

CPI's Europe Column Presents:

UPP Stories from Sweden

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Effect-based approaches are rapidly gaining momentum in competition circles, especially so in merger review processes where the lack of suspicions of collusion or abuse of dominance makes models of non-cooperative strategic interaction most relevant. A prominent example of this trend is the increasing popularity and application of the Upward Pricing Pressure (UPP) framework that has been welcomed by some while highly criticized by others.

The UPP framework is the name commonly used to describe a collection of approximate solutions to the profit maximizing problem of the merging parties aimed at catering to the need for time-efficient processes due to the tight deadlines imposed by the strict regulatory framework of merger reviews. UPP is in essence the solution of the first order conditions of this problem, calculated at pre-merger prices. Solving at pre-merger prices is the key simplifying factor that makes this framework analytically far easier than the alternative of a full merger simulation.

The other measures associated with the more commonly used UPP are: (i) the Gross Upwards Pricing Index (GUPPI) which is the UPP once potential cost efficiencies from the merger are assumed to be equal to zero, (ii) the Compensating Marginal Cost Reduction (CMCR) index that asks what cost efficiencies would be required for the post-merger profit maximizing prices of the merging parties to be exactly equal to their pre-merger prices, and (iii) the Indicative Price Rise (IPR) index that introduces an assumption about the underlying demand function in order to quantify the expected increases in prices. What all these measures have in common is that they offer slightly different ways of looking at the merging parties' incentives as captured by the first order conditions of their profit maximization problem and are very closely related despite some subtle differences. Interestingly enough, all four measures can be calculated using the same four terms: the diversion ratios among the merging products and their markups (defined as $(p - mc)/p$ where mc is each product's marginal cost). Under the assumption that the merging parties are symmetric, the number of terms that need to be estimated is only two.

The relative ease of the calculations involved along with the fact that each index gives a different numerical result has inevitably led critics of the approach to denounce these measures as overly simplistic and confusing. Their opinion is often that these indices can at best only be used as a Phase I screening tool. But neither of these critiques does a fair justice to a framework that is well founded on profit maximizing behavior and produces a set of different results that answer slightly different questions that one has to be aware of when interpreting the outcome of the calculations.

As with any recipe, the end result is only as good as the ingredients used. What is perhaps the single most important benefit of the UPP framework is to shift the attention on what matters most for evaluating horizontal mergers, namely how close substitutes the merging products are to each other (measured by the diversion ratio, which is a function of the cross price elasticity between the products) and how price elastic consumer demand is (measured inter alia by the merging parties' markups through the Lerner index, according to which, the profit maximizing markup of each product is equal to minus the inverse of its own price elasticity, $L = (p_i - mc_i)/p_i = -(1/e_{ii})$). There is no way around the fact that a merger will be all the more problematic the closer substitutes the merging products are to each other and the less elastic consumer demand for these products is.

The Swedish Competition Authority (SCA) has incorporated this framework as an important part of its merger review investigations. The relevant theory as well as a hands-on description of the actual implementation in several recent cases has been the subject of a [recent working paper](#) by a group of SCA in-house economists. The SCA's attitude is to calculate the whole set of indices, especially in cases that concern consumer goods, and place all the more weight on the resulting values the better the quality of the estimates of the input values that are available or estimable.

The SCA's approach to the UPP framework can be summarized as follows. First, the SCA produces crude estimates of all the indices with the best available information that the parties can supply or the investigative team manages to estimate during Phase I. The SCA uses these results as part of an initial screening test. At this stage it might be useful to take a "worst-case scenario" approach and err on the side of overestimating the relevant inputs. If the resulting values are still of little to no concern there might be no need to proceed with a Phase II (assuming no red flags are raised during the rest of the investigation). Should these original values be large enough that a Phase II investigation is warranted, the SCA assigns part of the investigative effort during Phase II in acquiring better estimates of the diversion ratios between the merging parties and of their markups. If such estimates of sufficient quality can be recovered, the SCA calculates a new set of indices that can be used to inform the final decision. The SCA never considers these results in isolation, even more so during Phase II, but always together with other quantitative and qualitative evidence and has repeatedly reached the decision not to object a merger despite worrisome high UPP values due to other considerations such as low barriers to entry, the importance of competitive parameters other than pricing and current market developments.

