Self-policing, Self-reporting

- Many government programs encourage entities to self-police (monitor) and self-disclose legal violations to the regulator
  - Typical incentive: penalty mitigation

- Self-reporting theorized to reduce costs of detection, evasion and remediation

- Self-reporting programs often have a broader ambition to encourage ongoing internal compliance auditing
### Self-reporting programs

<table>
<thead>
<tr>
<th>Agency</th>
<th>Violations sought</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>US DoD</td>
<td>Procurement fraud</td>
<td>“Contractor Disclosure Program”</td>
</tr>
<tr>
<td>US HHS</td>
<td>Medicare-Medicaid violations</td>
<td>“Provider Self-Disclosure Protocol”</td>
</tr>
<tr>
<td>US FERC</td>
<td>License violations</td>
<td>“Self reports”</td>
</tr>
<tr>
<td>US EPA</td>
<td>Compliance violations</td>
<td>“Audit Policy”</td>
</tr>
</tbody>
</table>

Explicitly designed “to encourage self-policing”

to “promote [more] ethical and lawful conduct [in] the health care industry”

“detail the steps taken to cure the violation and to prevent any recurrence”

Designed to encourage environmental compliance auditing
US EPA’s Audit Policy

Objective and approach
- implement environmental auditing: “systematic, objective, and periodic”
- to encourage greater compliance with laws and regulations that protect human health and the environment
- encourage regulated entities to voluntarily discover, and disclose and correct violations of environmental requirements

Incentive
- Mitigates 75% or 100% of gravity-based (punitive) penalty for regulatory violations facilities self-disclose

Key conditions
- Self-disclosures must arise from: “systematic discovery of the violation through an environmental audit or the implementation of a compliance management system”
- Voluntary discloser must make assurances that it will “prevent recurrence of the violation”

Examples of compliance violations self-disclosed to the EPA Audit Policy

A manufacturing facility corrected Clean Air Act violations by installing pollution control equipment on two methanol storage tanks.

A telecommunication company alerted state agencies and local fire departments to the presence of batteries containing sulfuric acid at hundreds of sites nationwide, and the company developed spill prevention measures required by the Clean Water Act.
Research questions

Q1. What leads facilities to participate in the EPA Audit Policy?

Q2. When facilities self-disclose compliance violations, how does the regulator respond?

Q3. Does the Audit Policy achieve its ultimate objective of encouraging ongoing internal auditing? Under what circumstances?
Q1. What leads facilities to participate in the EPA Audit Policy?

Seeking to reduce regulatory pressure

1. To deter inspections, which are costly and risk penalties
   - Self-disclosing violations to Audit Policy can signal intent-to-comply, since EPA targeting considers facility’s “motivation” and “willingness to comply”
2. To reduce or waive penalties that would accrue if regulator were to discover the violation

H1. Facilities facing more regulatory pressure are more likely to self-disclose compliance violations.

Measures: two forms of regulatory pressure (Cohen 1987)
- Specific deterrence: Facility’s own compliance history
  Inspections, violations, penalties, enforcement actions
- Generic deterrence: Prioritized industries and activities
  EPA National Priority Sectors, EPA Compliance Incentive Programs

When afforded statutory protection

Self-disclosing violations from internal compliance auditing is risky
- Audit Policy conditions to waive penalties are subjective
- Violations might attract prosecution

State statutes can mitigate these risks
- Audit privilege laws prevent prosecutors accessing internal audit docs
- Immunity laws prevent prosecution based on self-disclosed violations

H2. Facilities whose internal or self-disclosed documents are afforded protection are more likely to self-disclose violations

Measures
- Facility located in a state with audit privilege
- Facility located in a state with immunity
Sample for today's analyses

Nationwide set of facilities subject to major environmental reg's:

- Regulated by RCRA, CAA, and/or TRI
- 13,000 – 19,000 facilities

Q1. What leads facilities to participate in the EPA Audit Policy?

