

Exclusivity as (in)efficient insurance

Cédric Argenton and Bert Willems
CentER & TILEC, Tilburg University

1. Introduction

- An incumbent firm can use exclusivity contracts to monopolize an industry or deter entry
- Two main “theories of harm”:
 - “naked exclusion”: Rasmusen et al. (1991), Segal and Whinston (2000): incumbent denies viable scale to potential entrant by signing up enough customers
 - Aghion and Bolton (1987): incumbent uses contractual provisions to force the entrant to price low, and capture efficiency gains

- Exclusive dealing contracts also help with efficiency by solving various problems (intrabrand competition, hold-up problems, etc.) Focus here is on *risk sharing*.
- Can the insurance provided by a long-term exclusivity contract be invoked in order to justify its use in the face of its negative impact on competition?
- Topical policy issue. Energy markets in Europe rife with long-term contracts and European Commission has displayed some hostility against them. (E.g. *Distrigas*, 2007)

What we do

- We extend the Aghion-Bolton model by introducing risk-aversion on the part of the buyer and by studying different contract environments (no contract, exclusivity contract, financial contract).
- Study the trade-off between positive effect of contracts (risk allocation) and negative effect (exclusion)

What we find

- Exclusivity contract induces efficient risk-sharing. So, although exclusionary, can be preferable to no contract at all.
- However, exclusivity always dominated by use of simple financial instrument (forward contract), which induces perfect risk-sharing and efficient entry.
- So, little room for insurance defense of exclusivity contracts. Financial contracts should be encouraged.

- Yet, in special circumstances, financial contracts can also be used to exclude if incumbent allowed to take a speculative position. So, complete laissez-faire w.r.t. financial contracts not advisable.

- Outline of talk:

2. Model

3. Analysis

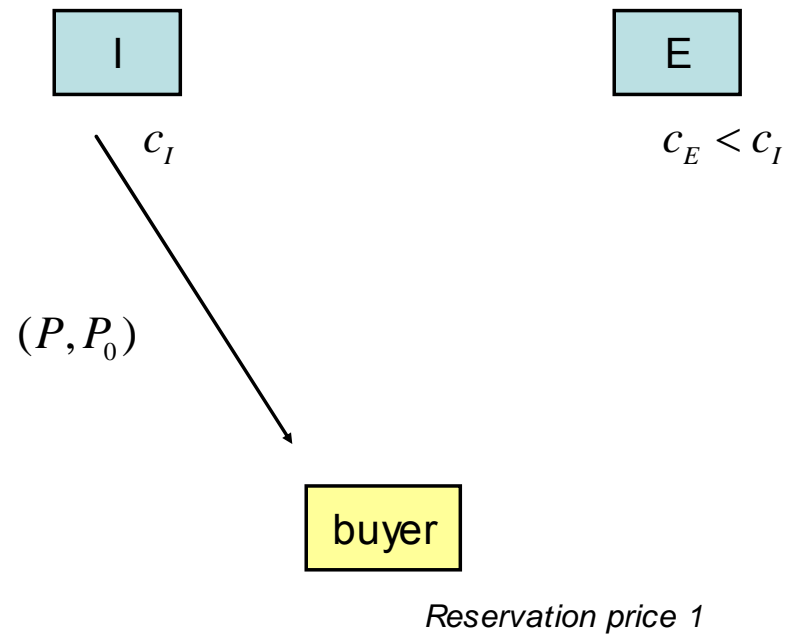
4. Related literature

2. Model

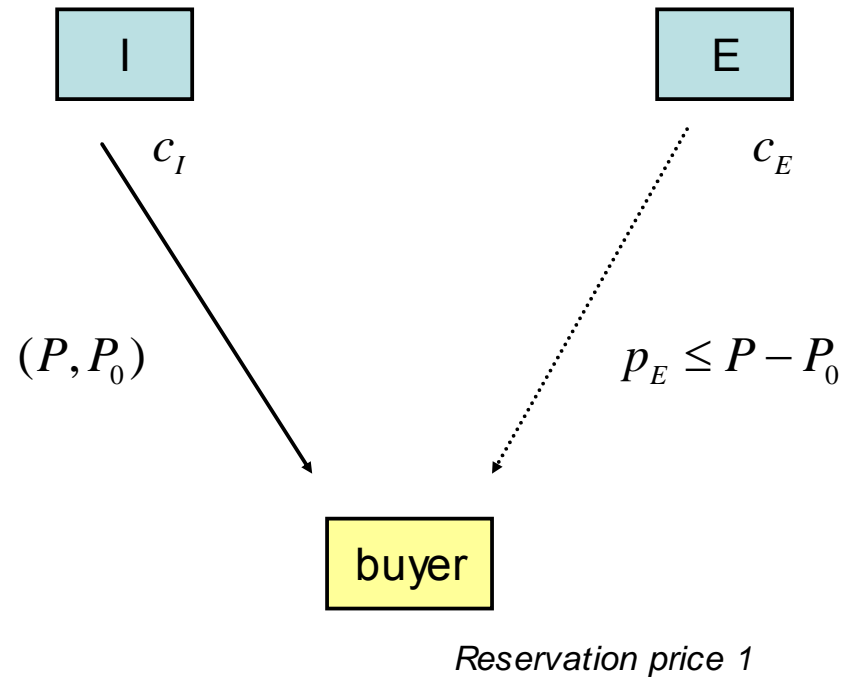
2.1 The original Aghion-Bolton model

- In Aghion and Bolton (1987), an incumbent offers an exclusivity contract to the buyer ahead of the decision by a potential entrant to enter the market.
- The contract provides for *liquidated damages* to be paid in case of breach. Used by the incumbent to extract surplus from efficient entrant.

