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Climate Regulation's Effects on Business  
and Public Support for Climate Action

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## Origins of climate policy attitudes

*The literature:* Climate policy attitudes are driven by employment, environmental exposure, partisan/ideological, and demographic factors, as well as the design of regulation and treaties.

**Our additional answer:** climate policy attitudes reflect holistic reactions towards regulation's effects on companies and industries. In particular, regulation viewed as hurting small firms (and not big firms) is supported less.

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**Our additional answer:** climate policy attitudes reflect holistic reactions towards regulation's effects on companies and industries. In particular, regulation viewed as hurting small firms (and not big firms) is supported less.

This answer connects to literature on populist and progressive anti-corporate sentiment; work on inequality and economic policy; and the long-running debate over pocketbook vs. other drivers of policy attitudes.

**Approach:** We present results from a survey on climate attitudes and a survey experiment which manipulates ideas about climate policy's effects on firms.

## Two models of climate regulation's incidence on firms

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Many arguments – fixed and variable costs of regulation; access to financing; political capital; offshoring of pollution; ability to garner public benefits from costly investments – suggest a unified alternative account focused on firm size.

**Firm-size approach:** larger firms (and their workers) will find it easier to adjust to climate regulations than smaller firms (and their workers).

This frame is reflected in the discourse, some of it apolitical (“Survey: small businesses face recurring barriers to carbon reduction”) and some tendentious (“Democrats... prioritize the Green New Deal over small businesses...”)

## Survey respondents endorse both theories

From a survey of 2000 Americans fielded with YouGov Omnibus in February 2023:

*Which companies do you think will find it easiest to comply with new rules to make companies reduce greenhouse gas emissions and cut energy usage and fuel consumption?*

→ Given 6 response options, 29% reply firms that are non-emitters while 21% reply big firms.

*Which companies do you think will find it hardest?*

→ Given 6 response options, 35% reply firms that are heavy emitters while 21% reply small firms.

## Two models of climate regulation's incidence on firms

**Research question:** What are the effects of these competing accounts on support for climate regulation among the mass public?

### Hypothesis

Respondents exposed to a frame emphasizing large companies' ease and small companies' difficulty with climate regulations will be more opposed to climate regulations than respondents exposed to a frame emphasizing heavily emitting industries' difficulty and non-emitting industries' ease.

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Note that we focus on the difference in attitudes between the firm size account and the emittingness account – so we expect a negative treatment effect.

**A 'redistributive rightness' channel:** People exposed to the emissions-intensity account see polluting firms as deserving of regulatory incidence. So they react positively if they think climate policy targets heavy polluters.

On the other hand, small firms are more sympathetic while big corporations are unpopular as a class. So we expect the firm-size approach to provoke negative attitudes to climate regulation compared to the emittingness approach.

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**Moderators:** This channel suggests that people who don't like big corporations, or don't like the fossil fuel industry, should have the strongest reaction against climate regulation when exposed to the firm-size approach.

**Mediators:** The negative effect of the 'firm size' narrative should be mediated by concerns about regulation's fairness or effects on 'good' businesses.

**Employment channel:** Survey respondents may think about the effect of climate change regulation on their own employment.

Since more people work at small companies than both big companies or heavily emitting companies, exposure to the idea that small firms are harmed by regulation might spark an on-average negative affect towards climate action.

**Moderators:** Workers at small firms may oppose climate regulation if exposed to the firm-size account; workers in heavily emitting industries may oppose climate regulation if exposed to the emissions-intensity account.

**Mediators:** The negative effect of the 'firm size' narrative should be mediated by job worries.

We again surveyed  $N = 2000$  Americans in February 2023 using YouGov omnibus; note that the two samples are non-overlapping.

The sample was generated using stratified random sampling of the YouGov Omnibus panel based on gender, age, race, and education. YouGov supplied poststratification weights to ensure national representativeness on presidential vote (in 2016 and 2020) and gender, age, race, years of education, and region.

Our set-up, models, and reporting are pre-registered.

*The US is working on rules to limit companies' greenhouse gas emissions and energy usage. These rules may slow down climate change, but will also create costs for companies.*

*New regulations will be especially costly for **[small and medium-sized companies/companies that heavily emit greenhouse gases or consume energy]**, who will find it challenging to lower their emissions and use less energy. Some **[small/heavily emitting]** businesses may even shut down. New regulations will have fewer negative effects on **[large and very large companies/companies that do not heavily emit greenhouse gases or consume energy]**.*

The treatment texts are followed by two outcome questions [next slide] and then our mediators.

Note that 800 respondents each received these treatments, and 400 received a 'no text' control.

*To what extent would you support new regulations on businesses' greenhouse gas emissions and energy consumption to reduce climate change?*

*[Answers: Totally oppose; Mostly oppose; Somewhat oppose; Neither favor nor oppose; Somewhat Favor; Mostly Favor; Totally favor.]*

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*To what extent do you support the United States participating in the Paris Climate Agreement, an international treaty which commits countries to domestic efforts to slow down climate change?*

*[Answers: Totally oppose; Mostly oppose; Somewhat oppose; Neither favor nor oppose; Somewhat Favor; Mostly Favor; Totally favor.]*

## Survey experiment results

We expect that respondents given the firm-size treatment will hold more negative attitudes towards climate regulation and the Paris Accords than respondents given the emissions-intensity treatment.

