

Cash versus In-Kind Settlements: Implications for environmental protection

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Enforcement cases of U.S. Federal environmental statutes

Settlements can result in:

- Cash penalty (fine)
- In-kind penalty: defendant voluntarily agrees to undertake a Supplementary Environmental Project (SEP)
 - ➡ For example, river restoration, emergency equipment for fire department



Nexus between violation and SEPs

- Environmentally beneficial projects within 50-miles of violation location
- EPA encourages defendants to reach out to impacted communities for projects ideas
- Defendants are *encouraged* to consider SEPs in communities where there are *environmental justice* concerns



Aside: in the UK

- Enforcement Undertakings (Regulatory Enforcement and Sanctions Act 2008)
- But important differences :
 - Completely offset monetary penalty (80% in the US)
 - Project not necessarily led by the guilty party
 - Not reference to Environmental Justice issues
- Examples of Enforcement undertakings in the UK :
 - *United Utilities Water Limited will [...] contribute £264,000 to the Eden Rivers Trust*
 - *DB Cargo (UK) Limited will contribute 25,000 to Creekside Educational Trust and £25,000 to Thames21.*



This presentation

The economics of in-kind versus cash settlements:

- ✓ Outline costs and benefits of in-kind and cash
- ✓ Estimate impact on firm reputation (in-kind + cash > cash)
- ✓ Describe current use in alleviating environmental justice concerns
- ✓ Estimate welfare impacts from changing current allocation



Why it matters

- Deterrence: “key to provide best protection for the environment”, and reduces required resources (OECD, 2009)
- Several countries use cash settlements to enforce environmental laws
- OECD encourages use of in-kind settlements, modelled on US system

