

Dynamic Vertical Foreclosure

Chiara Fumagalli (Bocconi University and CEPR)

Massimo Motta (EC-CET and Barcelona GSE-ICREA)

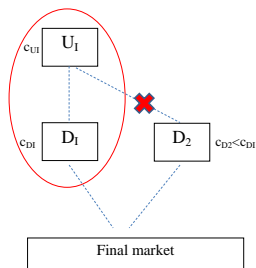
WORK IN PROGRESS

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Vertical Foreclosure

A vertically integrated firm, that dominates one market, acts in such a way to exclude (or marginalize) rivals in vertically related markets.



DIFFERENT PRACTICES: refusal to supply, interconnection/quality degradation, delays in input provision, margin squeeze.

A Debated Issue

The Chicago School Critique

- A vertically integrated firm, that controls an essential input, has the **ABILITY** to exclude downstream rivals, but rarely the **INCENTIVE** to do so, in particular if the downstream rival is more efficient than the own affiliate.
- The control of the bottleneck input enables the upstream monopolist to earn larger profits by trading with the more efficient downstream rival and **EXTRACTING (A LARGE PART OF) ITS RENTS**, rather than excluding it.

Existing Theories of Vertical Foreclosure

Imperfect Rents Extraction

- Existing theories identify the circumstances under which upstream monopolist is able to extract **LITTLE** rents from the more efficient downstream rival.
- For this reason more profitable not to trade with it and to monopolize the final market through the less efficient affiliate.
 - ▶ Regulation (Jullien, Rey and Saavendra, 2014; Fumagalli, Motta and Calcagno, CUP).
 - ▶ Opportunistic behavior (Hart and Tirole, 1990; Rey and Tirole, 2007; Reisinger and Tarantino, 2015).
 - ▶ Uncertainty and risk aversion (Hansen and Motta, 2013).
 - ▶ Competition in the provision of the input - Raising rivals' cost (Ordover et al. 1990; Allain, Chambolle and Rey, 2016).
- All these theories have a **STATIC** perspective.

THIS PAPER: Incentive to engage in vertical foreclosure does not stem from imperfect rent extraction. Rather, it has a **DYNAMIC** component.

Dynamic theory of vertical foreclosure

- In our setting rent extraction is not a problem \Rightarrow in a **STATIC** perspective (i.e. considering the current market structure as fixed) the incumbent would have no incentive to foreclose the activity of an independent downstream rival.
- Instead, in a dynamic perspective the incumbent may have an incentive to engage in refusal to supply to a downstream rival even though it **SACRIFICES CURRENT PROFITS**: by so doing, it will affect the future market structure and will earn **LARGER PROFITS IN THE FUTURE**.

Literature on exclusion based on scale economies

- There exist situations in which the incumbent, **BY DEPRIVING THE RIVAL OF CRUCIAL SALES/PROFITS/BUYERS, IMPAIRS THE RIVAL'S ABILITY TO COMPETE** in other markets/periods or for other buyers.
 - ▶ Scale economies (supply and demand side), learning effects, financial market imperfections...
- The incumbent can exploit this mechanism through many different practices:
 - ▶ Exclusive dealing: Rasmusen et al. (1991), Bernheim and Whinston (1998), Segal and Whinston (2000).
 - ▶ Tying: Carlton and Waldman (2003).
 - ▶ Predatory pricing: Bolton and Scharfstein (1990), Cabral and Riordan (1994, 1997), Fumagalli and Motta (2013).
 - ▶ Selective price cuts and rebates: Innes and Sexton (1993), Karlinger and Motta (2012).

THIS PAPER: focus on refusal to supply.

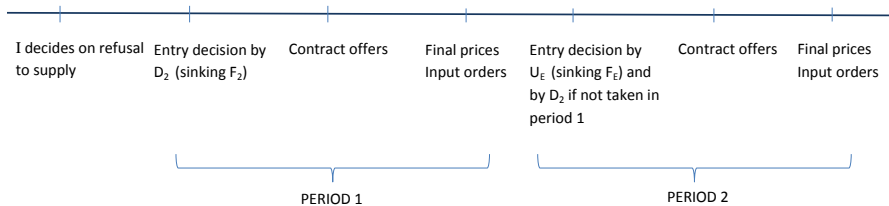
The Model

- Vertically integrated incumbent $U_I - D_I$.
- Downstream entrant D_2 and upstream entrant U_E .
- The entrants are **NOT VERTICALLY INTEGRATED**.
- The entrants are more efficient than the incumbent's affiliates.
- The entrants have to pay a sunk entry cost.

$$F_E < c(1 - 2c) \tag{A1}$$

$$c(1 - 2c) - \frac{(1 - c)^2}{8} < F_2 < c(1 - 2c) + \frac{(1 - c)^2}{8} - \frac{(1 - 2c)^2}{8} \tag{A2}$$

The Time-line



No Refusal to Supply

Entry decision in the first period

If the incumbent does not engage in vertical foreclosure, then D_2 enters downstream in the first period and U_E enters upstream in the second period.