	1	2	3	4	5
<u>Climate regulation: Strongly oppose (1) to Strongly favor (7):</u>					
Average treatment effect	-0.48***	-0.50***	-0.52***	-0.48***	-0.48***
ATE 95% CI	[-.67, -.29]	[-.69, -.32]	[-.71, -.33]	[-.64, -.32]	[-.64, -.32]
N	1600	1600	1600	1600	1600
<u>Climate treaty: Strongly oppose (1) to Strongly favor (7):</u>					
Average treatment effect	-0.19 <sup>+</sup>	-0.21*	-0.23*	-0.18*	-0.18*
ATE 95% CI	[-.39, .01]	[-.41, -.01]	[-.43, -.03]	[-.35, -.01]	[-.35, -.01]
N	1600	1600	1600	1600	1600
Demo. controls	No	Yes	Yes	Yes	Yes
Educ./Emp. controls	No	No	Yes	Yes	Yes
Party/ideology controls	No	No	No	Yes	Yes
Climate controls	No	No	No	No	Yes

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Climate controls	No	No	No	No	Yes

The 'firm size' treatment relative to control provokes similarly sized negative treatment effects; the 'emittingness' treatment has no effect relative to control.

# Mechanisms: employment and attitudes towards corporations

**Heterogeneous effects:** We examine whether the negative treatment effect is closer to zero among:

1. Those employed at large companies.
2. Those employed in heavily emitting industries.
3. Those with positive views of big corporations.
4. Those with positive views of the fossil fuel industry.

Outcome: Attitude towards Climate Regulations, Oppose (1) to Favor (7):

Moderator	1 Large employer	2 Heavy emitter	3 Pos. view corps.	4 Pos. view fossil fuels
Expected interaction sign	+	+	+	+

Models with controls:

Treated	-0.51*** (0.12)	-0.49*** (0.10)	-0.67*** (0.12)	-0.76*** (0.11)
Moderator	-0.05 (0.13)	-0.32* (0.14)	-0.45*** (0.12)	-1.06*** (0.12)
Treated·Moderator	0.10 (0.17)	0.05 (0.20)	0.39* (0.17)	0.58*** (0.16)

**Mediators:** Respondents answered a three-part question on mediating beliefs:

*To what extent do you agree or disagree with the following statements about efforts to regulate greenhouse gas emissions:*

- *Climate-related regulations could endanger the jobs of people like me.*
- *Climate-related regulations may harm some businesses that haven't done anything wrong.*
- *Climate-related regulations will harm companies that make important contributions to the economy and society.*

*[Answers: strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, and strongly agree.]*

**Mediation effects:** We examine if the firm-size treatment positively impacts each of the three mediators (job concern, unfair incidence, harmful incidence), and if those mediators in fact mediate our treatment effect.

Effect:	Estimate	95% CI
<u>Climate regs.: Oppose (1) to Favor (7):</u>		
Total average treatment effect	-0.47***	[-.62, -.31]
<u>Mediator: Regulation-induced job concern:</u>		
Coefficient from mediator model	0.16*	[.03, .28]
Average causal mediation effect	-0.08*	[-.15, -.02]
Average direct effect	-0.39***	[-.54, -.23]
<u>Mediator: Unfairness of regulation's effects:</u>		
Coefficient from mediator model	0.16**	[.05, .27]
Average causal mediation effect	-0.10**	[-.16, -.03]
Average direct effect	-0.38***	[-.55, -.23]
<u>Mediator: Harms of regulation on valuable businesses:</u>		
Coefficient from mediator model	0.11	[-.01, .22]
Average causal mediation effect	-0.07	[-.15, .01]
Average direct effect	-0.40***	[-.55, -.28]

We see mixed support for the idea that employment/'pocketbook' concerns are driving the negative effect of the 'firm size' discourse.

We see more general support for the idea that general 'rightness' concerns are driving the negative effect of the 'firm size' treatment, especially via a mechanism emphasizing the unfairness of regulation's effects. Survey respondents react very negatively to the idea that small firms might be harmed.

Three contributions:

1. An original explanation for public hostility to climate regulation, focused on broader normative and material evaluation of effects of regulation.
2. Climate policy should be designed to assuage concerns that small firms are disproportionately harmed or big firms benefit from anti-competitive effects. Relevant for thinking about subsidies and tax incentives.
3. We contribute to an interdisciplinary literature on the effects of anti-corporate animus, showing its effect on climate attitudes. Anger towards elites is a driving force in contemporary politics.

Thank you!

## Heterogeneous TEs: Firm Size

	'Firm size' frame	Emittingness frame	Treatment effect
Big employer	Positive	Neutral/Pos.	Zero or positive
Small employer	Negative	Neutral/Pos.	Negative

'Positive' or 'Negative' indicates attitude toward climate-related regulations.

## Heterogeneous TEs: Emissiongness of Employers

	'Firm size' frame	Emissiongness frame	Treatment effect
Non-emitting employer	Negative	Positive	Negative
Heavily emitting employer	Negative	Negative	Zero

'Positive' or 'Negative' indicates attitude toward climate-related regulations.

## Heterogeneous TEs: Attitudes toward Big Corporations

	'Firm size' frame	Emittingness frame	Treatment effect
Anti-corporate	Negative	Neutral/Pos.	Negative
Pro-corporate	Positive	Neutral/Pos.	Zero or positive

'Positive' or 'Negative' indicates attitude toward climate-related regulations.

## Heterogeneous TEs: Attitudes toward Fossil Fuel Industries

	'Firm size' frame	Emittingness frame	Treatment effect
Anti-fossil fuel inds.	Neutral/Pos.	Positive	Negative
Pro-fossil fuel inds.	Neutral/Pos.	Negative	Positive

'Positive' or 'Negative' indicates attitude toward climate-related regulations.