A plethora of sources can offer usable estimates of the diversion ratios between the merging products. Most commonly: (i) in a lot of industries the firms themselves routinely carry out market and consumer preference studies that investigate exactly the question of substitutability among different brands/products, (ii) substitution patterns can be inferred from market data such as scanner data, when available, although such an exercise can be technically challenging, (iii) authorities with sufficient resources can carry out their own consumer surveys during the merger investigation, a practice that requires a certain degree of familiarity with such studies, and (iv) assuming one is willing to accept that market shares capture the relative attractiveness of each product (the so called proportionality assumption) one may calculate diversion ratios in proportion to each brand's market shares. The margin of each product can be estimated by collecting turnover and cost data from the merging parties but care must be taken in separating fixed from variable costs and this task can be somewhat challenging, especially for multiproduct firms that have to also assign common costs to the different products. If appropriate estimates of each product's demand elasticity are available one may infer what the margins are from the Lerner index equation. Alternatively, marginal costs can be estimated econometrically but that exercise is almost as complex as carrying out a full merger simulation.

In recent years, the SCA has applied this methodology in several different merger cases in a wide range of markets such as office supplies retail, dairy products production, directory enquiry services, brick and mortar bookstore retail, candy manufacturing, and weight-loss products wholesale, to name a few. Some cautionary words are in order. The methodology does not offer itself for bright line tests since no obvious thresholds exist yet as to which values are too high. Even though there is a point to be made that extremely low values are reason

enough not to be concerned and extremely high values are reason for obvious concern, in most of the cases the results will lie somewhere in between and will require the investigative team to make an objective judgment call taking into consideration the rest of the available market information. Recovering good estimates of diversion ratios can also prove challenging and authorities would need to develop significant in-house competence in forming appropriate consumer surveys and analyzing cost data in order to identify variable cost markups. When investigating the proposed merger between Sweden's two largest brick and mortar book-store chains (Akademibokhandel and Bokia) in 2012, the SCA commissioned exit-interviews at several outlets of each chain in order to guarantee representative results. A snow-storm on one of the locations on the day that the survey was scheduled to be conducted meant that no sufficient answers were recovered from the particular location and those results had to be discarded. In the case of the proposed merger between two cheese manufacturers (Arla and Falbygdens) in 2014/15 it became crucial to prepare the survey under an extremely tight timeframe in order to carry it out with as wide a margin as possible from the approaching Christmas season, a time that Swedish cheese consumption is known to exhibit a strong seasonal anomaly (cheddar and/or edam cheese can never be absent from a Swedish Christmas table and sales spike to the detriment of other cheeses).

It is worth stressing that the UPP framework might well be the most analytically advanced tool national competition authorities, with limited resources, can realistically apply within the tight framework of a merger review process. This does not make it a simplistic tool. Although more advanced methods, such as merger simulation, potentially offer a more rigorous solution to the profit maximization problem of the merging parties they do suffer from almost exactly the same set of shortcomings as the UPP framework, namely that they do not address issues such as market entry, product repositioning, and dynamic market developments. Those issues can be more easily captured by other investigative methods that can and should supplement any UPP calculations. It should be obvious from the above that the use of the UPP framework requires a healthy degree of familiarity with the concepts applied and the investigative methods required in retrieving the relevant inputs. It is highly recommendable that authorities invest in building this competence since the issues of closeness of competition and demand elasticity are core to most competition policy considerations even if not applied in a UPP framework. Finally, competition authorities are not the only stakeholders that stand to gain from better familiarizing themselves with these concepts but they can take the lead in distilling them to lawyers, judges and businesses thus contributing to more effects-based decisions in as many jurisdictions as possible, a move that could pave the way for even more advanced analytical tools to gain traction later on.