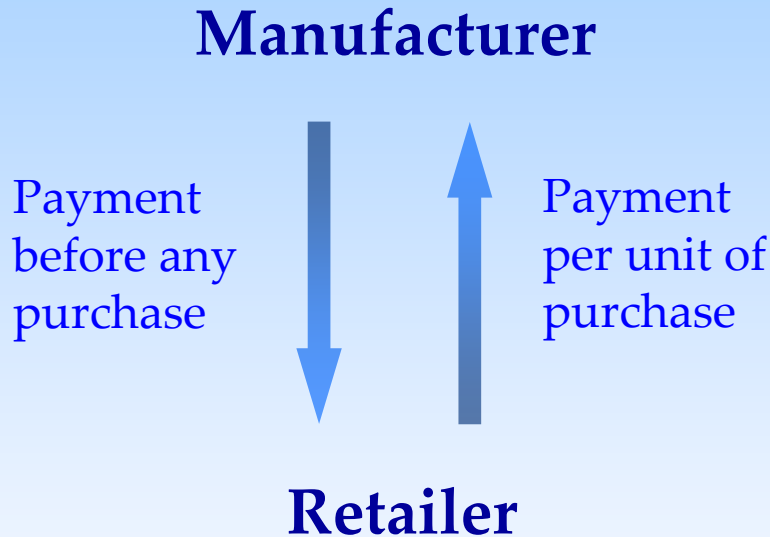# Upfront Payment, Renegotiation and (Mis)coordination in Multilateral Vertical Contracting

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Upfront Payment

Manufacturer

Payment before any purchase

Payment per unit of purchase

Retailer

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

M_A M_B

R_1 R_2
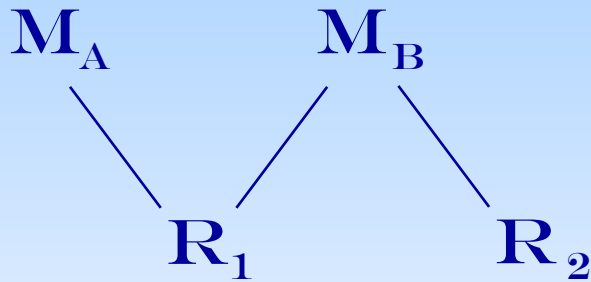
Main focus

➢ intra-brand competition

➢ inter-brand competition

➢ *inter-brand competition between different retailers*

One link is missing; technical but

➢ R_2 delist M_B and launch its own-label imitation

➢ entry of R_2 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)

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

   - M_B may use them to dampen intra-brand competition

   - M_A 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

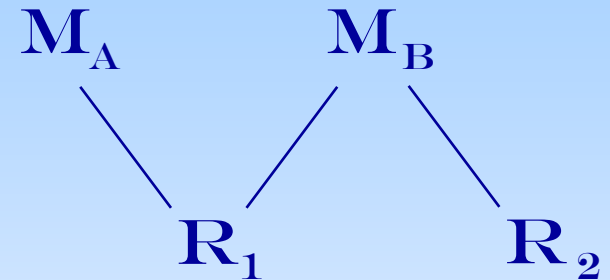❑ Renegotiated can be in case of material change of circumstances

"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
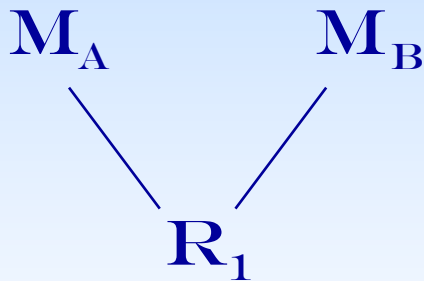
❑ All payoffs are realized

If negotiations in some M_k-R_i fail, then

Stage 4' ❑ M_k and R_i will never renegotiate

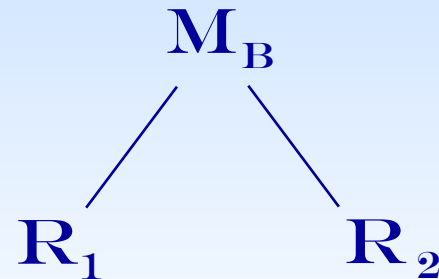❑ Negotiations start from beginning preserving same order

