Upfront Payment, Renegotiation and (Mis)coordination in Multilateral Vertical Contracting

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Upfront Payment

Manufacturer

Payment before any purchase

Retailer

Payment per unit of purchase

Key features

- Paid at signature of contract
- Not related to volume of purchases (lump-sum)
- Term: slotting allowances

Examples

- Grocery stores
- Drug stores
- Book stores, record stores
Upfront Payment

Why do manufacturers (unwillingly) pay slotting fees?

- To get access to retailers’ (limited) shelf space
  - just placement on shelves
  - premium placements (eye-level shelves, special displays)
- To have new products introduced in their stores
- To stay in their list of potential suppliers
Upfront Payment

How much are slotting fees?

- No precise industry-wide numbers
- Amount depends on numerous factors
  - whether consumer testing has been performed
  - whether product is carried by competitors
  - whether supplier has well-conceived advertising program
- FTC Report, 2003

“Most of the surveyed suppliers reported that a nationwide introduction of a new grocery product would require $1.5 to $2 million in slotting allowances.”
Aim of Study

One link is missing; technical but

- R2 delist M_B and launch its own-label imitation
- entry of R2 was initiated by M_B provided exclusivity
- negotiations between M_A and R_2 ended in break-down
- Toy R Us Inc. v. FTC (1996)

Main focus

- intra-brand competition
- inter-brand competition
- inter-brand competition between different retailers

Remark

- No asymmetry of information
- No shopping costs
Aim of Study

Main questions to address

1. What is the impact of slotting fees in situation where
   - intra-brand competition
   - inter-brand competition
   - inter-brand competition between different retailers

2. Are there always equilibria in which all trading links are active?
Main Findings

1. In all equilibria firms fail to sustain industry-wide monopoly profit

2. Use of slotting fees in equilibrium
   - MB may use them to dampen intra-brand competition
   - MA may use them to compensate for negative impact of sales of its product on total profits from selling product B

3. There do not always exist equilibria in which retailers carry the products of all their respective suppliers
Modeling Assumptions

**A1** Each pair Mk-Ri negotiates three-part tariffs contract

\[ T_{ki}(q_{ki}) = \begin{cases} 
  w_{ki} q_{ki} + F_{ki} + S_{ki} & \text{for } q_{ki} > 0 \\
  S_{ki} & \text{for } q_{ki} = 0 
\end{cases} \]

where

- \( w_{ki} \) is price per unit of good purchased by Ri
- \( F_{ki} \) is conditional fee related to volume of purchases by Ri
- \( S_{ki} \) is unconditional fee (slotting fee, if negative) unrelated to volume of purchases by Ri
Modeling Assumptions

A4 Disagreement payoffs are defined using approach of Stole and Zwiebel (1996)

- if Mk and Ri fail negotiations, they cannot renegotiate at another time
- all contracts signed earlier are renegotiated from scratch

Motivation

- Firms can renegotiate contracts at any time before retail competition
- Renegotiated can be in case of material change of circumstances

“Full written agreements between the main parties and their Suppliers are unusual. Day-to-day negotiations (particularly on price and quantity) are usually conducted orally...” (UK CC)
Order of Negotiations

Stage 1 $M_A$ and $R_1$ negotiate
Stage 2 $M_B$ and $R_1$ negotiate
Stage 3 $M_B$ and $R_2$ negotiate

If all negotiations succeeded, then

Stage 4  
- Each $R_i$ decides on quantities to purchase from $M_k$
- Retail competition takes place
- All payoffs are realized

If negotiations in some $M_k$-$R_i$ fail, then

Stage 4'  
- $M_k$ and $R_i$ will never renegotiate
- Negotiations start from beginning preserving same order
First Result

*In any SPNE in which all links are active, firms fail to implement monopoly outcome.*

Contrast with literature

![Diagram](image)

*Inter-brand competition only*  *Intra-brand competition only*

**Main Result** Fully monopoly outcome can be sustained
First Result: Intuition

\( M_A \) is inactive

Variable profits

\[
\pi^M_B (w) = (w_{B1} - c_B) q_{B1} (w) + (w_{B2} - c_B) q_{B2} (w)
\]

\[
\pi^R_i (w) = R_{Bi} (q_{B1} (w), q_{B2} (w)) - w_{Bi} q_{Bi} (w)
\]

Main Results (Bedre, 2010)

