Topic Proposal - Carbon Neutral Pledges

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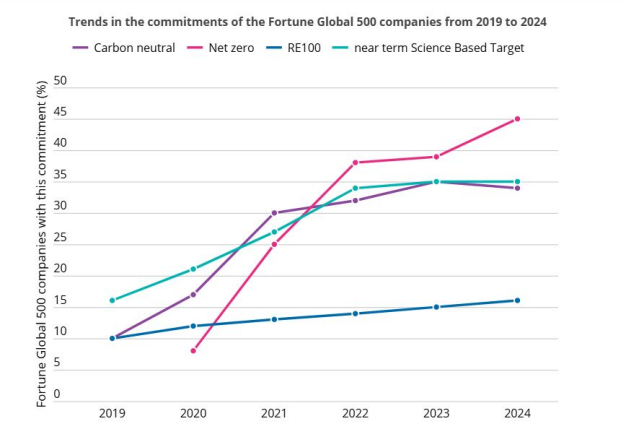
Section 2

Executive summary



34% fortune 500 are currently carbon neutral committed. This number jumped from 17% to 30% from 2020-2021, leaving 4-5 years of work for a majority of these companies attempting to reach their carbon. This allows us to analyze the short and long term benefits of making a carbon pledge and if companies are being responsible in their actions.

- Graph from Climate Impact Partners

Company Gains

- How have fortune 500 companies benefited from making these promises?

Accountability

- Are companies actively providing plans?
- Are they following through with their plans?

Carbon Credits

- Carbon credit content in plans?
- How valid are carbon credits?

Motivation

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Motivation

Research Question:

What are benefits of corporate carbon-neutral pledges, and are companies truly delivering on these commitments, particularly those relying heavily on carbon credits?

Why do we care?

In a capitalist society, it is interesting to intersect the economic dynamics of making expensive and innovative promises and keeping them.

Why isn't it obvious?

Holding companies or political leaders to their word is becoming a thing of the past, so it is unclear how companies might benefit from commitments. Trends can lead to overconfidence.

Economic Mechs

Company evaluation, profit vs image,

Related Literature

02

Section 6

Benefit of Carbon Pledges

Stock Prices

"Announcements of green pledges significantly and persistently raise stock prices, consistent with reductions in the carbon premium" (Baur).

Table 4: Stock market response to green pledges

	All green pledges			First green pledges		
	(1)	(2)	(3)	(4)	(5)	(6)
Green pledge	0.142***	0.156***	0.213***	0.281***	0.285***	0.309***
	(0.04)	(0.04)	(0.04)	(0.11)	(0.11)	(0.11)
Book-to-market	-5.525	-28.971***		-5.509	-28.972***	
	(5.07)	(7.20)		(5.07)	(7.20)	
Leverage	-0.974**	-3.753***		-0.973**	-3.753***	
	(0.39)	(0.63)		(0.39)	(0.63)	
Size	0.004*	-0.110***		0.005*	-0.110***	
	(0.00)	(0.01)		(0.00)	(0.01)	
Sales growth	-13.011***	-0.916		-13.019***	-0.914	
	(4.09)	(3.78)		(4.09)	(3.78)	
Return on equity	54.665***	22.419***		54.658***	22.413***	
	(6.68)	(5.72)		(6.68)	(5.72)	
Number of obs.	14,815,228	14,815,228	17,529,819	14,815,228	14,815,228	17,529,819
R^2	0.18	0.18	0.17	0.18	0.18	0.17
Industry FE	Yes	No	Yes	Yes	No	Yes
Firm FE	No	Yes	No	No	Yes	No
Time FE	Yes	Yes	Yes	Yes	Yes	Yes

Fortune 500

Current plan is to limit analysis to Fortune 500 companies.

500

Additional Outcome Variables

Look into carbon's impact on media reception trends and google searches and the gain that attention and reputation has on future profits. Furthermore, see the effect long term stock price effects.

Section 7

Accountability

Measurement And Follow Through

"Several recent studies point to considerable variation in the measurement of corporate carbon footprints and in reporting progress toward the target of full decarbonization. More broadly, earlier literature has expressed concern over greenwashing in corporate commitments, pointing to "decoupling" of commitments and concrete actions and a general lack of corporate accountability" (Comello).

Public Reports

I want to analyze contents of publicly available sustainability reports to see if companies are able to back their words.

Looking For:

Mid-point deadlines, transparency, carbon credit contents

Section 8

Carbon Credits

Pros

"A perspective based on creation and use of carbon credits provides a means of avoiding the shock of abrupt industrial change…Had entrepreneurs in the 18th and 19th centuries focused only on costs and not on the returns available through use of new technologies…then the transformation we call the Industrial Revolution would probably never have happened" (Mathews). Innovation > reduced costs.

