Public-Private Competition, Competitive Neutrality and the Cost and Quality of Welfare Services

Johan Stennek

Hospital care (EU)

- IRIS = public hospitals in Brussels
- Run deficit every year
- Private hospitals complain to EU-Commission: unfair
- EU-treaty: Stat Aid not allowed
- But Commission rejects complaint

Health insurance (US)

– Obama care

– Very few private companies in some markets

– Some want to allow "public option"

– Others see this as unfair:
"No private firm can compete against a public firm that does not need to make a profit"

Public Service Broadcasting (UK)

– BBC funded by license ("tax")

– Private media must sell ads or subscriptions

– Active online
  ⇒ competition also with print media

– Complain: unfair competition
  ⇒ threat to free and pluralistic media

– Government investigation

Schools (Australia)

- Private schools express worries to federal government
- Risk municipalities favor public schools
- Not allowed according to Australian "Competitive neutrality rules"

Conclusions

- Public-private competition (increasingly) common
  - Often in "important" sectors

- New problem for regulation
  - Competitive neutrality

Definition:
Public entities should compete on their merits and not enjoy a competitive advantage simply as a result of their public sector ownership

Questions

1. Is there any reason why public and private firms should compete?

    – If no: separate!

    – If yes: need to know the gains

2. How should "competitive neutrality" rules be designed?

    – Are discriminatory subsidies always bad?

My focus

- Tax-financed welfare services
  - child care, education, health care

- Government's perspective
  - High quality for users
  - Low cost for tax payers $\Rightarrow$ profits is a cost

Market and regulatory failure

1. Quality not observable/verifiable
   - Government cannot regulate or contract quality

- Solution: Competition?
   - Users can observe quality ⇒ Allow choice + Vouchers
   - Producers must offer non-verifiable quality

2. Limited competition
   - Location matters - Only a few close producers
   - Difficult for users to observe quality

Ownership

- Economic definition of ownership
  - Right to decide all things that have not been decided through
    - Laws and regulations
    - Contracts

- Ownership matters since
  - Different people have different preferences

Ownership

- ## Ownership matters when
  - Contracts incomplete
  - Here: managers must decide non-verifiable quality
    (also effort non-verifiable)

Ownership

- Public ownership
  - Gov provides resources
    - In kind: school buildings
    - Appropriations
  - Gov is employer
    - Hires manager
    - Decides manager's employment contract
  - Gov decides how much to produce

Ownership

- Private ownership
  - Manager/owner decides also how much to produce
  - Manager/owner keeps surplus = profit
  - Government sets voucher price

Governments choice

- When the managers must decide on quality (incomplete contract), is it then better to:

  1. Regulate as much as possible?
     (public ownership)

  2. Let managers also decide on quantity?
     (private ownership)

  3. Mix?

Model

Assumptions

- ## Producers
  - Two
  - Quality: z_i

- ## Users
  - Unit mass
  - Unit demand
  - Identical WTP: $v_0 + v \cdot z_i$

Assumptions

- ## User choice

  - A user observes quality difference iff $\left| z_1 - z_2 \right| \geq \theta$
  - Threshold θ uniformly distributed over $[0, t]$
  - Population share $s = (z_1 - z_2)/t$ informed $\Rightarrow$ select best
  - Uninformed select at random

- ## Demand

  - $q_i = \frac{1}{2} + (z_i - z_j)/2t$
  - Hotelling – thus t can also be interpreted as horizontal differentiation

Assumptions

- Production cost
  - $(c_0 + c \cdot z_i) \cdot q_i$

- Intrinsic preferences for quality
  - $b \cdot z_i \cdot q_i$

- Assume
  - $c - b > 0$ $\Rightarrow$ quality not voluntarily supplied
  - $v > c - b$ $\Rightarrow$ despite value higher than cost

Assumptions

- Government objective

$$W = B - \left[E + \tfrac{\lambda}{2} \cdot E^2 \right] - \alpha \cdot I$$

$$B = \sum_i v \cdot z_i \cdot q_i$$

$$E = \text{Goverment expenditure}$$

$$I = \left(z_i - z_j \right) \cdot q_i > 0$$

First best

- If government sets qualities

$$E = \sum_{i} \left(c - b \right) \cdot z_i \cdot q_i$$

- Then

$$z^* = \frac{v + b - c}{\lambda \cdot \left(c - b \right)^2} > 0$$

Assumptions

Government selects ownership structure

Government selects
– voucher price
and/or
– production plan & wage

Managers select qualities

Consumers select service provider

1   2   3   4   Time
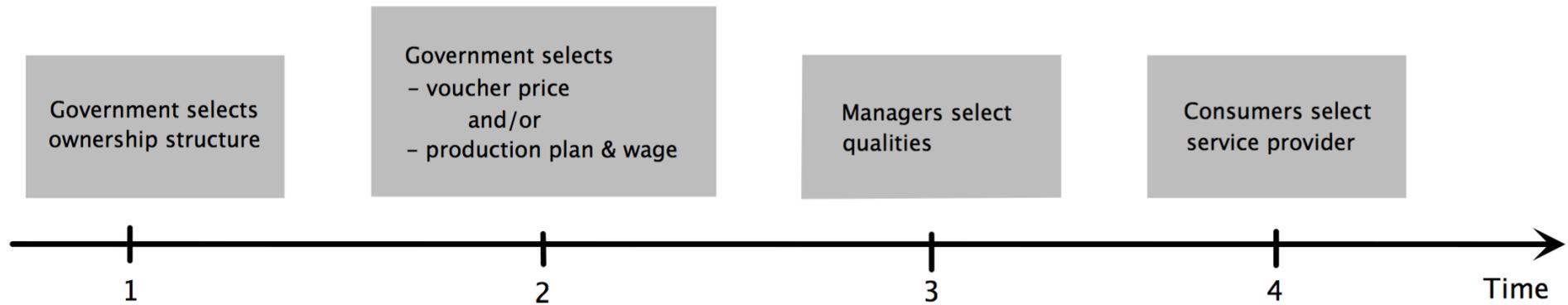
Public ownership

Public ownership

- Government decides how much to produce
  - $\underline{q}_i$

- Managerial compensation
  - $q_i(z_i,z_j) \geq \underline{q}_i \implies$ manager gets fixed wage w_i
  - Otherwise $\implies$ replaced (zero utility)

