Lecture 9:

Public Organization II

Competition and Incentives

• Here, I look at two issues which abstract from ownership concerns.
  – Incentive Design
  – Role of Competition

• Key questions
– Are there any differences between incentives for the provision of public goods and private goods?

– Does competition serve the same as in markets for private goods:
3 paradigms for competition

- Business stealing – interdependence of demand
  - generates cost efficiency?
  - keeps prices low and hence maximizes social surplus

- Liquidation threats
  - good for cost minimization

- Matching
- labor markets
- product markets
Literature

- Standard principal agent problems:
  - Agents motivated by money
  - Effort unobservable
  - High powered incentives bring forth effort

- New Public Management applied this paradigm in public services
What is the NPM?

- Two components (Barzelay)

- Administrative Philosophy:
  - Hands-on Management
  - Focus on Results
  - Consumer Orientation
  - Stress on Transparency and Accountability

- Style of Organizing Public Services
– Executive Agencies

– Contracting Out

– Quasi-markets
What is the NPM a reaction to?

• Traditional bureaucratic model of service provision:
  – limited incentives
  – limited choice
  – centralization
The Whitehall Village


- “The traditional picture of a village world regulated in a relatively informal way through largely unwritten rules, a compliance culture and low relational distance between regulator and regulate still appeared to capture much of the style of regulation within Whitehall a quarter of a century after Heclo and Wildavsky's study.” (page 73) (from Hood et al).

- The NPM and its variants are reacting to this model.
Reasons to question NPM

• Non-standard Principal agent concerns
  – Multi-tasking
  – Intrinsic motivation
  – Sorting
  – Career concerns

• Empirical evidence on incentives even in private organization is weak.
Competition and Incentives (private sector)

- Theoretical effects are ambiguous
  - Hart/Scharfstein – effects of rents
  - Schmidt – liquidation effect

- Some empirical evidence:
Empirical evidence on Competition and Incentives in the Public Sector

- Schools are an important/interesting example

- Do schools perform better when they face more competitors?

- Hoxby’s work for the U.S. is very influential

- Burgess-Propper-Wilson for the U.K.
What is special about public sector incentives?

- Missions – organizations pick and deliver missions for providing public services

- Motivation – Principals and agents are motivated by standard concerns such as money, but also have some independent preference for the value of the mission.

- Matching – decentralization can raise efficiency by decentralizing missions and allowing principals and agents to sort together on the basis of their mission preferences.
SocZiation and Incentives

• Identity in organizations – Akerlof/Kranton

• Organizations shape views and modes of working
  – Max Weber: “An office is a vocation. Entrance into an office is an acceptance of the fealty to the purpose of the office.”

• Akerlof/Kranton
  – “If (Weber’s) observation reflects the behavior of most jobholders, the standard economic theory of behavior in organizations (principal-agent theory) has missed most of what causes them to function.”
A Simple Model of Competition and Incentives with Motivated Agents

- A firm consists of a risk neutral principal and an agent who is needed to carry out a project.

- The project’s outcome is high ($Y_H = 1$) or low ($Y_L = 0$).

- The probability of the high outcome is the effort supplied by the agent, $e$, at a cost $c(e) = e^2/2$.

- Effort is unobservable and hence non-contractible.

- The agent has no wealth which can be used as a performance bond.
• There are different kinds of principals (can be thought of output with different missions)

• Agents get $\theta > 0$ from working for the “right” principal and zero otherwise.

• Principal gets $\pi > 0$ from produce the high outcome

• Principals and agents match and then principals offer agents incentive contracts
Contracts

- Fixed wage – $w$
- Bonus – $b$
- Outside option – $\bar{u}$
Optimal Contracts

\[
\max_{e,b,w,x} v^p = \pi e - \{eb + w\} \quad (1)
\]

subject to:

- LLC

\[
b + w \geq 0, w \geq 0 \quad (2)
\]
• VP

\[ v^a = e (b + \gamma \theta) + w - \frac{1}{2} e^2 \geq \bar{u} \]  

(3)

• ICC

\[ e = \arg \max_{e \in [0,1]} \left( e (b + \gamma \theta) + w - \frac{1}{2} e^2 \right). \]

where \( \gamma = 1 \) principal and agent are matched.
Solution I: Bonus Payments

- Key observation:
  - Basic wage is at the subsistence level – anything else is paid as a bonus
  - Bonus is:
    $$b^* (\gamma) = \max \left\{ \sqrt{2\psi} - \gamma \theta, 0 \right\}$$
    where $$\psi = \max \left\{ \bar{u} - w, \frac{1}{8} (\omega)^2 \right\}$$ and $$\omega = \max (\gamma \theta, \pi) + \gamma \theta$$.
  - Effort is
    $$e^* (\gamma) = b^* (\gamma) + \gamma \theta < \pi + \gamma \theta.$$
Four cases:

1. Agent is more motivated than the principal and the outside option is low, then $b^* (\gamma) = 0$ – no incentive pay!

2. Principal is more motivated than the agent and the outside option is low, then incentive pay decreasing in agent motivation:

$$b^* (\gamma) = \frac{1}{2} (\pi - \gamma \theta)$$

3. Outside option is high - incentive pay set by the “market” with a “discount” for agent motivation.

$$b^* (\gamma) = \sqrt{2 (\bar{u} - w)} - \gamma \theta$$
4. Profit-oriented production \(- \gamma = 0\) so case (1) is ruled out and there is always incentive pay.
\( \gamma > 0 \) increases organizational efficiency:

- *For example*, in case 2 above:

\[
e^* (\gamma) = \frac{1}{2} \{ \pi + \gamma \theta \}.
\]

with \( b^* (\gamma) = \frac{1}{2} (\pi - \gamma \theta) \).

- Productivity is decreasing in \( \gamma \).
  
  - This explains why matching on missions increases organizational productivity.

- Note also that cross-sectionally, \( b^* (\gamma) \) and \( e^* (\gamma) \) are negatively correlated!
Competition

• 2 roles:

• Raises $\bar{u}$

• Improves matching: $\gamma = 1$
Competition increases productivity

- Case 1:  $e^* (\gamma) = \gamma \theta$  $b^* (\gamma) = 0$.

- Case 2:  $e^* (\gamma) = \frac{1}{2} \{\pi + \gamma \theta\}$  and  $b^* (\gamma) = \frac{1}{2} (\pi - \gamma \theta)$:
  - Competition leads to  $b^* (\gamma) = 0$  if  $\gamma \theta > \pi$.

- Case 3  $e^* (\gamma) = \frac{\pi}{2}$.  Competition with profit-oriented sector drives productivity.  Bonus  $b^* (\gamma) = \frac{\pi}{2} - \gamma \theta$.