Economics on Demand

PRICING PRESSURE MEASURES IN MERGER CONTROL

21 November 2017
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Background
RANDOM LETTERS USED BY ECONOMISTS...

... or helpful tool to get to the heart of a merger case!

- What are they?
- Why do economists like them?
- Why should you like them?
FROM A COUNTING GAME TO RIVALRY.... A POTTED HISTORY

- 2004 – DG Comp’s Horizontal Merger Guidelines
- 2005 – Somerfield/Morrison’s
- 2010 – revised US and UK guidelines
- 2015 – ‘HMGs 5 years later’
- 2017 – CMA Retail Merger Commentary
Concerns have been raised that the metrics could:

- Diminish the role of market definition
- Reduce the authorities’ incentives to understand how the market works
- Create a rebuttable presumption with a high bar to respond to – efficiencies and repositioning arguments are rarely accepted by the authorities and barriers to entry are often a feature of the mergers investigated by the Commission
- Lead to greater intervention: the merger guidelines are silent on how the authorities would interpret the pricing pressure estimates against the SLC test
- Result in higher costs as the merger parties might need to undertake customer surveys
Theory
HOW FIRMS COMPETE IN THESE MODELS

- Firms set prices independently of one another – there are no cartels

- There is no price discrimination
  - Consumers are aware when prices change and firms are not able to charge different consumers different prices for the same thing

- Products are not homogenous
  - Consumers have different preferences for different products or particular product characteristics

- Prices in the market are currently in equilibrium

- Firms are symmetric
PRE-MERGER

Product A

Product B

Product C
WHAT IF THE PRICE OF PRODUCT A INCREASES PRE-MERGER?
WHAT IF THE PRICE OF PRODUCT A INCREASES POST-MERGER?

Product A ➔ Product B

Product C
THREE INPUTS FOR THE BASIC MODELS

- Economic profit margins
- Diversion ratio(s)
- Demand assumption

Pricing pressure estimate
THE MODELS

The basic pricing pressure models – the merger parties are assumed to be symmetric

<table>
<thead>
<tr>
<th>Pricing pressure measure</th>
<th>Demand assumption</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross upward pricing pressure index (GUPPI)</td>
<td>None</td>
<td>$md$</td>
</tr>
<tr>
<td>UPP</td>
<td>None</td>
<td>$md - ec$</td>
</tr>
<tr>
<td>Illustrative price rises</td>
<td>Isoelastic demand</td>
<td>$\frac{md}{1 - m - d}$</td>
</tr>
<tr>
<td>Illustrative price rises</td>
<td>Linear demand</td>
<td>$\frac{md}{2(1 - d)}$</td>
</tr>
</tbody>
</table>

- Note: that the symmetry assumption makes a major difference to the complexity of the equation. The asymmetric formula with linear demand for Firm 1 is:

$$\frac{2D_{12}}{p_1} \frac{p_2 - c_2}{p_1} + D_{12}D_{21} \frac{p_1 - c_1}{p_1} + \frac{(p_1 - c_1)^2}{(p_2 - c_2)p_1 Q_2} (D_{21})^2$$

$$4 - 2D_{12}D_{21} - \frac{p_2 - c_2}{p_1 - c_1} \frac{Q_1}{Q_2} (D_{12})^2 - \frac{p_1 - c_1}{p_2 - c_2} \frac{Q_2}{Q_1} (D_{21})^2$$
DEMAND ASSUMPTION
GRAPHICAL ILLUSTRATION – LINEAR IPR VS ISOELASTIC IPR

Linear demand illustrative price rises

- Diversion ratio 15%
- Diversion ratio 30%
- Diversion ratio 45%

Isoelastic demand illustrative price rises

- Diversion ratio 15%
- Diversion ratio 30%
- Diversion ratio 45%
DEMAND ASSUMPTION
GRAPHICAL ILLUSTRATION – LINEAR IPR VS ISOELASTIC IPR

Linear demand illustrative price rises

Isoelastic demand illustrative price rises

Illustrative price rises

Economic profit margin

Illustrative price rises

Economic profit margin

Diversion ratio 15%  Diversion ratio 30%  Diversion ratio 45%

Diversion ratio 15%  Diversion ratio 30%  Diversion ratio 45%
Graphical Illustration – GUPPI

Economic profit margin

Diversion ratio 15%
Diversion ratio 30%
Diversion ratio 45%
Quantification
Prices are not as easy to observe as you might think

Authorities may focus on costs that vary with output in the short run such as non-managerial staff, direct inputs, etc. These are often calculated by firms in their management accounts as their contribution margin.

But in many sectors of the economy – such as mobile telecoms - investment in quality, innovation, etc. are important aspect of competition, and these costs need to be recovered.

Including at least some of the relevant incremental costs, and not just short run variable costs, can provide a closer approximation to the costs that drive firms’ pricing decisions.