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- If cost of entrant is not known in advance, then incumbent acts as a monopsonist: trades off likelihood of extracting surplus (i.e. of entry) with size of surplus → distorts entry pattern

2.2 Our model

- Four players:
 - Main buyer: buys at most one unit, reservation price 1, risk-averse
 - Fringe buyer: buys at most ε unit, reservation price 1, risk-neutral
 - Incumbent: cost c_I , expected profit-maximizer
 - Entrant: cost $c_E \in [0,1]$, expected profit-maximizer
- We assume that ε is so small that the entrant needs to sell to the main buyer in order to cover entry cost $\varepsilon(1 + \varepsilon)$

- Timing:
 - Stage 1: incumbent offers contract to main buyer
 - Stage 2: main buyer accepts or rejects contract
 - Stage 3: cost of entrant realized; entrant decides about entry
 - Stage 4: prices are simultaneously set by active firms (Bertrand competition)

- Different contracts:
 - exclusivity contract (P, P_0)
 - forward contract: incumbent receives difference between the forward price f and the spot market price p
- Efficiency requires that:
 - incumbent fully insures main buyer (pays the same price for the good with or without entry)
 - entrant enters whenever she is more efficient than incumbent (lower ATC of production)

3. Analysis

3.1 No contract

- Entrant enters when efficient and price at c_I .
- Captures all efficiency gains.
- Main buyer bears “risk of entry” (price variability). Utility given by

$$V^{NC} = (c_I - \varepsilon)U(1 - c_I)$$

3.2 Exclusivity contract

- Stage 4. Upon entry, to make a sale the entrant must post a price such that

$$p_E \leq P - P_0$$

So, outcome in pricing subgame depends on contract that has been previously signed.

- As a result, entry profitable when

$$c_E < \min\{c_I, P - P_0\} - \varepsilon$$

- In Stage 2, buyer accepts contract iff he gets at least as much as in the no-contract case.

- In Stage 1, the main buyer faces the following programme:

$$\max_{P, P_0} \phi^{EC} P_0 + (1 - \phi^{EC})(P - c_I) + (1 - \phi^{EC})(1 - c_I)\varepsilon$$

s.t.

$$(i) \quad U(1 - P) \geq (c_I - \varepsilon)U(1 - c_I)$$

$$(ii) \quad \phi^{EC} = \min\{c_I, P - P_0\} - \varepsilon$$

- Incumbent has all bargaining power: P will be set so as to bring main buyer down to its reservation utility

- Incumbent still choose P_0 so as to affect the likelihood of entry. In principle, this is similar to a monopsony problem: as if incumbent always sold the good to the main buyer but could buy the input at price $P - P_0$ upon entry instead of producing it at cost c_I
- Indeed, forgetting about the fringe buyer, the incumbent's profit can be rewritten

$$(P - c_I) + (P - P_0 - \varepsilon)[c_I - (P - P_0)]$$

- Entry is over-deterred (standard monopsony distortion). The incumbent repatriates the gains associated to risk-sharing but also some of the gains associated to efficient production.

3.3 Forward contract

- In Stage 4, main buyer perfectly hedged. Incumbent still cares about posting a low price so as to attract the fringe buyer → standard Bertrand competition
- Stage 3: entrant enters whenever more efficient
- Incumbent extracts all gains associated to efficient risk-sharing but entry is not distorted.

3.4 Normative implications

- Because incumbent has all bargaining power, main buyer gets the same utility in all cases.
- Profit of incumbent is higher under exclusivity contract: if he has choice of contract terms in Stage 1, model predicts emergence of exclusivity clauses
- Outcome with forward contract Pareto-dominates outcome in absence of any contract

- Outcome with forward contract preferred by entrant whereas incumbent prefers exclusivity contract. Because of inefficient entry, joint profit decreases under exclusivity
- Comparing exclusivity with absence of contract, trade off: inefficient entry but efficient risk-sharing → if main buyer is sufficiently risk-averse, exclusivity is preferable.
- Conclusion: defense of exclusivity contracts admissible only if financial instruments are not available.

3.5 Caveat

- We assumed the forward contract was signed on one unit, leading to perfect hedging
- Incumbent may have incentive to deter entry again if allowed to take a speculative position.
- Reason: has an interest in inducing the entrant to price low, so as to be able to extract even more surplus through the contractual transfer.
- By taking a position, incumbent can commit to be aggressive (to benefit from a low spot market price)

- This strategy is always more costly than exclusivity contract because (i) main buyer is no longer insured and that decreases willingness to sign on the contract and (ii) when entry does not take place, the incumbent sells below production cost to both the main and the fringe buyers; net loss on the fringe buyer
- In the absence of exclusivity contract, profitable only when main buyer is not too risk-averse. Outcome is then very bad: inefficient risk allocation and inefficient entry.

- Special circumstances: exclusivity contracts are not available, fringe buyer is small, speculative position bigger than total industry size, main buyer is not very risk-averse, and financial positions are observed by entrant

4. Related literature

- Lot of papers dealing with exclusion or efficiency gains from exclusivity in isolation. Few papers try to address trade-off: Spiegel (1994), Fumagalli, Motta and Rønde (2007) study relationship-specific investment
- Several papers have studied the contracting decisions of firms with market power and their impact on product market competition: Allaz and Vila (1993), Willems (2005), Mahenc and Salanié (2004).