

# Impact of Corporate Climate Disclosure Regulation on Emissions

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# Intro and Motivation

- Recently, there has been a growing trend of regulatory bodies mandating companies to disclose their carbon emissions
  - EU regulation Corporate Sustainability Reporting Directive (CSRD) goes into effect in 2023
  - SEC currently considering disclosure requirements
- Goal of this project is to assess the impact of disclosure regulation on corporate emissions
- Specifically, I exploit a 2013 UK requirement which mandated publicly-listed firms to disclose emissions

# Research Design

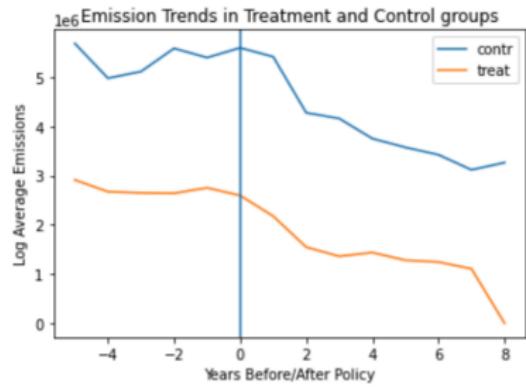
- Using difference-in-difference using 2013 UK policy
  - **Treatment group:** firms subject to disclosure requirement (these are firms incorporated in UK and publicly-listed on London Stock Exchange (LSE))
  - **Control group:** firms on any European stock exchange not subject to regulation (neither incorporated in the UK nor listed on LSE)
- Used yearly emissions data from Refinitiv ESG, which contains firm-level emission data from 2009 - 2022
  - Matched firms with their primary stock exchange and cross-referenced with firms listed on the London Stock Exchange
  - Only included firms who had emissions data in all years between 2009 and 2018

# Regression 1

- Replicating regression to see impact on emissions before and after policy put in place (Jouvenot, Krueger, 2020)
- $\log \text{emissions}_{it} = \beta_1 * \text{Treat}_i + \beta_2 * \text{Post}_t + \beta_3 * \text{Treat}_i * \text{Post}_t + \alpha_t + \phi_i + \epsilon_{it}$ 
  - $\beta_3$  represents causal impact of disclosure requirement policy assuming parallel trends hold between control and treatment firms in pre-period

# Regression 1: Results

- $\beta_3$  estimate: -0.112
- $P > |z| = 0.000$
- Firms in treatment reduced emissions by 11.2% relative to those not impacted by treatment

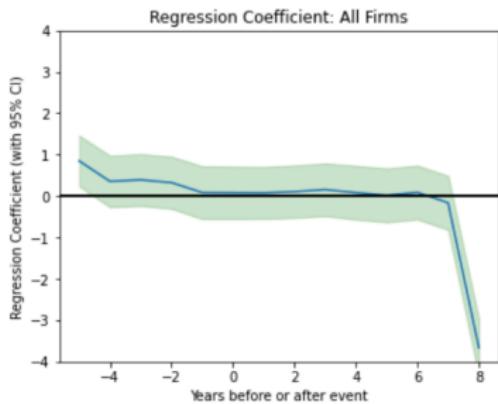
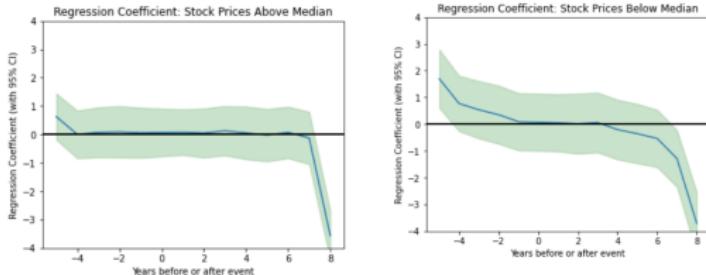


## Regression 2

- **Motivation:** Is there heterogeneity in firms' response to policy? Are some firms more likely to reduce emissions as a result of disclosure requirements than others?
- $\log \text{emissions}_{it} = \beta_1 * \text{Treat}_i + \beta_2 * \text{Post}_t + \beta_3 * \text{Stock}_{it} + \beta_4 * \text{Treat}_i * \text{Post}_t + \beta_5 * \text{Treat}_i * \text{Stock}_{it} + \beta_6 * \text{Stock}_{it} * \text{Post}_t + \beta_7 * \text{Treat}_i * \text{Post}_t * \text{Stock}_{it} + \alpha_t + \phi_i + \epsilon_{it}$ 
  - $\beta_7$  represents triple difference estimate of difference in emission reductions of highly valued firms relative to lowly valued firms

## Regression 2: Results

- $\beta_3$  estimate: -0.202
- $P > |z| = 0.065$
- Highly valued firms in treatment reduced emissions by 20.2% relative to lowly valued firms in treatment



# Conclusions

- Policy seems to have lead to emission reductions
  - before final presentation next fri will add comparison btwn this and other emission reducing policies
- Difficult to assess how if highly valued firms respond differently to this regulation than lowly valued firms
- Difference in investor, public attitudes towards corporate climate responsibility may lead to different results if implemented in US