

The regulator's role in encouraging self-policing: Evidence from the EPA's Audit Policy

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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
(Kaplow and Shavell 1994, Innes 2001, Innes 1999)
- Self-reporting programs often have a broader ambition to encourage ongoing internal compliance auditing

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Self-reporting programs

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

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Self-reporting programs Broader ambition to drive ongoing internal auditing

<u>Agency</u>	<u>Violations sought</u>	<u>Program</u>
US DoD	Procurement fraud	“Contractor Disclosure Program” Explicitly designed “to encourage self-policing”
US HHS	Medicare-Medicaid violations	“Provider Self-Disclosure Protocol” to “promote [more] ethical and lawful conduct [in] the health care industry”
US FERC	License violations	“Self reports” “detail the steps taken to cure the violation and to prevent any recurrence”
US EPA	Compliance violations	“Audit Policy” Designed to encourage environmental compliance auditing

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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”

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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.

U.S. Environmental Protection Agency (1999)

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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?

Research questions

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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

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

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

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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
- 1993 – 2003 [pre- and post- 1997 Audit Policy launch]

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

Key results: Probit predicting self-disclosure to Audit Policy

Specific deterrence	RCRA evaluations 1 year ago	0.048 [0.021]**	Additional inspection increases the probability of self-disclosure the next year by 11-14%
	CAA inspections 1 year ago	0.038 [0.019]*	
	RCRA violations 1 year ago	-0.005 [0.013]	
	CAA violations 1 year ago	0.040 [0.066]	
General deterrence	Any enforcement actions 1 year ago	0.276 [0.063]***	EPA Compliance Incentive Program targets became 4x more likely to self-disclose
	CIP target and National Priority Sector	0.365 [0.124]***	
	CIP target but not National Priority Sector	1.358 [0.076]***	
	National Priority Sector but not CIP target	-0.047 [0.059]	
Information	CIP target in any prior year	0.528 [0.059]***	No evidence that privilege or immunity encouraged self-disclosure
Statutory provisions	State audit privilege	-0.005 [0.057]	
	State immunity	0.073 [0.052]	
Controls	Log population density in 2000	0.031 [0.222]	
	Log per capita income in 1999	-0.007 [0.019]	
	Voter turnout in 2000	0.311 [0.258]	
	Log facility revenues in 1997	0.101 [0.019]***	
	Federal Circuit Court ideology	0.035 [0.263]	
	Industry fixed-effects	Included***	
	Year fixed-effects	Included***	
Observations (facility-years)	US EPA region fixed-effects	Included***	
Facilities		110,611	
Log likelihood intercept only		17,464	
Log likelihood full model		-4502.70	
Likelihood ratio		-3899.28	
McFadden's pseudo R-squared		1206.84***	
Probability of disclosure evaluated at mean of all variables		0.13	
		0.0038	

See Short & Toffel 2008 for more details.

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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.”

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

Empirical results: inspectors reduce scrutiny over self-disclosers

	(1) Conditional Fixed-Effects Logistic Any annual inspections		(2) Conditional Fixed-Effects Negative Binomial Number of annual inspections	
	Coefficients	Odds Ratio	Coefficients	Incident Rate Ratios
Post voluntary disclosure	-0.303** [0.114]	0.74	-0.185** [0.052]	0.83
2 years since last inspection	0.372** [0.023]	1.45	0.126** [0.011]	1.13
3 years since last inspection	0.537** [0.031]	1.71	0.231** [0.018]	1.26
4 or more years since last inspection	1.177** [0.032]	3.25	0.618** [0.018]	1.86
Number of violations 1 year ago	0.157* [0.071]	1.17	0.026 [0.027]	1.03
Number of violations 2 years ago	0.035 [0.067]	1.04	-0.010 [0.027]	0.99
Any enforcement actions 1 year ago	-0.142 [0.087]	0.87	0.002 [0.035]	1.00
Any enforcement actions 2 years ago	-0.185+ [0.099]	0.83	-0.024 [0.046]	0.98
Compliance Incentive Program target	0.049 [0.045]	1.05	0.049* [0.020]	1.05
National Priority sector	0.282** [0.034]	1.33	0.102** [0.020]	1.11
Log total CAA penalties in the state-year	0.013 [0.008]	1.01	-0.012** [0.004]	0.99
Log number of CAA-regulated facilities in the state-year	1.390** [0.102]	4.02	0.623** [0.042]	1.87
Facility-level conditional fixed effects	Included		Included	
Fixed effects for <i>t</i> years before/after match year	Included		Included	
Year fixed effects (1994-2003)			Included	
Observations	82,287		94,270	
Facilities	13,673		16,078	
Wald chi-squared	2782.4**		4733.2**	

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

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

See Toffel & Short 2011 for more details.

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

Do facilities that disclose violations honor their commitment to audit?

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

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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

	Data from regulator	Data self-reported
Process metric	Regulatory compliance	
Outcome metric		Abnormal events

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

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.

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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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For more information...

Short and Toffel. 2008. Coerced confessions: Self-policing in the shadow of the regulator. *Journal of Law, Economics & Organization* 24(1): 45-71.

Short and Toffel. 2010. Making self-regulation more than merely symbolic: The critical role of the legal environment. *Administrative Science Quarterly* 55(3): 361-339, 2010.

Toffel and Short. 2011. Coming clean and cleaning up: Does voluntary self-reporting indicate effective self-policing? *Journal of Law & Economics* 54(3): 609-649.