

Complexity, Capacity, and Capture: The Political Economy of Regulation and Self-Regulation of a Complex Industry

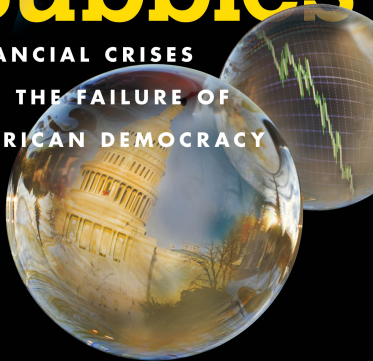
Nolan McCarty

Princeton University

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Political Bubbles

FINANCIAL CRISES
AND THE FAILURE OF
AMERICAN DEMOCRACY



Nolan McCarty, Keith T. Poole,
& Howard Rosenthal

Regulating Flash Crashes

- On May 6, 2010, the Dow Jones Industrial Average lost 900 points in minutes.
- The belief that this “flash crash” was exacerbated by high frequency trading led to consideration of circuit breakers that would stop trading in securities whose price had fluctuated too much.
- The exchanges and their private regulator Financial Industry Regulatory Authority (FINRA) moved first to formulate rules for circuit breakers.
- The SEC therefore had the following choices:
 - Accepting the FINRA standards
 - Modifying them in various ways
 - Developing different ones from scratch.

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- Accepting the FINRA standards leads to the regulatory outcome targeted by the industry.
- Modifying the proposal would lead to outcomes that are closer in expectation to the SEC's preferences. But because of the SECs limited expertise and capacity, changes in the target outcome may have unintended consequences.
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- Complexity
- Public regulation often builds upon internal controls and self-regulation of firms
- Interest group influence or “capture”

Complex Policy Domains

- Bureaucrats find it very difficult to establish autonomous sources of information about the consequences of different policies.
- Highly dependent on regulated firm or interest group
 - Government cannot afford "talent"
 - Educational/social ties
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- One dimensional *outcome* space X
- Each actor has an “ideal” outcomes reflecting a trade-off between social and private cost/benefits (a , l , and f)
- Utility of outcome x for player i is $-(x - i)^2$.
- $f > l$ – firm prefers higher policies than principal

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 - An non-expert cannot observe an experts efforts to implement x and use that information to precisely implement some other policy x'
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- $d = |x - x'|$ the extent to which uncertainty is enhanced by modifying the firm's policy choice.
- κ – the extent to which increasing d magnifies uncertainty of the outcome. κ has two interpretations 1) a measure of complexity 2) regulator capacity

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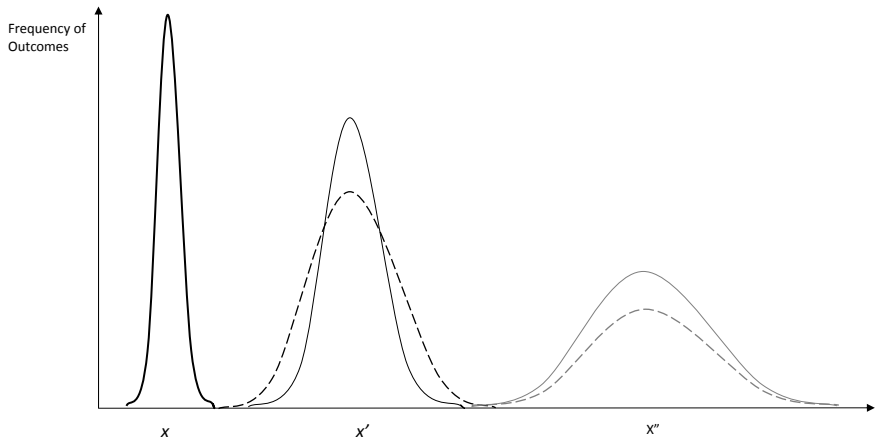


Figure: Policy Outcome Distributions

Principal's choices

- Unregulated
- Banned
- Regulated

- The firm is free to choose its preferred target policy.
- The firm chooses e to maximize its own expected payoff
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- Two cases
 - Regulator revision
 - Regulator acceptance
- In revision case, the final policy target is a weighted average of a and $x_f - \kappa$
- Weights are $1 + e$ and θ respectively.

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Observations About Revision Case

- Final policy target is a weighted average of a and f with weights $1 + e$ and θ .
- Two sources of rent to the firm:
 - Agency rent increasing in a
 - Complexity rent increasing in θ
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Firm Investment and Final Target Policy

The optimal level information gathering by the firm is

- 1 weakly increasing in the agency's ideal point a
- 2 increasing in the baseline policy uncertainty θ
- 3 weakly decreasing in κ
- 4 decreasing in the marginal cost of effort.