First Result

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

Contrast with literature

$$M_A \qquad M_B$$

$$R_1$$

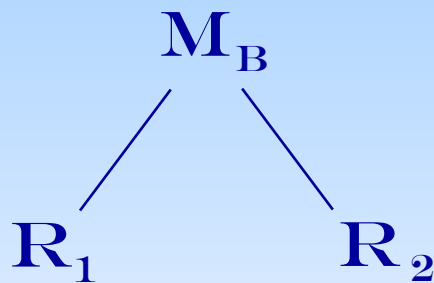*Inter-brand competition only*

$$M_B$$

$$R_1 \qquad R_2$$

Intra-brand competition only

Main Result Fully monopoly outcome can be sustained

First Result: Intuition

MA is *in*active   *Variable profits* $\mathrm{w} \equiv (w_{B1}, w_{B2})$

$$\pi^{M}{}_{B}(\mathrm{w}) = (w_{B1} - c_{B})q_{B1}(\mathrm{w}) + (w_{B2} - c_{B})q_{B2}(\mathrm{w})$$

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

M_B

R_1   **R_2**

Main Results (Bedre, 2010)

❑ Wholesale prices are set at levels generating *monopoly profits*

$$(w_{B1}^{m}, w_{B2}^{m}) = \underset{\mathrm{w}}{\mathrm{argmax}}\ \Pi_{B1B2}(\mathrm{w}) \equiv \pi^{M}{}_{B}(\mathrm{w}) + \pi^{R_1}(\mathrm{w}) + \pi^{R_2}(\mathrm{w})$$

❑ *MB* pays *slotting fee* to *R1* 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

<u>*MA* **is active (continued)**</u>

Lemma *The solution to the problem*

$$(w_{B1}^*(w_{A1}, \Pi_{B2}^d), w_{B2}^*(w_{A1}, \Pi_{B2}^d)) = \underset{(w_{B1}, w_{B2})}{\text{argmax}} \; \tilde{\Pi}_{B1B2}(w_{A1}, w_{B1}, w_{B2})$$

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

implies i. $\tilde{w}_{B1}(w_{A1}) \leq w_{B1}^*(w_{A1}, \Pi_{B2}^d)$ *and* $w_{B2}^*(w_{A1}, \Pi_{B2}^d) \leq \tilde{w}_{B2}(w_{A1})$
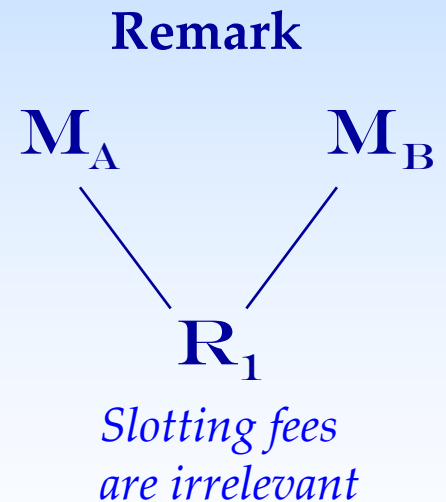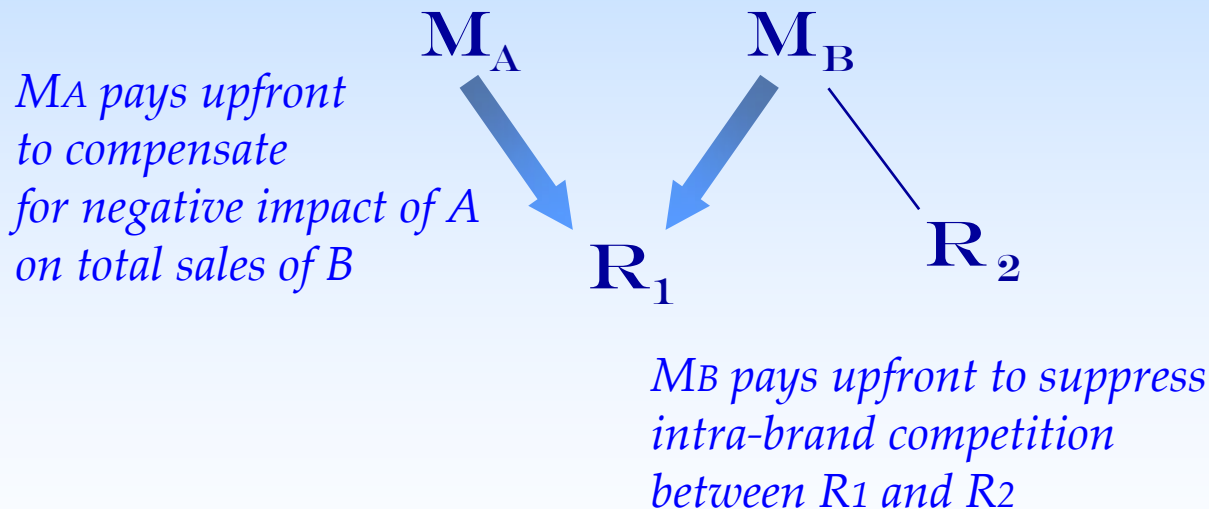
ii. $w_{B1}^*(w_{A1}, \Pi_{B2}^d)$ *is non-decreasing in* Π_{B2}^d