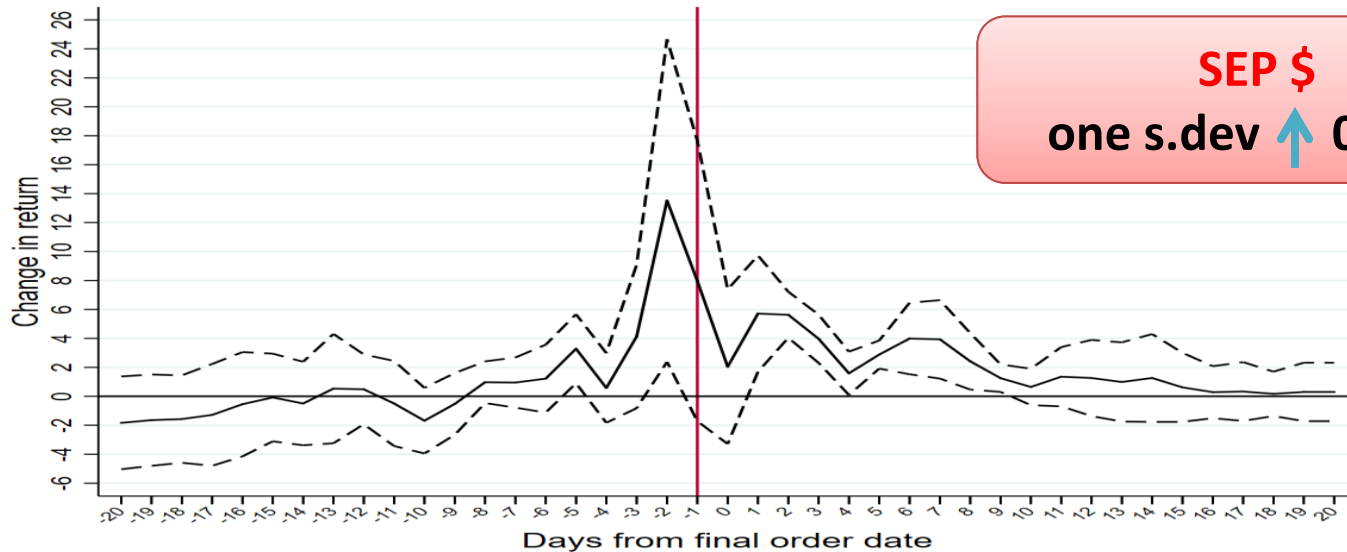
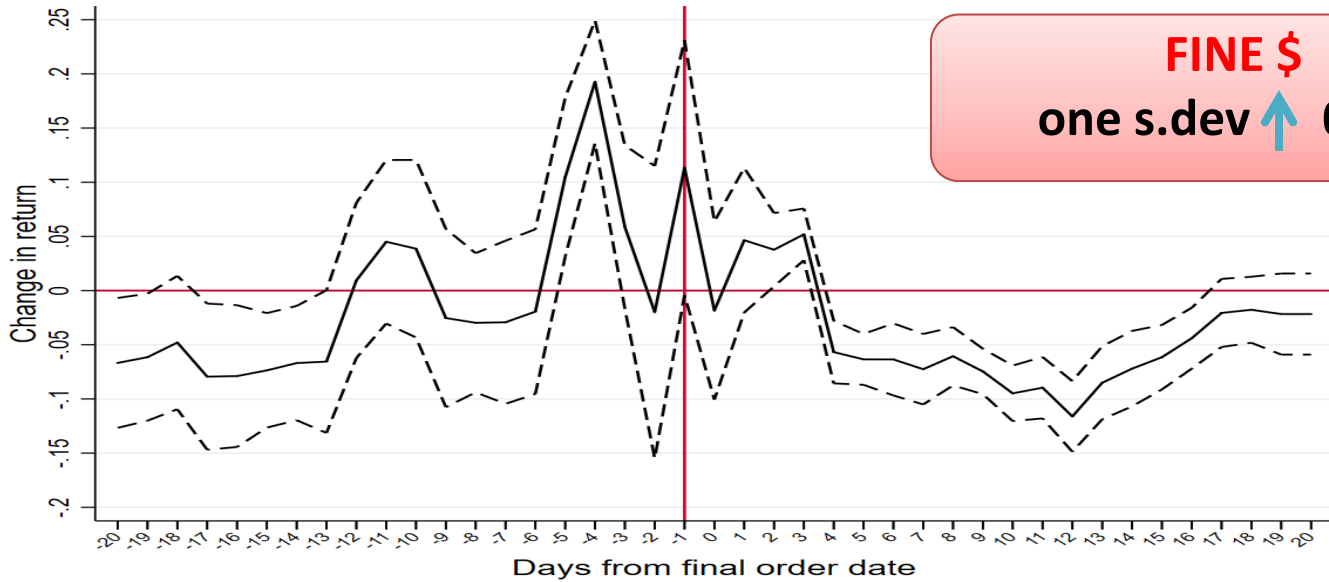


Data on environmental settlements

- EPA data on approx. 5,000 federal enforcement cases per year, 1997-2017
- Track all formal administrative and judicial enforcement actions taken by the EPA and by some states
- Describe enforcement case from start to conclusion



