Good Regulatory Mandates

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- Implementation of policy often delegated to agency
- What sort of mandate should it be given?
- Variety of literature based on control of agency by principal – we ignore these and focus on fundamentals of delegation
- Application to ‘enforcement’, but applicable more generally to policy delivery

Two broad families of instruments;

- **Target-driven:** give ‘hard’ performance target and let budget adjust

- **Budget-driven:** give ‘hard’ budget, and let performance adjust

In context of environmental enforcement

- **Target-driven:** reduce total pollution to X at least cost
- **Budget-driven:** get pollution as low as possible with budget B
- Both observed in use, plus various hybrids.

- In enforcement models scant attention paid to objective functions – arbitrary choice at start of model

- Natural to suppose that two problems are **dual**.

- If under a budget-driven mandate we find that hard budget B leads to realised performance X, then setting X as hard performance target should lead to realised enforcement costs B.

- This turns out not to be the case when number of firms > 1.

- Firms ‘compete’ to deflect attention of regulator. Changing mandate changes qualitatively the nature of that competition.

- This allows for ranking of mandates

Motivating example

- Lots of firms, pollution decision binary (compliant or non-compliant, C or NC).
- Regulator observes aggregate (ambient) pollution.
- Inspector visits firms sequentially (inspection costly) and enforce against NC's (enforcement cost).
- Enforcement (a) puts firm back into compliance and (b) imposes penalty.

Mandate 1: Budget-driven.

- Regulator visits firms at random – enforces against NC's – until budget exhausted.
- The higher the fraction of NC's in population the lower probability of inspection at any particular firm.
- Decision by A to violate makes it **less** likely violation by firm 2 will be penalised.
- Safety in numbers. Game in **strategic complements**.
- We say that compliance by A imposes a negative **regulatory overspill** on B.

Mandate 2: Performance-driven

- Regulator visits firms at random – enforcing against NC's – until performance-target is satisfied.
- The higher the fraction of NC's in the population higher probability of inspection at any particular firm.
- For example, say target is to ensure only 3 firms are NC. If there is initially X>3 NC's then probability that any particular NC will be penalised is (X-3)/X which is increasing in X.
- Decision by A to violate makes it **more** likely violation by firm 2 will be penalised.

- Danger in numbers. Game in **strategic substitutes** – violation by A makes violation by B more likely.

- We say that compliance by A imposes a **positive regulatory** overspill on B.

- Change in mandate of regulator changes fundamentally the nature of the game played between firms.
- Structural **elements of enforcement setting** combine with **mandate** to determine nature of interaction amongst firms.
- Some complexity, but in broad class of cases strategic substitutability shown to be desirable (positive regulatory overspills).
- Allows for ranking of mandates in given enforcement setting.
- Implications for applied work

What we do in the paper …

- Develop these sorts of arguments more formally in the context of (a) a worked example (version of that described above) and (b) a general setting.

- Benefits from positive regulatory overspills – same pattern of compliance can be delivered at lower cost.

- How to generate them depends on characterstics of enforcement environment.

- Take-away policy implication: where positive regulatory overspills reinforce incentives for compliance (broad set of cases) **target-driven mandates better**.