) * D(Post\ 2003) * \%CEO\ Ownership \\ = \alpha + \beta_1 D(Hometown\ State) * D(Post\ 2003) \\ + \beta_2 D(Hometown\ State) * \%CEO\ Ownership \\ + Controls + FEs + \epsilon_{p,i,s,t}, \end{aligned}$$

Agency issue: The 2003 dividend tax cut

Dependent variable	Log(Total Release)	
	(1)	(2)
D(Hometown State)×		
D(Post 2003)*% CEO Ownership	0.318***	0.619***
	(0.089)	(0.232)
% CEO Ownership	0.131	0.227**
	(0.080)	(0.091)
D(Post 2003)	-0.233**	-0.291***
	(0.098)	(0.110)
D(Hometown State)×		
% CEO Ownership^2		-0.009
		(0.012)
D(Post 2003)*% CEO Ownership^2		-0.054**
		(0.024)
Observations	35728	35728
Adjusted R^2	0.905	0.905
Controls	Y	Y
Parent-year FE	Y	Y
Plant state-year FE	Y	Y
Plant industry-year FE	Y	Y
Plant FE	Y	Y

Agency issue: The 2003 dividend tax cut



4. Cross-sectional Drivers

Firm-level pollution emission

- Does CEO hometown favoritism affect firm-level pollution?
  - **Yes**, when parent firms' operations overlap with CEOs' hometown

	Log(Total Release)	
	(1)	(2)
Frac Hometown Plant	-1.229***	
	(0.311)	
D(Hometown in HQ)		-0.638***
		(0.119)
Parent industry-year FE	Y	Y
Headquarter state-year FE	Y	Y
Controls	Y	Y

Firm CSR Ratings and financial constraints

Hometown favoritism is more pronounced among firms with worse CSR ratings or financial constraints

- CEOs prioritize environmental protection in their hometowns
- Disengagement in abatement likely reflects cost considerations

	Log(Total Release)			
	(1)	(2)	(3)	(4)
D(Hometown State)*D(Low KLD Score)	-0.353**			
	(0.145)			
D(Hometown State)*D(Low ENV Score)		-0.361**		
		(0.167)		
D(Hometown State)*D(Text FC)			-0.295**	
			(0.139)	
D(Hometown State)*D(High Default Risk)				-0.328**
				(0.136)
Parent-year FE	Y	Y	Y	Y
Plant state-year FE	Y	Y	Y	Y
Plant industry-year FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y

Conclusions

- How managerial personal preferences interact with corporate CSR activities
- Hometown favoritism leads firms to reduced pollution emissions at plants closer to CEOs' hometowns
- Hometown pollution reduction is achieved by allocating more corporate resources to pollution abatement activities
- A form of agency issues: Such CSR activities are likely suboptimal for the firm, but internalize the environmental externalities from a societal perspective