Too Concentrated?

In antitrust analysis, it is frequently assumed that there is a positive relationship between price in a market and the degree of concentration in that market. The assumption is that the higher is the concentration, the higher is the market power of the firms in the market and so the higher are prices relative to the competitive level.[1]

However, this statement masks two complex questions. First, what is the relevant antitrust market within which market shares should be calculated? Second, what level of concentration is "too much": how concentrated does a particular market have to be before prices will rise above the competitive level?

Unfortunately, there is no magic number, no general level of concentration at which concentration becomes "too high".[2] The critical level varies from industry to industry depending on a host of conditions (such as, for instance, the minimum efficient scale of production in the industry). These two problems make merger control a difficult and contested subject.

Fortunately, there are empirical techniques available that circumvent these questions by looking at direct evidence in similar markets. Unfortunately, many of these opportunities are missed. It is often possible to demonstrate empirically that a particular merger is unlikely to lead to reduced competition and hence higher prices. The fact that these opportunities are missed frequently is part of a general problem: in European antitrust proceedings there are too many assertions and not enough empirical analysis.

Price concentration studies

A simple, but frequently powerful, technique for studying this type of problem is to carry out a *price-concentration* study. These studies are especially useful where there are several distinct geographic markets and the alleged problem arises in only one (or a few) of these markets. The core idea is simple: compare different markets and see whether those markets in which concentration is higher tend also to be those in which price is higher. In a merger case, if there appears to be no systematic relationship across markets between price and concentration, then this is one piece of evidence that the merger will not lead to higher prices as a result of the increase in concentration. Equally, if there appears to be a positive relationship between price and concentration (i.e. price is systematically higher where concentration is higher), this suggests that the merger may lead to higher prices. In an Article 86 case, evidence of the absence of a relationship between price and concentration implies that a high market share does not bestow market power.

At the most basic level, a price-concentration study requires data on concentration within the markets and the prices in each market. Both of these variables should be relatively easy to collect. The standard measure of concentration is the Herfindahl Hirschman Index (HHI).[3] Measuring the way price varies across different markets is usually quite simple, but not always. Sometimes the appropriate measure is not the actual wholesale or retail price but rather the margin over some cost. If you need to control for more than one input cost it may be necessary to use statistical methods in order to measure these variations accurately.

As with most techniques, price-concentration studies can be carried out at varying levels of sophistication. The level of sophistication used is usually driven by the nature of the data available. Of course, the more sophisticated the analysis, the more weight can be put on its results. But, as we said above, even simple price-concentration studies can be very powerful.

Two examples

An example of a simple but powerful study is provided by an analysis carried out by our colleagues in the US. In this case the question of interest was whether cinema prices are higher when there is only one cinema circuit in a city than when there is more than one. To test this we took each city in which there was only one cinema circuit and then matched it with another city with more than one circuit but which had similar characteristics (i.e. similar size, similar demographic make-up, similar per capita income, and so on). We then compared prices across the city pairs to see if prices were systematically higher in those cities where there was only one cinema. The result was a table similar to Table 1:[4]

1 The question of how to determine the competitive level is interesting and complex, but it is not considered in this Memo.

2 Indeed, in a perfectly contestable industry, even a monopolist could not raise price above the competitive level.

3 The HHI is a way of collapsing the different market shares of the suppliers in a market into one unique number. It is calculated as the sum of the squares of all the individual market shares.

4 For reasons of confidentiality we are not using the names of the actual cities used in the study.

Table 1: Indicative results of a price-concentration study of US cinema admission prices

	Single cinema circuit cities		Multiple cinema circuit cities	
	City	Admission Price($)	City	Admission Price ($)
Pair A	Charleston	5.0	Fort Wayne	5.1
Pair B	Rapid City	6.1	Hastings	6.0
Pair C	Bellingham	5.5	Monterey	5.5
Pair D	….			

From this small sample, it looks clear that prices are not systematically higher in those cities where there is only one cinema circuit. This result is borne out in the full sample in which 26 city pairs were matched.[5]

Earlier this year we carried out a more sophisticated price-concentration study as part of the proceedings related to the StatOil/Conoco merger in Ireland. Conoco had sold its petrol stations (branded as "Jet") to StatOil, an expanding oil company based in Norway. StatOil already held 11% of the Irish market and Conoco held a further 14%, leading to a potential combined post-merger market share of 25% in an already concentrated market. The Irish Competition Authority advised that the merger should be blocked. In the light of this, the Parties decided to submit further evidence to the Minister. Part of this further evidence was a price-concentration study in which the level of concentration in petrol retailing in various European countries was related to the price of petrol in that country. The nature of the oil industry meant that we were able to control for various cost factors. The results of this study showed that there appeared to be no systematic relationship between the price of petrol in these countries and the level of concentration at the retail level.[6]

Limitations of price-concentration studies

We do not mean to imply that price-concentration studies can always provide the definitive test of the relationship between concentration and price. Price-concentration studies do not seek to explain the determination of prices: they seek only to show that concentration is not one of the determining factors. So, in a sense, they are negative tests that do not greatly increase our understanding of how an industry works. A more impressive test would be to show that the variation in prices across geographic markets *can* be explained and that concentration has nothing to do with that explanation. A study of this form, however, tends to require more data than a simple price-concentration study and so is feasible less often.

What Theory?

We stated earlier that price-concentration studies can help to finesse two difficult questions in antitrust analysis. The first is the question of the correct relevant market definition, the second is the question of how concentrated the relevant market has to be before prices begin to rise above the competitive level. One of the appealing features of a price-concentration study is that evidence that price is not related to concentration (within the relevant range of variation of concentration) is compatible with a wide variety of possible theories of how the particular industry works. There are four main reasons why concentration might not be related to price in a market:

- the relevant market is wider than the market in which the HHIs have been calculated (i.e. high elasticity of demand for the products in the market);[7]
- there is a high degree of supply-side substitutability into the market;
- new entry into the market is easy;
- the nature of the industry makes it difficult for firms to co-ordinate on a price above the competitive level (for instance, due to excess capacity in the industry).

It is not necessary to decide *which* of the four explanations is the correct one. Thus a price-concentration study offers us the considerable luxury of being able to avoid extended discussions over market definition and over what degree of concentration within the relevant market is acceptable.

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5 A more sophisticated approach would be to use econometric analysis to model variation in cinema prices across cities. The analysis would seek to determine whether after adjusting for income, region, etc., the number of cinemas in a city had any further effect on price.

6 After the Parties had submitted additional evidence to the Minister, he chose not to follow the advice of the Competition Authority and instead cleared the transaction subject to undertakings.

7 The explanation could also be that the relevant market is actually narrower than that for which the HHIs were defined, but given the general tendency of competition authorities to define markets overly narrowly, this is likely to be a very rare circumstance.

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