# *Contractual Design and Renegotiation: Impacts on Yardstick Competition Efficiency*

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# Introduction

- **Benchmarking** of firms' performance and **financial consequences** of the comparisons.

→ Incentive regulatory tool which enables the regulator to introduce **virtual competition** into locally monopolistic industries (Shleifer [1985]).

Theory:

- One single method:
  - provides strong incentives.
  - is very constricting for the firms.
- A rigid contract, with no renegotiation.

Practice:

- Several methods
  - less incentives.
  - less constricting.
- Renegotiation may occur.

# Introduction – The various applications of YC.

| Activity Sector | Country | Type of Use |
|---|---|---|
| Railway infrastructures | Great Britain | Assisted benchmarking |
| Railroad | Japan | Cost regulation |
| Bus network | Norway | Cost regulation |
| Water | Great Britain<br>Portugal | Assisted YC<br>Sunshine regulation |
| Electricity and gas | Various | Various |

# Introduction - Motivation

- How can we explain that the various methods used in practice lack incentives?
  - A limited regulatory commitment = renegotiation may occur
    - Ability to face endogenous/exogenous pressures.
  - A trade-off in terms of contractual design
    - Does there exist an optimal level of rigidity/ renegotiation?

- Which impact on YC efficiency?

# Theory and Method

- Theory:
  - Yardstick models : Shleifer [1985], Auriol [2000], Chong and Huet [2006]:
    - A perfect regulatory commitment.
  - Guasch, Laffont, Straub [2006,2008] and Laffont [2003,2005].
    - Model of individual incentive regulation with renegotiation.
- Method:
  - We show that, in equilibrium, ex post profits may be negatives.
  - We introduce a limited regulatory commitment into a yardstick model = a probability of renegotiation.
  - We analyze the impact of 3 contractual designs on YC efficiency.

# An Agency Model with a limited regulatory commitment

| Investments in the enforcement mechanism | No investments | |
|---|---|---|
| **A rigid contract**<br>▪ No renegotiation is expected ex ante.<br>▪ Ex post renegotiation<br>▪ Renegotiation cost, investment, rent left to the firms. | **Non constricting**<br>▪ Compensates the firms' losses.<br>▪ Avoids renegotiation<br>▪ Costly: transfers and public funds. | **Flexible**<br>▪ Avoids the enforcement and public funds costs.<br>▪ But doesn't limit renegotiation : Expects renegotiation ex ante. |

# Main Results (1/4)

- Proposition 1: **YC vs Individual incentive regulation: the enforcement difficulties**
  - *Suppose that*
    - *there are two symmetric firms ($\beta 1 = \beta 2 = \beta$)*
    - *there is no ex post shock ($\varepsilon = 0$).*
  - *Yardstick competition prevents the problem of enforcement from occurring.*
  - *However, when an ex post unfavourable shock occurs,*
    - *the firms' ex post profits may be negative*
    - *and enforcement difficulties appear with yardstick competition.*

# Main Results (2/4)

- Proposition 2: **Ability to manage exogenous and endogenous shocks**
  - *The higher the level of investment in the enforcement mechanism*

  *= the higher the regulator's ability to manage endogenous and exogenous pressures*

  *= the higher the probability not to renegotiate a rigid contract,*

  ***The more efficient the rigid contract.***

  - Conditions:
    - the cost of public funds is limited.
    - the renegotiation is not perfectly efficient.
    - the renegotiation is socially costly in terms of rents.
    - the maladaptation costs are limited.

# Main Results (3/4)

- Proposition 3: **Efficiency of renegotiation**
  - *The more efficient (or the less costly) renegotiation*
    - *the smaller the interest in investing in the enforcement mechanism;*
    - ***the more efficient the flexible contract** compared to a rigid one.*
  - Condition :
    - the probability of not renegotiating a rigid contract is sufficiently high;
    - the regulator has a minimum ability of facing endogenous and exogenous pressures.

# Main Results (4/4)

- Proposition 4: **Cost of public funds**
  - The higher the cost of public funds
    - the smaller the level of investment in the enforcement mechanism.
    - the higher the probability that a rigid contract will be renegotiated.

  ➡ *The higher the cost of public funds, **the more efficient a flexible contract**, compared to a rigid one.*

  - Condition: Verified only for a minimum level of investment in the enforcement mechanism.

# Conclusion

- We observe:
  - A lack of consensus on how to design and implement YC: lack of incentives.
  - Renegotiation.
- We explain this constat:
  - A limited regulatory commitment.
  - A trade-off on contractual design: explain the lack of incentive.
- We assume another possibility: a flexible contract.
- The choice depends on: the cost of public funds, the renegotiation efficiency, the proba that a rigid contract is renegotiated.

# Thank you !

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# Annex 1: « *Assisted Benchmarking* »

| | |
|---|---|
| Main objectives | Identify the productivity variations<br>Reduce informational asymmetries |
| Frequency | Occasional mechanism |
| Sanction | No |
| Regulator power | Weak, no coercive power |
| Incentive | Weak |
| Constraint | Weak |
| Condition | Consensual climate<br>Adequate information transmission |

# Annex 2: « *Sunshine Regulation* »

| | |
|---|---|
| Main objectives | Incite firms to do efforts<br>Reduce informational asymmetries |
| Frequency | Occasional mechanism |
| Sanction | Indirect sanction on reputation |
| Regulator power | Investigation and expertise power; Limited coercive power; The regulator as a « moral authority » |
| Incentive | Average incentive; Indirect virtual competing pressure exerted by the stakeholders |
| Constraint | Average/high, according to the efficiency conditions |
| Condition | Firms fear the impact on reputation<br>Consensual climate<br>Credible regulator to mobilize public opinion<br>Adequate information transmission |

# Annex 3: « *Assisted yardstick competition* »

| | |
|---|---|
| Main objectives | Reduce cost inefficiencies<br>Reduce informational asymmetries |
| Frequency | Occasional mechanism, to set the x-factor |
| Sanction | Direct. Comparisons are introduced into the tariff formula. |
| Regulator power | Limited coercive power, but the regulator can incite firms by the setting of the x-factor by benchmarking. |
| Incentive | High |
| Constraint | High, prices depend on comparisons. The shareholders constitute a mean of pressure. |
| Condition | Adequate information transmission |

# Annex 4: « *Costs regulation* »

| | |
|---|---|
| Main objectives | Reduce cost inefficiencies<br>Reduce informational asymmetries |
| Frequency | Systematic mechanism |
| Sanction | Direct. Monetary penalties by the means of transfers. |
| Regulator power | High coercive power |
| Incentive | Very high. It approaches the normative models. |
| Constraint | Very high. The benchmarking sets directly the bas of costs reimbursement. |
| Condition | Adequate information transmission;<br>Possibility for the regulator to face complaints in the Courts |