Public ownership

- Manager's choice (best reply)

  – Minimum quality: $q_i(z_i, z_j) \geq \underline{q}_i$

  – If compensation covers cost

  – Otherwise no quality

Public ownership

- ## Nash equilibrium
  - Given $\underline{q}_i = \frac{1}{2}$ and compensating wage
  - Any $z_1 = z_2 = z'$ is an equilibrium

- ## Intuition
  - A managers indifferent between
    - $z = z' \Rightarrow q_i = \frac{1}{2} \Rightarrow$ get wage
    - $z = 0 \Rightarrow q_i < \frac{1}{2} \Rightarrow$ be replaced

- ## Government may achieve first best
  - No rents – just pay for effort z^*
  - But requires coordination

Public ownership

- Unique *coalition proof* equilibrium
  - $z_1 = z_2 = 0$ $\Rightarrow$ $q_i = ½$
  - Managers "agree" to do minimum

Public ownership

- Unique coalition proof eqbm – more generally
  - Ask one producer to produce (say) $\underline{q}_1 = ¾$
  - Then producer 1 has to set high quality, even if competitor sets $z_2 = 0$

Public ownership

- Conclusion 1
  - Government can induce positive non-verifiable quality in *one* firm
  - But only by setting different production targets…
  - Implying unequal quality

- Examples?
  - Regional vs national universities?

Public ownership

- Conclusion 2
  - Consumer immobility $\Rightarrow$ increased maximum quality that can be induced
  - Government welfare is (weakly) increased

Private ownership

Private ownership

- Incentive system
  - Government sets voucher price, p
  - Producers keep surplus

Private ownership

- Conclusion 1

  – Government can induce any symmetric quality as Nash equilibrium

  – Just set price high enough

Private ownership

- ## Conclusion 2
  - Equilibrium profit: $\pi = (c-b) \cdot t/2$
  - Increasing in private cost $(c-b)$

- ## Intuition (envelope thm)
  - Higher cost $\Rightarrow$ competitor produce lower quality

- ## Implication
  - If cost $(c-b)$ goes up
    - Government must pay this cost
    - Government must also pay higher rents

Private ownership

- Important assumption
  - Government cannot use negative fixed fee

Pure private
vs
pure public

Private vs public

- Public better if *users immobile*
  - Public: can achieve higher quality
  - Private: more costly to induce quality

Private vs public

- Public better if *cost of quality high*
  - Private: profits increase with cost

Private vs public

- Private better if manager highly *motivated*
  - Private: need less rents to motivate

Private vs public

- Private better if *inequality aversion*
  - Private: symmetric equilibrium
  - Public: need inequality to induce quality

- Artifact?
  - If producers asymmetric (different costs)
  - Private equilibrium ⇒ asymetric
  - Public ⇒ can use different market shares to remove quality difference

Private vs public

- Private better if *input use regulated*
  - Example: teacher density

- Intuition

  - Cost of inducing private firms to provide quality is increasing in cost.

  - When high-cost inputs regulated, need not be induced

Mixed ownership

Mixed ownership

- Private producer
  - High voucher price ⇒
  - Wants to "capture" large market share ⇒
  - Must provide high quality

- Public producer
  - High production target (say ½) ⇒
  - Must "defend" ⇒
  - Must provide equally high quality

Mixed ownership

- ## Difference to pure public
  - Non-verifiable quality > 0
  - Thanks to "hungry" private producer

- ## Difference to pure private
  - Do not need to pay profits to one producer
  - Thanks to public ownership

Mixed ownership

- If public producer's production target $> \frac{1}{2}$
    - Public producer supplies higher quality
    - Private producer also increases quality

- Result
    - Higher quality
    - Lower profits
      (private producer supplies higher quality at every given price)
    - Increased inequality

Mixed ownership

- Government preferences
  - Mixed always better than pure private
  - Mixed never worse than pure public
  (equal when users very immobile)

Mixed ownership

- Competitiv
  - Voucher
  - Voucher

- So, no
  - Public pro
  - Be allowed

Predatory quality

Equally efficient private firm producing same quality as public, would make a loss and be forced into bankruptcy

Example

Public service broadcasting

Mixed ownership

- If competitive neutrality rule enforced
  - Higher vouchers
  - Reduced public production

- Result
  - Private producers: Price ↑, Market share ↑, Profit ↑
  - Citizens: Quality ↓, Taxes ↑, Inequality ↓

- But,
  - Mixed ownership weakened in case users immobile
  - Government may now prefer pure public ownership

Conclusion

- **Rationale for mixed markets**
  - Tax-financed welfare services
  - Non-verifiable quality
  - Little competition

- **Intuition**
  - Private firm provides incentives
  - Public firm reduces profits

- **Optimal regulation**
  - Allow exemptions from competitive neutrality