Key results: Probit predicting self-disclosure to Audit Policy

<table>
<thead>
<tr>
<th>Specific deterrence</th>
<th>RCRA evaluations 1 year ago</th>
<th>0.048 [0.021]**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAA inspections 1 year ago</td>
<td>0.038 [0.019]*</td>
</tr>
<tr>
<td></td>
<td>RCRA violations 1 year ago</td>
<td>-0.005 [0.013]</td>
</tr>
<tr>
<td></td>
<td>CAA violations 1 year ago</td>
<td>0.040 [0.066]</td>
</tr>
<tr>
<td></td>
<td>Any enforcement actions 1 year ago</td>
<td>0.276 [0.063]**</td>
</tr>
<tr>
<td></td>
<td>CIP target and National Priority Sector</td>
<td>0.365 [0.124]**</td>
</tr>
<tr>
<td></td>
<td>CIP target but not National Priority Sector</td>
<td>1.358 [0.070]**</td>
</tr>
<tr>
<td></td>
<td>National Priority Sector but not CIP target</td>
<td>-0.047 [0.059]</td>
</tr>
<tr>
<td>General deterrence</td>
<td>CIP target in any prior year</td>
<td>0.529 [0.069]**</td>
</tr>
<tr>
<td>Information</td>
<td>State audit privilege</td>
<td>-0.005 [0.057]</td>
</tr>
<tr>
<td>Statutory provisions</td>
<td>State immunity</td>
<td>0.073 [0.052]</td>
</tr>
<tr>
<td>Controls</td>
<td>Log population density in 2000</td>
<td>0.031 [0.222]</td>
</tr>
<tr>
<td></td>
<td>Log per capita income in 1999</td>
<td>-0.007 [0.019]</td>
</tr>
<tr>
<td></td>
<td>Voter turnout in 2000</td>
<td>0.311 [0.258]</td>
</tr>
<tr>
<td></td>
<td>Log facility revenues in 1997</td>
<td>0.101 [0.019]**</td>
</tr>
<tr>
<td></td>
<td>Federal Circuit Court ideology</td>
<td>0.035 [0.263]</td>
</tr>
<tr>
<td></td>
<td>Industry fixed-effects</td>
<td>Included***</td>
</tr>
<tr>
<td></td>
<td>Year fixed-effects</td>
<td>Included***</td>
</tr>
<tr>
<td></td>
<td>US EPA region fixed-effects</td>
<td>Included***</td>
</tr>
</tbody>
</table>

Observations (facility-years)

Facilities 110,611
Log likelihood intercept only 17,464
Log likelihood full model -4502.70
Likelihood ratio -3899.28
McFadden’s pseudo R squared 1206.64***
Probability of disclosure evaluated at mean of all variables 0.13

Additional inspection increases the probability of self-disclosure the next year by 11-14%.

EPA Compliance Incentive Program targets became 4x more likely to self-disclose.

No evidence that privilege or immunity encouraged self-disclosure.

See Short & Toffel 2008 for more details.
Research questions

Q1. What leads facilities to participate in the EPA Audit Policy?

Q2. When facilities self-disclose compliance violations, how does the regulator respond?

Q3. Does the Audit Policy achieve its ultimate objective of encouraging ongoing internal auditing? Under what circumstances?

Q2. When facilities self-disclose compliance violations, how does the regulator respond?

Unclear how self-disclosures might affect inspection targeting

Self-disclosing a compliance violation via the Audit Policy includes a commitment to conduct internal auditing

- Does this convey self-policing (relax inspections) or signal poor compliance (increase inspections)?

EPA claims inspections are unrelated to self-policing

- “Auditing does not in any way serve as a substitute for compliance activities, nor does it replace regulatory agency inspections” (Johnson and Frey 2000)
- EPA Office of Enforcement Policy: “inspections play a major role in assuring quality and lending credibility to self-monitoring programs” (Wasserman 1990)

Opposing views from inspectors we interviewed

- “All else equal, I would inspect another facility if a company was trying to be cooperative with the agency by self-disclosing and self-policing.”
- “I would be pretty suspicious. Where there’s one violation, there’s usually more. I would want to go visit the facility.”
Q2. When facilities self-disclose compliance violations, how does the regulator respond?

**Empirical approach to examine impact of self-disclosing on inspections**

**Difference-in-differences approach**
- Identify matched set of self-disclosers and non-self-disclosers
- Compare annual inspections 2-years-before to 5-years-after disclosure (or match) year

**Outcomes**
- Probability of at least 1 inspection each year (CFE logistic regression)
- Number of inspections each year (CFE negative binomial regression)

**Controls**
- Years since last inspection
- Violations and enforcement actions last year
- National Priority sector
- Compliance Incentive Program target
- Facility-level (conditional) fixed effects

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### Empirical results: inspectors reduce scrutiny over self-disclosers

