Opportunism and Insurance in Vertical Contracting

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Research objective

- Study an upstream firm's ability to exercise market power when information is scarce both in the intermediate and final market

Two issues

Illustration: One upstream supplier offers two-part tariff(s) $wq + F$

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This paper: Externalities can balance each other if faced together

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where $R_i(\mathbf{q}) := P(\mathbf{q}) \times q_i$ and $\theta_i \sim N(\mu, \sigma^2)$ is a state variable
- M is risk neutral, retailer i cares about
$$u_i(\pi_i) := -e^{-r_i(\theta_i R_i(\mathbf{q}) - T_i)}$$
where $r_i \geq 0$ is his level of risk aversion

Contracting game

Stage 1. M makes a take-it-or-leave-it-offer to each retailer

Stage 2. Retailers accept/reject after observing only their own offer and make payments accordingly

Stage 3. Retailers observe θ_i's and then put out their quantities

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Incomplete-contracting approach: M cannot offer

- State contingent contracts (monitoring costs, moral hazard etc.)
- Multilateral contracts (hard to enforce and possibly illegal)
- Evidence suggests that supply contracts are often fairly simple

Less opportunism

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With point contracts (t_i, q_i), $\widehat{q}_i$ is defined by M's FOC:

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- Opportunism may be less of a problem in volatile markets

Less opportunism = more profit?

M is not always better off vis-a-vis the opportunism outcome

- Relative strength of vertical externality and contracting externality decides the effect on his profit from giving insurance

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- First term is negative: lower payment from retailer i
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- Second term is positive: higher payments from rivals
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- Third term is negative: lower production cost
  - Rivals' quantities fixed $\Longrightarrow$ no cost increase here

Beneficial insurance provision

$\left.\frac{\partial \pi_M}{\partial r_i}\right|_{\widehat{\mathbf{q}}} > 0$ iff

$$-\sum_{k \neq i} \frac{\partial R_k}{\partial q_i} > \frac{\partial R_i}{\partial q_i} - \frac{1}{\beta_i} \frac{\partial c}{\partial q_i}$$

Here, M's profit <u>increases</u> in retailer i's risk aversion

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- Suggests that M prefers some risk aversion among retailers
- Similar argument for more uncertainty (higher σ^2)

Other contracts

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1. State contingent menus can give retailers perfect insurance
   - No vertical externality $\implies$ the opportunism problem reinforced
2. Vertical restraints can often resolve the opportunism problem
   - RPM (O'Brien-Shaffer 1992), buybacks (Montez, forthcoming) etc.
   - Restraints have different insurance properties (Rey-Tirole 1986)
   - Effectiveness will depend on modeling specifics, e.g. make-to-stock vs. make-to-order, demand shocks vs. cost shocks etc.
   - Main impression: insurance issues can make restraints less effective

Competition policy

General view in this paper

- When insurance matters, opportunism might be a lesser issue with simple contracts and hard to solve with vertical restraints

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General view in this paper

- When insurance matters, opportunism might be a lesser issue with simple contracts and hard to solve with vertical restraints
- Less attractive to use restraints for curbing opportunism
- When observed, restraints may be used for other reasons
  - Particularly in volatile markets with many, small and newly established downstream firms

Thank you!