$w_{B2}^*(w_{A1}, \Pi_{B2}^d)$ *is non-increasing in* Π_{B2}^d

Corollary In all SPNE firms fail to implement the monopoly outcome

Second Result

If intensity of interbrand rivalry between retailers is sufficently strong, then M_A may need to pay R_1 a slotting fee.
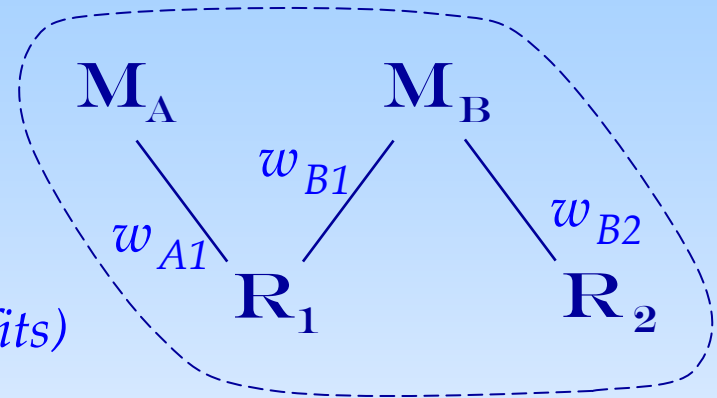
M_A M_B

Remark

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

R_1 R_2

M_A M_B

M_B pays upfront to suppress intra-brand competition between R_1 and R_2

R_1

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

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

$$S_{A1} = \left[GT_{A1} - \frac{u^{R_1 \mid R_2} - u^{R_1 \mid M_A}}{\lambda_{B1}} \right] - \pi^{M_A}$$

$$= \widetilde{\Pi}_{B1B2} - \left[d + \frac{u^{R_1 \mid R_2} - u^{R_1 \mid M_A}}{\lambda_{B1}} \right] \quad < 0 \text{ if } A \text{ sufficiently reduces}$$
$$\text{total sales of } B$$

Result M_A 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).
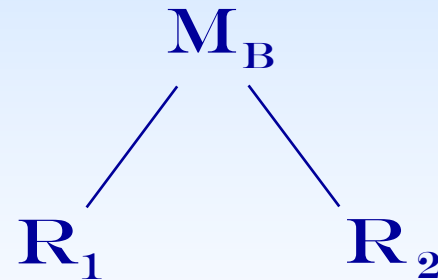
Third Result

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

M_A M_B

R_1

Inter-brand competition only

M_B

R_1 R_2
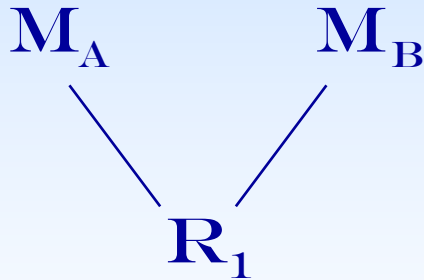
Intra-brand competition only

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 $\quad GT_{A1} \geq \max \left[0, \dfrac{u^{R_1 | R_2} - u^{R_1 | M_A}}{\lambda_{B1}} \right]$

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