- By assumption $A2$ the total profits collected by the downstream firm in the first and in the second period are sufficient to cover the entry cost.
- if there is downstream entry, upstream entry is profitable.

Refusal to Supply

Entry decision in the first period

- If the incumbent engages in refusal to supply, then D_2 **DOES NOT ENTER THE DOWNSTREAM MARKET**:
 - ▶ Refusal to supply prevents firm D_2 from earning profits in the first period.
 - ▶ If scale economies are important in the downstream market, second period profits alone are insufficient to cover the fixed costs

⇒ refusal to supply deprives the downstream rival of the key profits it needs in order to operate profitably in the downstream market.
- Lack of downstream entry makes upstream entry less profitable (⇒ less intense competition for input procurement)
- If upstream entry costs are large enough, **UPSTREAM ENTRY WILL NOT OCCUR IN THE SECOND PERIOD.**

Decision to engage in Refusal to Supply

Case I: large F_E

- No refusal to supply \Rightarrow downstream entry in period 1 \Rightarrow upstream entry in period 2 \Rightarrow the incumbent's profits in period 2 are zero.
- Refusal to supply \Rightarrow no downstream entry in period 1 \Rightarrow no upstream entry in period 2 \Rightarrow the incumbent make monopoly profits in period 2.

The incumbent sacrifices profits in the first period **TO PROTECT ITS MONOPOLY POWER IN THE UPSTREAM MARKET.**

- In a **STATIC** context the incumbent would never engage in refusal to supply: it benefits from the presence of a more efficient downstream firm.
- However, current downstream entry, by intensifying competition for input procurement, would **OPEN THE WAY TO FUTURE UPSTREAM ENTRY** and the incumbent's future profits would be entirely lost.

Decision to engage in Refusal to Supply

Case II: small F_E

In this case upstream entry occurs even absent entry downstream. This **REINFORCES** the incentives to engage in refusal to supply:

- No refusal to supply \Rightarrow downstream entry in period 1 \Rightarrow upstream entry in period 2 \Rightarrow the incumbent's profits in period 2 are entirely lost.
- Refusal to supply \Rightarrow no downstream entry in period 1 \Rightarrow Upstream entry in period 2 \Rightarrow the incumbent will be a safe downstream monopolist in period 2 and will extract rents from the more efficient upstream entrant.
- The incumbent sacrifices profits in the first period **TO TRANSFER MONOPOLY POWER** from the upstream to the downstream market.

Conclusions

Crucial ingredients for this theory of harm

- Important **TO LOOK AT FUTURE EVOLUTION OF THE MARKET** when assessing incentives to engage in vertical foreclosure.
- But intervention should not rely on a speculative assessment of possible market developments. Future entry/expansion must be **REASONABLY LIKELY**:
 - ▶ Patents are about to expire;
 - ▶ Known that a rival is preparing technology or investments to enter/expand.
- Vice-versa, if very high entry/expansion barriers, it is unlikely that this theory applies.

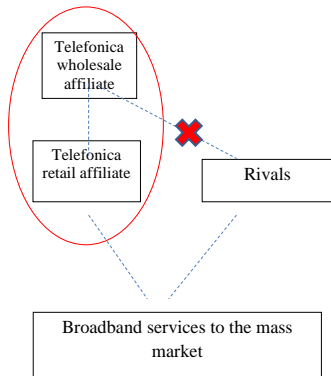
Conclusions

Crucial ingredients for this theory of harm

- **ASYMMETRY** between vertically integrated incumbent and entrants/rivals:
 - ▶ The rival in one of the vertically related markets needs to achieve critical sales (or scale, or profits, or reputation) in order to be successful. The incumbent does not.
 - ▶ **SCALE ECONOMIES** (from the supply or the demand side) need to be important in one of the vertically related markets.
- Vertical foreclosure to protect existing dominant position hinges upon a **LINK** between future upstream entry/expansion and current downstream entry/expansion (or the other way round), something which should be checked against the facts of the case.
- Exclusion less likely if entrants/rivals are **VERTICALLY INTEGRATED**.