What is the impact on firm reputation? Analysis of stock-market returns

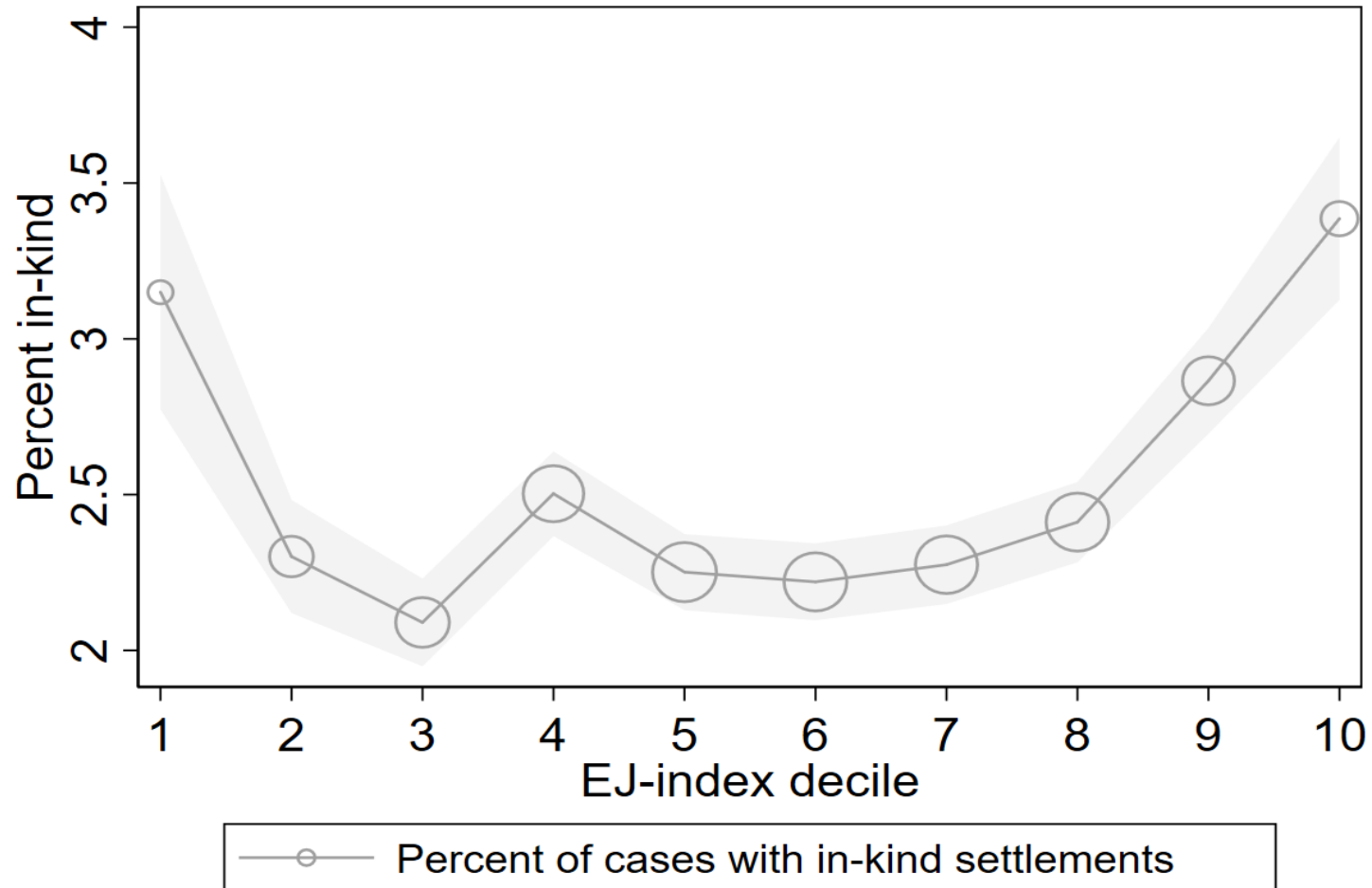


Can we do better?

1. Where are in-kind settlements going?
2. Are welfare improvements to be had from changing the current allocation?



Where are in-kind settlements going?

