Enforcement Economics:

Deterrence, Economic Benefit, Ability to Pay

Presentation to SWRCB
Enforcenomics Workshop

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Presentation Summary

- Behavior with regard to environmental compliance:
  - Businesses
  - Public agencies
- Enforcenomics:
  - Environmental penalties in the matrix of legal judgments
  - Financial indifference vs. deterrence
  - Statutory factors
- Economic benefit controversies:
  - Typical disputes (generalized and case-specific)
  - Case law
- Implementation of enforcenomics:
  - U.S. EPA computer models
  - Role of expert witness in calculating penalties

Business Behavior and Environmental Compliance

- Neoclassic perspective: businesses maximize profit
- Competitive markets entail price-taking
- Opportunity costs of capital
- Lack of financial return on typical compliance controls
- Enforcement typically against low-profile companies
- Enforcement actions are typically low-profile

Public Agency Behavior and Environmental Compliance

- Competing demands, missions
- Constraints on budget, taxation, rates, etc.
- Political and reelection pressures
- Who bears pollution costs:
  - Constituents vs. others
  - Differences within constituents
- Who pays control costs:
  - Taxpayers
  - Ratepayers
  - Outside assistance

Matrix of Legal Judgments

- Economic calculations in commercial litigation calculate the difference between two scenarios:
  - non-breach/non-injury hypothetical “but-for” scenario
  - breach/injury or “actual” scenario
- Alternative measures can be derived depending on whether the scenarios are constructed:
  - from vantage point of breaching vs. injured party
  - whether non-breach/non-injury scenario is defined as if the two parties had never been brought into contact with each other vs. having consummated or continued the relationship or contract

Figure 1: Conceptual Matrix of Alternative Measures for "But-For" Scenario Specification		Vantage Point:	
		Breaching Party / Defendant	**Injured Party / Plaintiff**
Non-Breach / Non-Injury Scenario:	**Contract-Deal-Relationship Consummated or Continued**	*Restitution / Disgorgement / Unjust Enrichment*	*"Expectancy" Damages / "Benefit of the Bargain"*
	Parties Never Met or Entered into Any Relationship	*Restitution / Disgorgement / Unjust Enrichment*	*"Reliance" Damages / "Promissory Estoppel"*

Figure 2: Possible Interpretation of Legal Goals		Vantage Point:	
		Breaching Party / Defendant	**Injured Party / Plaintiff**
Non-Breach / Non-Injury Scenario:	**Contract-Deal-Relationship Consummated or Continued**	*Prevent defendant from gaining by not consummating or continuing contract-deal-relationship*	*Prevent plaintiff from missing out on benefits of contract-deal-relationship*
	Parties Never Met or Entered into Any Relationship	*Prevent defendant from gaining via initial contact with plaintiff*	*Prevent plaintiff from losing out by having initially entered into contract-deal-relationship*

Figure 7: Civil Penalty - Environmental Regulatory Enforcement		Vantage Point:	
		Breaching Party / Defendant	**Injured Party / Plaintiff**
Non-Breach / Non-Injury Scenario:	**Contract-Deal-Relationship Consummated or Continued**	*Savings from not having operated facility in compliant manner*	*Harm to human health and the environment, plus damage to the regulatory scheme*
	Parties Never Met or Entered into Any Relationship	*Profits from operating facility (vs. shutdown or never having started operations)*	*[Same as above.]*

Economic Benefit Controversy: Generalized Issues

- Discount Rate / Cost of Capital
- “Unsuccessful” “compliance” attempts
- “Wrongful profits”

Economic Benefit Controversy: Case-Specific Issues

- Compliance scenarios
- Cost estimates
- Noncompliance date
- Compliance date

Case Law

- Reasonable approximation standard
- Dean Dairy case
- Smithfield Farms case

Enforcenomics Implementation: U.S. EPA BEN Model

- Calculates the economic benefit of pollution control noncompliance
- Applicable to:
  - Delayed capital and one-time costs
  - Avoided capital and one-time costs
  - Avoided annual O&M costs
- Many types of cases can go beyond the BEN model:
  - Revenues increased rather than costs decreased
  - “Acts of commission” vs. “Acts of omission”
  - Frequently seen in wetlands cases

Enforcenomics Implementation: U.S. EPA PROJECT Model

- Calculates the after-tax net present value of Supplemental Environmental Projects (“SEPs”)
- SEPs are essentially no longer viable because of recent IRS actions

Enforcenomics Implementation: U.S. EPA ABEL Model

- Screening tool for ability to pay (“AtP”) of companies
- Based on tax returns
- Looks at only one measure of AtP: solvency
- Looks at only one measure of solvency: cash flow
  - Projects cash flow for the next five years
  - Using statistical distribution
  - Compares present value to sought expenditures
- Performs ratio analysis, but does not affect results

Enforcenomics Implementation: U.S. EPA INDIPAY Model

- Screening tool for AtP of individuals
- Based on tax returns + financial data request form
- Provides two alternative AtP tests:
  - Ability to generate cash flow in excess of living expenses
  - Ability to take on debt payments within X% of income
- Examines net worth, but provides no conclusions
- Provides various flags for issues to investigate
- Retiree loops works much differently

Enforcenomics Implementation: U.S. EPA MUNIPAY Model

- Screening tool for municipal and other local gov't AtP
- Calculates currently available resources
- Calculates additional debt capacity:
  - Multiple constraint model
  - Ratio analysis at government level
  - Burden assessment at household level
- Two entity types, for payment via:
  - General Fund and higher property taxes
  - Enterprise Fund and higher user rates
- Also, sociodemographic comparison, but no conclusions

Enforcenomics Implementation: U.S. EPA Helpline

- For all federal and state environmental enforcement staff
- Free!
- Phone is best:
  - 888-ECONSPT
  - 888-326-6778
- Email:
  - BenAbel@indecon.com
  - Spam issues, so best to call first