<table>
<thead>
<tr>
<th></th>
<th>(1) Conditional Fixed-Effects Logistic Any annual inspections Coefficients</th>
<th>(2) Conditional Fixed-Effects Negative Binomial Number of annual inspections Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post voluntary disclosure</td>
<td>-0.303** 0.74</td>
<td>-0.185** 0.83</td>
</tr>
<tr>
<td>2 years since last inspection</td>
<td>0.372** 1.45</td>
<td>0.125** 1.13</td>
</tr>
<tr>
<td>3 years since last inspection</td>
<td>0.537** 1.71</td>
<td>0.223** 1.26</td>
</tr>
<tr>
<td>4 or more years since last inspection</td>
<td>1.777** 3.25</td>
<td>0.618** 1.86</td>
</tr>
<tr>
<td>Number of violations 1 year ago</td>
<td>0.157* 1.17</td>
<td>0.026 1.03</td>
</tr>
<tr>
<td>Number of violations 2 years ago</td>
<td>0.035* 1.04</td>
<td>0.010 0.99</td>
</tr>
<tr>
<td>Any enforcement actions 1 year ago</td>
<td>-0.142 0.87</td>
<td>0.062 1.00</td>
</tr>
<tr>
<td>Any enforcement actions 2 years ago</td>
<td>-0.185 0.83</td>
<td>0.021 0.98</td>
</tr>
<tr>
<td>Compliance Incentive Program target</td>
<td>0.049 1.05</td>
<td>0.010 1.04</td>
</tr>
<tr>
<td>National Priority sector</td>
<td>0.282** 1.33</td>
<td>0.102** 1.11</td>
</tr>
<tr>
<td>Log total CAA penalties in the state-year</td>
<td>0.015 1.01</td>
<td>-0.012** 0.99</td>
</tr>
<tr>
<td>Log number of CAA-regulated facilities in the state-year</td>
<td>1.509* 4.02</td>
<td>0.623** 1.87</td>
</tr>
<tr>
<td>Facility-level conditional fixed effects</td>
<td>included</td>
<td>included</td>
</tr>
<tr>
<td>Fixed effects for years before/after match year</td>
<td>included</td>
<td>included</td>
</tr>
<tr>
<td>Prior year fixed effects (1994-2005)</td>
<td>included</td>
<td>included</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Observations</th>
<th>Facilities</th>
<th>Wald chi-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>82,287</td>
<td>13,673</td>
<td>2782.4**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>94,270</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16,078</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1735.2**</td>
</tr>
</tbody>
</table>

Self-disclosers faced a 26% decrease in the probability they’d be CAA inspected in a given year.

Self-disclosers faced a 17% decline in annual number of CAA inspections.

See Toffel & Short 2011 for more details.
Research questions

Q1. What leads facilities to participate in the EPA Audit Policy?

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Q3. Does the Audit Policy achieve its ultimate objective of encouraging ongoing internal auditing? Under what circumstances?

Regulators hope so…
- Policy designed to encourage auditing to improve compliance

Firms want their commitment-to-audit to appear credible
- To convey that they are self-policing so inspectors don’t need to visit as often
Q3. Does the Audit Policy achieve its ultimate objective of encouraging ongoing internal auditing?

Empirical approach: Two outcomes to triangulate our evaluation

1. Improved compliance record?
   - Whether inspection result is “clean”
     - Clean Air Act inspection that yields no violations
   - Conditional FE logistic regression

2. Fewer abnormal events?
   - Number of abnormal releases of toxic chemicals (TRI):
     - “events not associated with normal or routine production processes”
   - Conditional FE negative binomial regression

<table>
<thead>
<tr>
<th>Data from regulator</th>
<th>Data self-reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process metric</td>
<td>Regulatory compliance</td>
</tr>
<tr>
<td>Outcome metric</td>
<td>Abnormal events</td>
</tr>
</tbody>
</table>

Results: On average, compliance improved & abnormal releases declined

Comparing self-disclosers to matched non-disclosures, pre-2-years to post-5-years...

Probability that an inspection yielded no violations increased significantly after self-disclosing
   - 84.6% to 92.0% (on average)

Self-disclosing facilities’ annual number of abnormal releases significantly declined
   - By 20%, from 1.2 to 0.96 per year (on average)

See Toffel & Short 2011 for more details.
Q3. Does the Audit Policy achieve its ultimate objective of encouraging ongoing internal auditing?  

Under what circumstances? Results

Which self-disclosers are most likely to improve compliance?  
- Those that are heavily monitored:  
  2+ inspections in prior 2 years  
  above-average inspections-per-facility/state in prior year  
- Those not facing a direct regulatory threat:  
  not targeted by a U.S. EPA Compliance Incentive Program

Which self-disclosers were least likely to improve compliance?  
- Those with poor compliance history  
  1+ violation within prior 2 years (ICIS or AIRS)

Regression results from split samples. See Short & Toffel 2010

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Summary

Q1. What leads facilities to participate in the EPA Audit Policy?  
- More heavily monitored  
- Directly targeted by EPA Compliance Incentive Program or Nat’l Priority Sector  
- Directly informed via EPA Compliance Incentive Program  
- No evidence that privilege or immunity encouraged self-disclosure

Q2. When facilities self-disclose compliance violations, how does the regulator respond?  
- Inspection probability and frequency declined

Q3. Does the Audit Policy achieve its ultimate objective of encouraging ongoing internal auditing?  
- On average: Compliance improved & abnormal releases declined  
- Especially among heavily monitored facilities, not facing a direct regulatory threat  
- Compliance worsened among facilities with poor compliance history

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