<table>
<thead>
<tr>
<th>Authority</th>
<th>Profit margin measure</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFT/CMA</td>
<td>Variable profit margin</td>
<td>Single price point retail (Poundland/99p)</td>
</tr>
<tr>
<td>CMA</td>
<td>% of retail gross win</td>
<td>Betting shops (Ladbrokes/Coral)</td>
</tr>
<tr>
<td>DG-Comp</td>
<td>Contribution margin but looked at subtracting some operating and capital expenditures</td>
<td>Mobile telecoms (H3G/Orange Austria)</td>
</tr>
</tbody>
</table>
DIVERSION RATIOS

Sources of diversion estimates:

- Customer surveys
- Pricing analysis
- Win/loss bidding data
- Event studies (for example store closures, supply outages, etc)
- Demand estimates
- Market shares
Two standard assumptions for pricing pressure measures: demand is either isoelastic or linear

- Linear – customers get more price sensitive very quickly
- Isoelastic – as the name implies, price sensitivity remains constant

The rapid increase in price sensitivity in the linear model means that the merging parties find it more difficult to raise prices post-merger than under isoelastic demand

The linear demand model therefore predicts lower post-merger price rises

We don’t observe the actual demand curvature and so we need to make an assumption
Intervention thresholds
Estimates of pricing pressure will always be positive (assuming that profit margins are positive) and the parties’ products are substitutes.

The academics who developed the first models advised that the authorities should give the merger parties an ‘efficiency credit’

The credit could be interpreted as reflecting:
- Measurement error
- Unmeasured variable cost efficiencies that will be passed through to consumers
- Wide confidence intervals
- Likelihood of mitigating factors
- Cost of falsely referring the case to Phase II
- The models are, by their nature, illustrative/back of the envelope

What percent pricing pressure would be an insubstantial lessening of competition or a insignificant impediment to effective competition?
Case study: mobile telecoms mergers
## PRICING PRESSURE INPUTS IN RECENT COMMISSION MOBILE TELECOMS CASES

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>Ireland</th>
<th>Italy</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E-Plus</td>
<td>Telefonica</td>
<td>H3G</td>
<td>O2</td>
</tr>
<tr>
<td><strong>Concentration in MNOs</strong></td>
<td>4-to-3</td>
<td>4-to-3</td>
<td>4-to-3</td>
<td>4-to-3</td>
</tr>
<tr>
<td><strong>Contestable demand</strong></td>
<td>New and retained subscribers</td>
<td>New and retained subscribers</td>
<td>Gross adds</td>
<td>Gross adds</td>
</tr>
<tr>
<td><strong>Diversion ratios:</strong></td>
<td>Not specified (likely retail)</td>
<td>Retail</td>
<td>Both</td>
<td>Both</td>
</tr>
<tr>
<td>Retail / network</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diversion ratios:</strong></td>
<td>Included and excluded</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Cross-segment switching</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>Clearance with remedies</td>
<td>Clearance with remedies</td>
<td>Clearance with remedies</td>
<td>Prohibition</td>
</tr>
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Case study: retail mergers
Long history of the CMA using pricing pressure measures in retail mergers with many local overlaps

For the local market assessment:
- An initial screening filter based on share of shops/fascia count
- Consumer surveys at the stores of one or both of the merger parties’ stores
- Estimating DRs and margins
- Calculating a pricing pressure measure
- Comparing the estimates to a threshold

For the national market assessment:
- Consider concentration and closeness of competition at the national level
- Consider an ‘aggregate diversion ratio’ (Poundland/99p stores)
• Primary filter: the Parties have 35% or more of the share of pubs in the local geographic market and the increment is 5% or greater
  • This narrowed the scope of the investigation to 56 pubs

• Second stage:
  • Consider the constraint posed by wet-led pubs
  • The geographic proximity of the parties’ pubs and the constraints from competitors’ pubs
  • Drive time isochrone flexing
  • Diversion estimates from surveys
  • Review of marginal sites

• Resulted in 16 local areas with concerns remaining
TESCO/SOMERFIELD (AKA ‘THURSO/WICK’)
## RECENT UK EXAMPLES (I)

<table>
<thead>
<tr>
<th>Case</th>
<th>Index</th>
<th>Diversion ratios</th>
<th>Profit margins</th>
<th>Pass-through/demand</th>
<th>Threshold</th>
<th>(Extra?) Efficiencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poundland/99p (2015)</td>
<td>IPR</td>
<td>Customer surveys, weighted depending on geographic overlap</td>
<td>Variable profit margin, sense-checked with gross profit margins</td>
<td>Linear demand</td>
<td>Not specified</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ladbrokes/Coral (2016)</td>
<td>GUPPI</td>
<td>DRs from surveys combined with weighted share of shops (WSS); calculated weighted average for UK-wide analysis</td>
<td>Local analysis: % of retail gross win. UK-wide analysis: average variable profits for previous two years</td>
<td>Could not be reliably estimated</td>
<td>Based on WSS (35%) in the local analysis; GUPPI &gt; 10% in the UK-wide analysis</td>
<td>No</td>
</tr>
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</table>
# RECENT UK EXAMPLES (II)

<table>
<thead>
<tr>
<th>Case</th>
<th>Index</th>
<th>Diversion ratios</th>
<th>Profit margins</th>
<th>Pass-through/demand</th>
<th>Threshold</th>
<th>(Extra?) Efficiencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Lloyd/16 Virgin Active gyms (2017)</td>
<td>N/A</td>
<td>Survey</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Just Eat/Hungry House (2017)</td>
<td>N.A</td>
<td>Event study using times when Just Eat offered discounts</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Questions