- Wholesale prices are set at levels generating monopoly profits

\[
(w_{B1}^m, w_{B2}^m) = \arg\max \Pi_{B1B2} (w) \equiv \pi^M_B (w) + \pi^R_1 (w) + \pi^R_2 (w)
\]

- \( M_B \) pays slotting fee to \( R_1 \) only

\[
S_{B1} = -\lambda_{B1} \left[ \Pi_{B1B2}^m + \frac{\lambda_{B2} (1 - \lambda_{B1})}{(1 - \lambda_{B2})} \Pi_{B1}^m - \Pi_{B2}^m \right]
\]
First Result: Intuition

**MA is active (continued)**

**Lemma** The solution to the problem

\[
(w_{B1}^*(w_{A1}, \Pi_{B2}^d), \ w_{B2}^*(w_{A1}, \Pi_{B2}^d)) = \text{argmax} \ \widetilde{\Pi}_{B1B2} (w_{A1}, \ w_{B1}, \ w_{B2}) \\
(\ w_{B1}, \ w_{B2})
\]

s.t. \[\widetilde{\Pi}_{B1B2} (w_{A1}, \ w_{B1}, \ w_{B2}) - \pi_{A1}^{R1} (w_{A1}, \infty, \ w_{B2}) \geq \Pi_{B2}^d\]

implies

i. \[\widetilde{w}_{B1} (w_{A1}) \leq w_{B1}^*(w_{A1}, \Pi_{B2}^d) \text{ and } \ w_{B2}^*(w_{A1}, \Pi_{B2}^d) \leq \widetilde{w}_{B2} (w_{A1})\]

ii. \[w_{B1}^* (w_{A1}, \Pi_{B2}^d) \text{ is non-decreasing in } \Pi_{B2}^d\]

\[w_{B2}^* (w_{A1}, \Pi_{B2}^d) \text{ is non-increasing in } \Pi_{B2}^d\]

**Corollary** In all SPNE firms fail to implement the monopoly outcome.
Second Result

If intensity of interbrand rivalry between retailers is sufficiently strong, then MA may need to pay R1 a slotting fee.

MA pays upfront to compensate for negative impact of A on total sales of B

MB pays upfront to suppress intra-brand competition between R1 and R2

Remark

Slotting fees are irrelevant
Second Result: Intuition

Key points

- \( w_{A1} \) and \( w_{B1} \) are strategic complements
- \( w_{A1} \) and \( w_{B2} \) are strategic substitutes

(from point of view of maximizing total profits)

Implication \( MA \) and \( R1 \) jointly prefer for \( MB \) and \( R2 \) to set higher \( w \)

**Gain for \( MA \)**

- reduce competitive pressure on its product
- allow for more coordination of selling A and B through \( R1 \)

**Gain for \( R1 \)**

- reduce incentives of \( MB \) to free-ride on its contract with \( R1 \)
- make \( MB \) more tractable to price concessions
Second Result: Intuition

Implication $S_{A1}$ can be negative

$$S_{A1} = (1 - \lambda_{A1}) \, GT_{A1} - \pi_{MA} < 0 \quad \text{if } MA \text{ has weak bargaining power (standard and unsurprising)}$$

$$S_{A1} = \left( GT_{A1} - \frac{u^{R_1 | R_2} - u^{R_1 | MA}}{\lambda_{B1}} \right) - \pi_{MA}$$

$$= \tilde{\Pi}_{B1B2} - \left( d + \frac{u^{R_1 | R_2} - u^{R_1 | MA}}{\lambda_{B1}} \right) < 0 \quad \text{if } A \text{ sufficiently reduces total sales of } B$$

Result $MA$ may pay slotting fee to compensate for negative impact of sales of its product on total sales of $B$ (not to be removed from shelf).
Third Result

In a framework of sequential contracting, there do not always exist SPNE in which retailers carry the products of all their respective suppliers

Contrast with literature

Main Result There always exist CA-SPNE with all links being active
Third Result: Intuition

- A party negotiating with two counterparties cannot fully appropriate benefits of individual trade with each of them.
- This effectively increases that party's outside option of failing some negotiation.
- This makes it difficult to sustain equilibrium with all trading links.

Formal Condition \( GT_{A1} \geq \max \left[ 0, \frac{u^{R_1|R_2} - u^{R_1|M_A}}{\lambda_{B1}} \right] \)
Policy Implications

Impact of upfront fees (on prices) may be less anticompetitive when competition exists at both levels

Upfront fees may be used to ensure that retailer does not remove manufacturer's product from its store