Cases: Telefonica, EC 2007

- Upstream market: broadband access.
- Downstream market: broadband services to the 'mass market'.
- The EC argued that Telefonica abused its dominant position by engaging in margin squeeze in the Spanish broadband market, from September 2001 to December 2006.



Cases: Telefonica, EC 2007

The Facts

- Competitors could operate either via ULL or wholesale broadband access (at national or regional level).
- ULL requires a significant investment in own network but allows rivals to bypass Telefonica and to gain flexibility in the provision of services.
- National and regional wholesale access requires alternative operators to invest less but they have very little flexibility in the provision of the services.
- The EC focused on wholesale broadband access.

Cases: Telefonica, EC 2007

The Facts

- Telefonica had a market share of 84% in the market for national access and 100% in the market for regional access.
- Telefonica has around 55% of the retail market.
- Telefonica's retail prices were fixed through whole period; at the same time broadband speeds were upgraded and several promotional offers were made: discounts and waivers of connection fees, subscription fees, equipment fees.

Cases: Telefonica, EC 2007

The Test

- As efficient competitor test: would the margin between the retail price and the wholesale price allow an equally efficient competitor to cover the downstream LRAIC?
- LRAIC (product-specific costs) including costs for additional network elements needed to provide retail services, ISP recurrent costs, customer acquisition costs (advertising, incentives and commission to the sales network).
- Two types of analysis:
 - ▶ Year-by-year
 - ▶ Discounted Cash Flow analysis: whole period of abuse as relevant period to take into account that in a new market a firm may suffer losses in the first years of activity. (Possible drawback: revenues larger than costs over the whole period precisely because of the abuse)
- EC found squeeze under both tests. Good to find 'robust' results.

Telefonica, EC 2007

Incentive to exclude

- Possible theory of harm:
 - ▶ Investment in LLU allows rivals to bypass Telefonica and to gain flexibility in the provision of services.
 - ▶ But extremely costly and risky.
 - ▶ Gradual entry strategy: national, then regional, then LLU when achieved a **CRITICAL CUSTOMER BASE**. ('Ladder of investment theory')
 - ▶ Foreclosure prevents rivals from achieving such a critical customer base ⇒ discourages upstream investment in LLU.
- Downstream foreclosure to preserve the dominant position upstream.

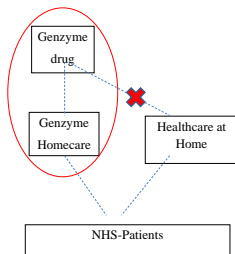
Telefonica, EC 2007

Incentive to exclude

- Is there a significant asymmetry between Telefonica and its rivals?
- France Telecom and Ya.com are backed by strong international telecom groups.
- Theoretical and empirical works show that financially fit groups engage in cross-subsidization thereby favouring entry (discouraging predatory attacks)
- Are these firms able to match Telefonica's retail prices and achieve the critical customer base despite the losses they have to suffer, thereby investing anyway in LLU ?
- Also, growing market.

Cases: Genzyme (OFT, March 2003)

- Genzyme only producer of Cerezyme, a drug for the treatment of a rare metabolic disorder (Gaucher disease).
- The drug needs to be administered to patients at home by specialized nurses.
- In May 2001 Genzyme launched its own delivery and homecare services and adopted a pricing policy that resulted in margin squeeze (Cerezyme is sold together with homecare services at the same price as the drug sold to downstream rivals .)



Cases: Genzyme (OFT, March 2003)

- The OFT argued that margin squeeze, by foreclosing the activity of independent providers of homecare services, had the effect of raising entry barriers in the **UPSTREAM** market.
- Possible theory of harm:
 - ▶ Alternative treatments were close to receive authorization to be marketed.
 - ▶ Alternative treatments need to be distributed by providers of homecare services with long-lasting relationship with patients.
 - ▶ According to expert witnesses: "...if there is change not just of the drug, but also of the arrangements for treatment, from the delivery driver that the patient meets each time, to the assisting nurse with whom a relationship may have been built and with whom the patient is content, then this is not an insignificant matter. "

Cases: Genzyme (OFT, March 2003)

Possible theory of harm

- Genzyme behavior was meant to exclude the existing provider (HH) and prevent new ones from building up a significant relationship with patients.
- In this way, either it would discourage entry by new drugs because reliable distribution would not be viable.
- Or it would be in the position to extract rents from new (possibly more effective) drugs.
- In the OFT decision the likelihood of future upstream entry is not entirely clear.