Short-termist Carbon Emissins
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Research question

- Do managers' short-term financial goals induce them to neglect carbon abatement objectives?

How to answer?

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- CO_2 emissions of firms that miss earnings forecasts by a small margin grow more slowly than those of firms that beat earnings forecasts by a small margin.

- Interpretation: To meet earnings forecast targets, some managers cut costs by giving up investments in CO_2 abatement.

Methodology

1. Empirical analysis showing that firms that just meet analysts' targets have carbon emission growth about 4.73% higher than firms that just miss.
2. Develop a toy contract theory model in which
   - managers would like to over-invest in emissions abatement;
   - shareholders discipline managers by providing incentives linked to short-term financial performance.
3. Generalize the model to a multi-period setting that can be calibrated and used to perform counterfactual analyses.

Conclusion On average, eliminating short-termism in managers' contracts would induce:

- a drop in firms' profits of 2.19%;
- a reduction in aggregate emissions of 142 million tons;
- $\Rightarrow$ financial cost of abatement: $84 per ton $<$ social cost of carbon.

Very Nice Job Market Paper

The paper showcases the author's ability to:

- Ask a relevant research question;
- Document a novel empirical puzzle;
- Develop a simple model to explain the puzzle;
- Build a more complex model and calibrate it;
- Derive policy-relevant counterfactual implications.

Comment 1: Short-Termism and Modeling Choice

From the title, abstract, and introduction, the reader is led to think about managerial short-termism. However,

in the theoretical model:

- The manager is not short-termist: he would actually like to invest more than necessary in CO_2 abatement.
- Shareholders design a contract linking managerial compensation to analysts' forecasts in order to avoid over-investment in CO_2 abatement.

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Probably not: financial performance typically comes first, and only afterward, if at all, do other objectives enter.

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Suggestions:

- **Theory:** Consider a classical principal-agent model in which
  - managers choose how to allocate effort between short-term and long-term projects;
  - managerial contracts are written on observables, such as the stock price;
  - stock prices react to news, i.e. earnings surprises;
  - earnings announcements capture, by nature, short-term performance;
  - as a result, managers may underinvest in long-term projects.
- **Empirics:** Why should the effect operate only through investments in emissions abatement? The need to reduce investment in order to meet earnings forecasts should apply to all long-term investments.
  $\Rightarrow$ Check whether long-term investment growth differs with distance from meeting analysts' forecasts.

Comment 2: What Is the Economics?

Why the discontinuity approach?
One would imagine that:

- Managers who are uncertain about meeting analysts' earnings forecasts will divert resources to cut costs in order to meet the target.
- Ex post, some managers will just meet the target and others will just miss it, but all of them will have reduced costs, for example by increasing emissions.
- Managers who are quite certain to meet (or not meet) the target will not divert resources, as doing so has no impact on their ability to reach the target.

Suggestion: Why focus on a discontinuity at zero distance from the target? Instead, regress emission growth on the distance from the (short term) target.

Other Comments

- Perhaps it is the other side of the coin: analysts may underestimate the earnings of firms that emit more, and overestimate the earnings of firms that reduce emissions.
- Explore the mechanism in more depth:
  - In the cross section, which firms rely more heavily on financial-target incentives? Is the relationship between missing analysts' forecasts and CO_2 emissions stronger for these firms?
  - Can you provide a direct measure of investment in CO_2 abatement?
  - How tightly is executive compensation linked to short-term financial performance, in particular to missing earnings-forecast targets?
  - Are forecast errors correlated with firms' ESG performance?
- Is the model truly dynamic? Why, in the dynamic model, is the financial incentive not state-dependent?

Conclusion

- A nice paper asking a relevant research question and showcasing the author's diverse skill set.
- Some results may be difficult to believe.
- Suggestion: dive deeper to test more directly the actual mechanisms at play.