Market Entry, Fighting Brands and Tacit Collusion by Marc Bourreau, Yutec Sun, and Frank Verboven

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Arrival of fourth operator Free with low-quality brand
Response by incumbents: introduce their own low-quality brands

One-shot game cannot explain the response

- An incumbent that operates FB after entry would have introduced it before entry

Repeated game with semi-collusion
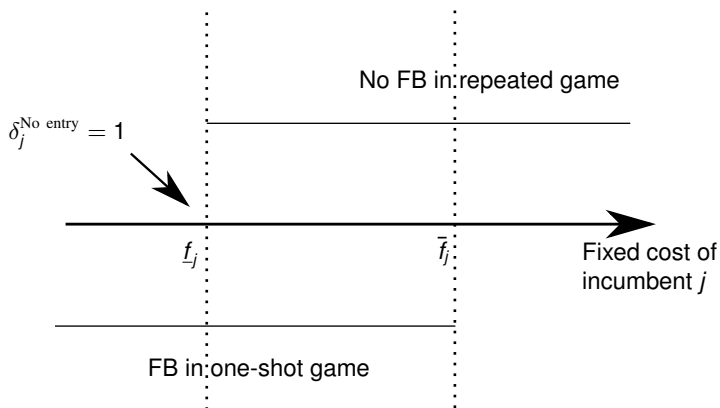One-shot price competition. Collusion is on not introducing FB

Figure 1: Equilibria in the absence of entry: "No FB" is observed

Repeated game with semi-collusion
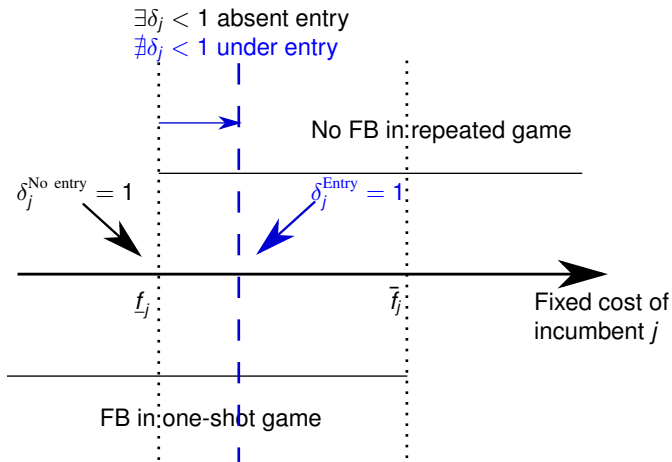Collusion more difficult under entry

Figure 2: Equilibrium under entry: "FB" is observed

Mechanisms?

- Johnson and Myatt (2003)
- Nocke and Schutz (2018)

Johnson and Myatt (2003): Vertical differentiation

Baseline example

- Two exogenous qualities $q_1 < q_2$, with $c_1 = c_2 = 0$
- 2 types of consumers: $\theta_L < \theta_H$ in proportions $\alpha_H + \alpha_L = 1$
- Utility: $\theta q - p$

Monopoly

- As $c_1 = c_2$, monopolist only uses q_2
- In contrast here: $c_1 < c_2$
  - physical retail, more intensive use of infrastructure, optional extra-SIM card, real-time billing
- If $\alpha_H \theta_H > \theta_L$, L-consumers are excluded

Johnson and Myatt (2003): Duopoly
Entrant E can produce only low quality q_1 ($\alpha_H < 1/2$)

Market expansion

- No exclusion: All consumers are served (Welfare increases by $\theta_L q_1$)

Here: What about quantities?

- Table 3 show market shares, which add up to more than 100%
- Share of the outside option? Document market expansion?

Johnson and Myatt (2003)
Entrant E can produce only low quality q_1 – Quantity competition ($\alpha_H < 1/2$)

H-consumers benefit from competition: p_2 falls

- Incumbent earns monopoly rent only on "upgrade" $q_2 - q_1$

L-consumers pay their valuation for basic quality

- Cournot competition and discrete distribution commit I not to "undercut"
- I simply complements quantity of entrant, leaving room for the entrant
- Not much fight on basic quality!

Three months before the entry of Free, Orange announced very high prices
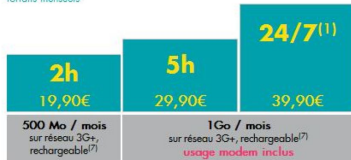
(a) Sept 2011: Not too aggressive!
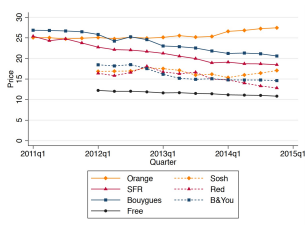
Figure 1: Prices of mobile services by product line brands

(b) No undercut?

Figure 3: Timing

- Early 2012, "maverick" Free launched very aggressive offer at 20€
- Orange responds by decreasing price to 25€ (5€for brand premium?)

Collusive price for low-quality brand?
Incumbents do not "undercut"?

Could these events be consistent with

- Static price competition in a Stackelberg game?
- Dynamic game with price collusion?
    - Market share agreement a few years ago ("pacification of the market", "Yalta of market shares")
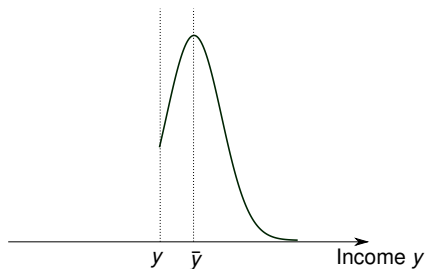
Here semi-collusion is postulated

Heterogeneity in valuations for quality

Johnson and Myatt (2003): two distinct market segments, non-monotonic marginal revenue
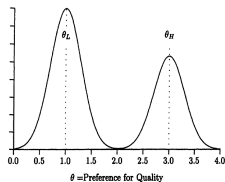
(a) Johnson & Myatt example

(b) Bourreau et al. (2018)

Figure 4: Heterogeneity in preferences

Level and dispersion of taste for quality θ

- Here one parameter (σ_ν or α) for both. Identification from $\bar{y}$ or from σ_y?
- (BLP have separate terms for level and distribution: $(\bar{\beta} + \sigma_\nu y_{it})q$)

Nocke and Schutz (2018)

IIA at odds with

- empirical results that there is dispersion in valuation of quality θ
- consumers with different types purchasing different qualities
- the notion of segmentation (low-end / top-end segments)

Only mention quality as a multiplicative factor a_j in consumer surplus

$$\ln \sum_j a_j \exp(\theta_j q_j - p_j)$$

No consumer heterogeneity in θ_j

Miscellaneous

- Quality attributes as endogenous as prices?
  - e.g., call and data allowances, international calls
- Link with Internet offers? (quadruple play?)