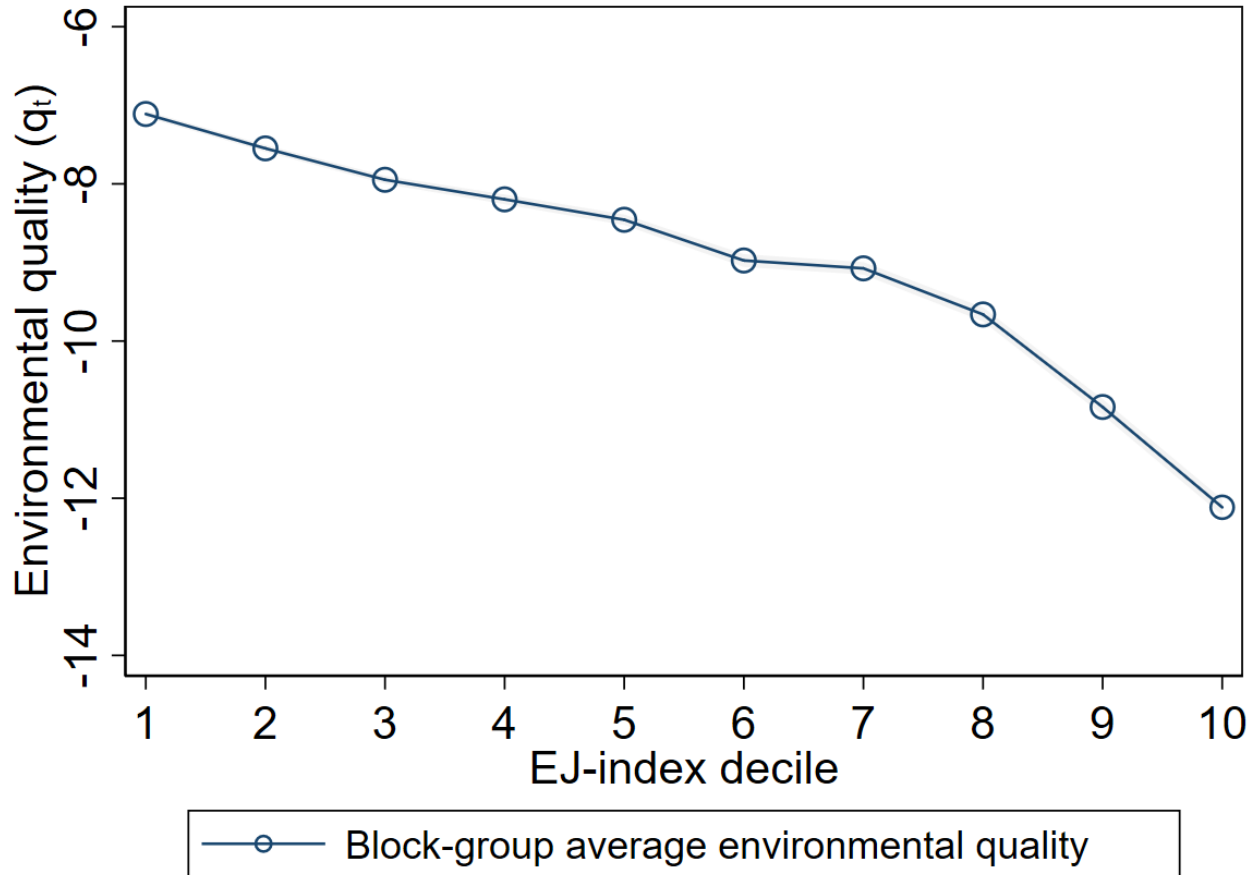


Can welfare be improved?