Cons

"Analysis of interviews with carbon offset market practitioners suggests that identification with carbon offsetting is only partial, and that it is sustained through disavowal, through trust in the authority of the Other, and through desire for carbon offsetting's unrealisable promises" (Watt). Unregulated and overambitious

Validity

"Using newly constructed data on the locations and characteristics of over 1,000 wind farms in India, we estimate that at least 52 percent of approved carbon offsets were allocated to projects that would very likely have been built anyway" (Calel).

"The research into Verra, the world's leading carbon standard for the rapidly growing $2bn (£1.6bn) voluntary offsets market, has found that, based on analysis of a significant percentage of the projects, more than 90% of their rainforest offset credits – among the most commonly used by companies – are likely to be "phantom credits" and do not represent genuine carbon reductions" (The Guardian).

Methodology

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Estimating Pledge Benefit

$$y_i = B_0 + B_1 Carbon\ Pledge + B_2 Size + B_3 Industry + B_4 Previous\ 5\ Year\ Performance + \\ + B_5 Competing\ Media\ Stories\ at\ Pledge + \varepsilon$$

3 Outcome Variables: Media Attention, Google Searches, Long Term Stock Changes.

Want to find a way to translate media attention into long term revenue

Estimating Accountability Measures

Of those that are committed to carbon reductions:

Emissions Each Year	
Percentage of Multi-layered Plan	
Percentage of Follow Through	
Percentage of Carbon Credits	

$$Company\ Reduced\ Emissions = B_0 + B_1 Type\ of\ Plan + u_i$$

Types of plan can be fleshed out into individual variables that include Multi year Plan, Types of Reduction, Carbon Credit Contents, etc.

Estimating Carbon Credit Validity

Unsure of how I could do so at the moment but three empirical possibilities:

1. Estimating if the projects would have happened anyway
2. For projects like reforestation, are the trees still there?
3. Testing for measurement error
4. Look into lack of verification
5. Does this increase fossil fuel behavior?

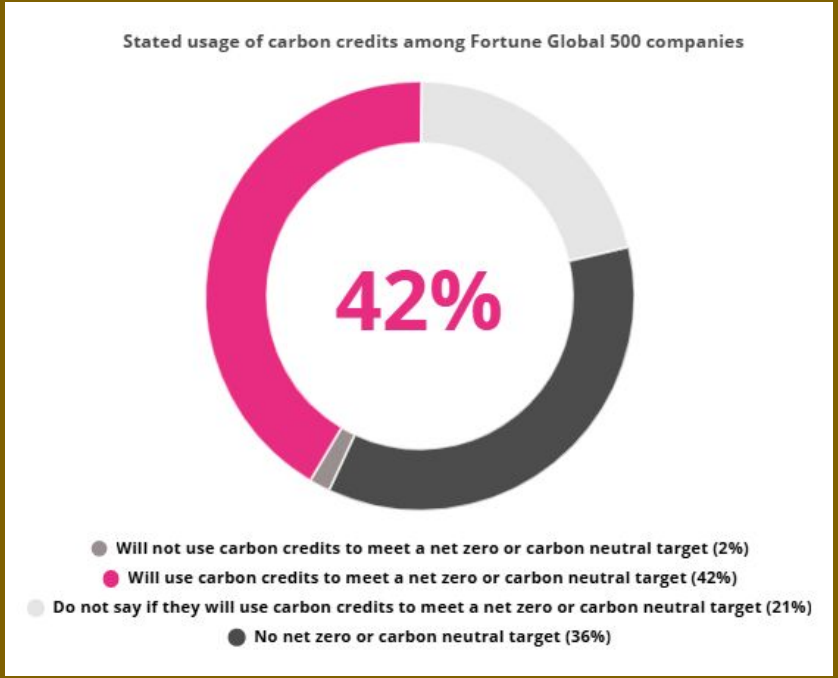

Figure from Impact Climate Partners

Data

04

Collecting Data on Carbon Pledge Effects of Fortune 500 Companies

1. Media Attention - Counting News Articles
2. Google Trends Data, evaluating search trends
3. Stock data has already been pretty extensively looked at, especially for on the day, less for long term stock impact. Is there a difference between long lasting change and day change?

Collecting Data on Company Accountability

1. Collect Past and Recent Company Sustainability Reports
    a. Public multi yeared, layered plan?
    b. Stuck to Plan?
    c. Emissions each year?

Collecting Data on Carbon Credits

1. How much of companies plans include carbon offsetting?
2. Carbon Projects Dataset
    a. I have a dataset of thousands of voluntary published carbon credits projects.
    b. Reforesting and preventing deforestation has received flack for validity.
    c. This dataset includes the project town which could help see if the trees planted would likely be cut down. Similar strategy that The Guardian used for particular areas with development
    d. This data also has Corsia eligibility, which is an aviation carbon credit standard.

Potential Results

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Hypothesis

1. Making promises (irrespective to actions) has a positive effect on future earnings and reputation.
2. Companies that have laid out plans are more accountable to reduce emissions.
3. Carbon offsetting projects are encouraging companies to burn more fossil fuels and are being poorly accounted for.