The Principal's Choice of Agency Preferences

- The final target policy is a weakly increasing function of a while the outcome variance is a weakly decreasing function of a .
- If a technical condition is met, the principal's optimal agency ideal point a^* is strictly between l and \bar{a} (a threshold beyond which the legislature would prefer deregulation).
- The principal delegates to a pro-firm agency

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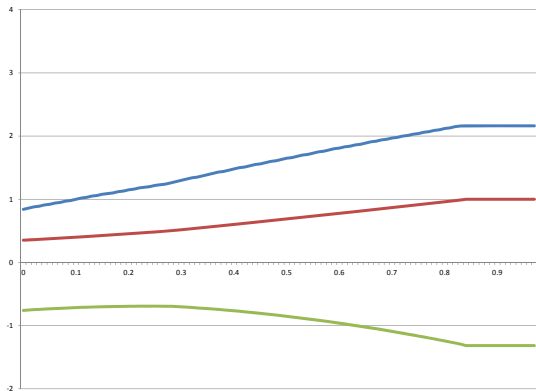


Figure: $\theta = 1, \gamma = .1, \kappa = .5$

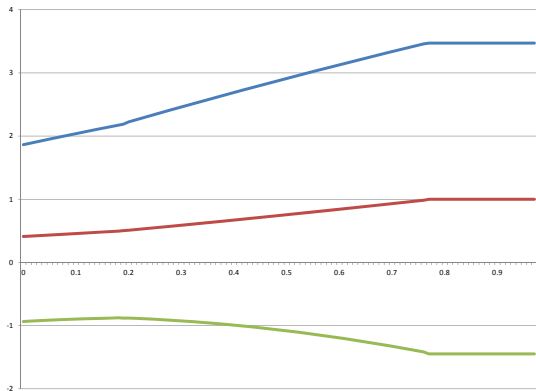


Figure: $\theta = 2$, $\gamma = .1$, $\kappa = .5$

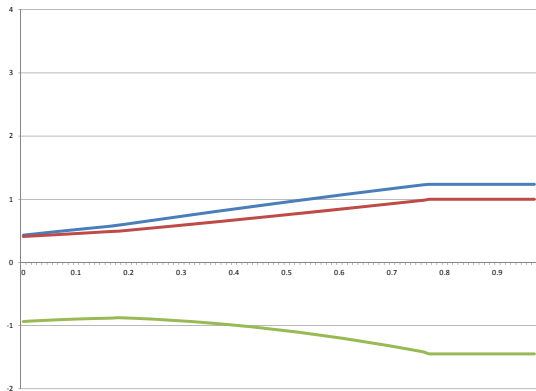


Figure: $\theta = 1, \gamma = .2, \kappa = .5$

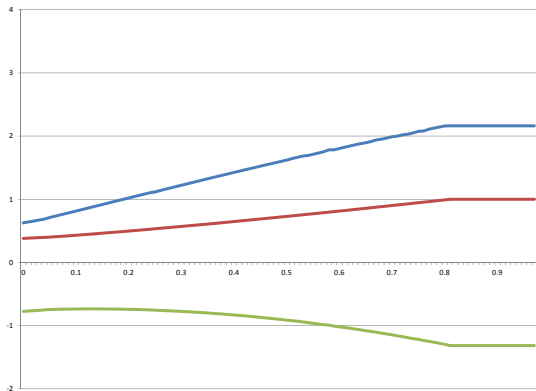


Figure: $\theta = 1, \gamma = .1, \kappa = .6$

Regulatory Capture

- Firm chooses e and then offers the agency a contract $\{x_c, b\}$ where x_c is a policy target and b is a transfer of resources.
- If the agency accepts the contract, it accepts target x_c and receives the bribe. If it rejects the contract, it chooses x_a optimally given x_c .
- Absent the effects of uncertainty and complexity, the equilibrium outcome in a spatial bribery game is $\frac{1+a}{2}$

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In the subgame perfect Nash equilibrium of the capture model, the following statements are true:

- 1 x_C^* is more biased to the firm than the no capture case
- 2 x_C^* increases in θ
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Capture tends to shift policy towards firm, but other comparative statics are the same.

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Information Investment by Agency

- Let $e = e_f + e_a$
- Investments are pure public goods – one agent will free ride and choose $e_i = 0$
- If γ_a is sufficiently low, the agency will be the investors
- Relationship between a and e flips
- Principal no longer wants a pro-firm agency

Too Complex to Jail

- Model can be extended/reinterpreted to explain lack of prosecution of financial crimes
- Some firm target policies are illegal
- Because of uncertainty in implementation, regulator does not know whether bad outcome is due to illegal behavior or bad luck
- Great firm investment in monitoring of units therefore makes criminality easier to detect
- Firms will underinvest in detection unless there is some forbearance.

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Conclusions

- Policies in complex domains will be biased towards the preferences of the firm.
- Principal may have incentives to bias the preferences of the agency even towards those of the firm if doing so raises the agency's ability to extract information.
- Substantial pro-firm biases may be part of an optimal regulatory design and be fully consistent with democratic control of the agency.
- Implications for how social scientists conceptualize and measure capture as well as arguments for the appropriate design of agency procedures.

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