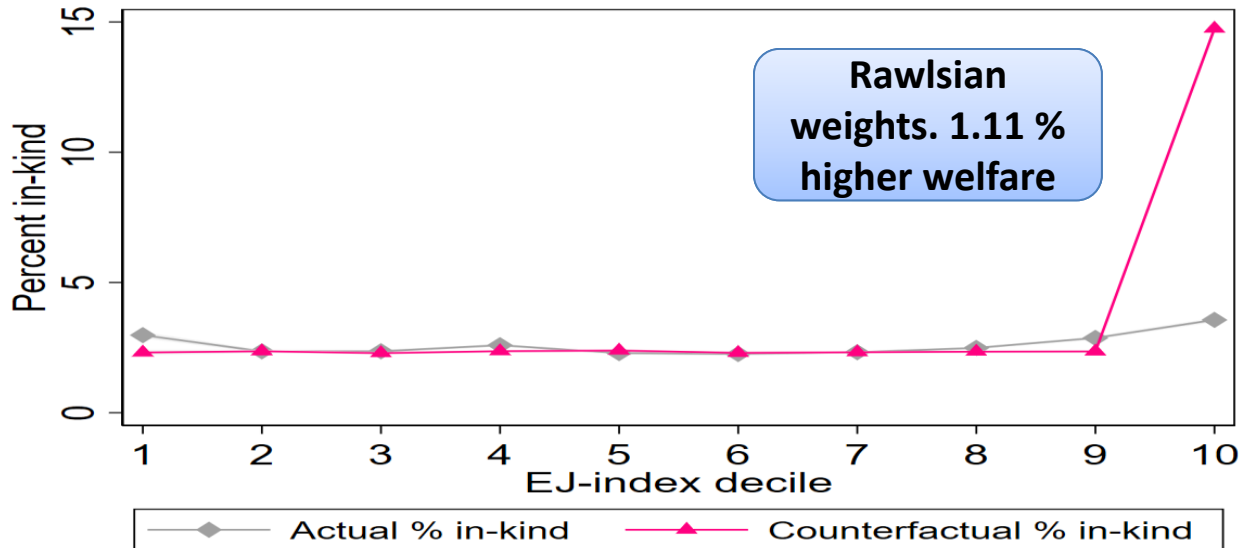
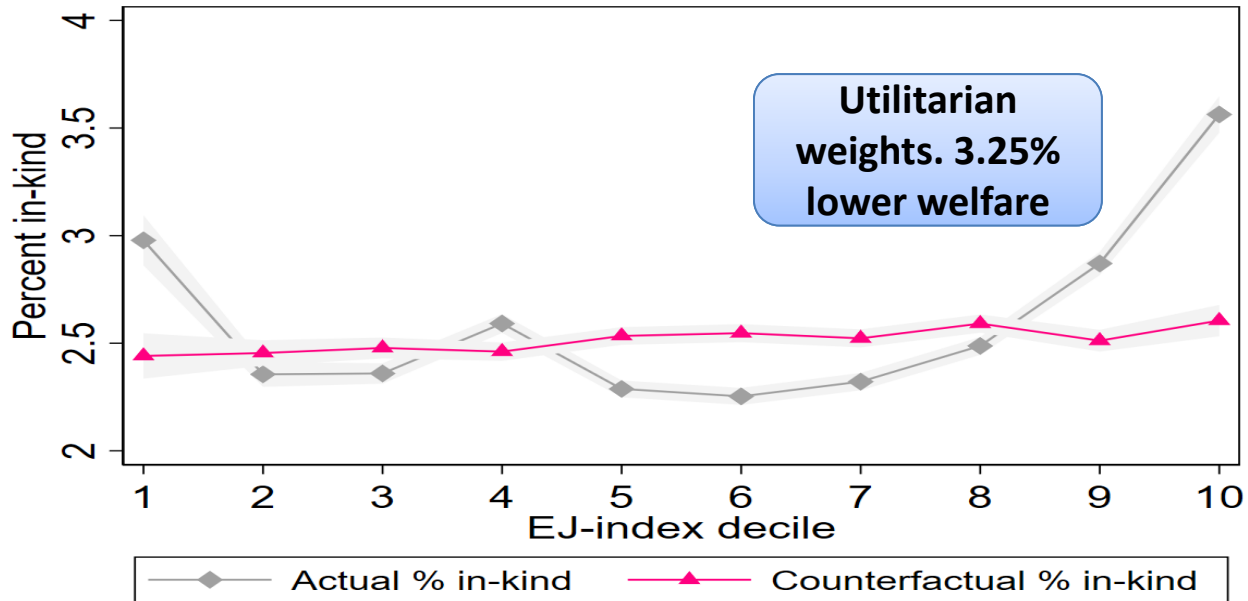
- Model decision from social planner perspective. 2 tradeoffs
 - Current-period tradeoff: environmental quality improvements in community versus cash to the US Treasury
 - Dynamic consequences: implications for deterrence and environmental quality in the future? ← stock-market analysis
- Estimate parameters in model:
 - Counterfactual simulation: What happens to allocation and welfare if we change parameters?



Environmental Quality by Environmental Justice



Counterfactual analysis



Preliminary Conclusions

- Stock-market analysis suggest that companies might benefit from mitigating cash penalty with in-kind settlement
- Potential reduction of deterrence impact of enforcement action
- Uptick in in-kind in high-EJ risk communities but also in low-risk
- Can improve welfare from more in-kind settlements in low income, minority communities





Thank you!

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