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Cartel Damage Pass-through

How economics can provide rules of thumb on who bears the overcharge

Assessing damages in cartel cases is complicated where there is a passing-on defence. As cartels predominantly feature in commodity or intermediate goods industries, which feed into a chain of buyers before reaching the final consumer, the extent of the loss to direct and indirect purchasers will be disputed by the defendants. They will inevitably plead that buyers have passed the overcharge onto successive downstream purchasers and that it is borne by the end consumer. As overcharges are dissipated through a chain of firms and purchasers, the extent of harm and its distribution amongst different parties becomes increasingly difficult to quantify. Here we examine how economics can assist in determining incidence and damages arising from cartel overcharges where there is a passing-on defence.

The issues

A cartel collectively restricts output to raise prices. As a result the buyers of the cartelised product are overcharged. This overcharge often forms the basis of a claim for damages. Clearly the direct purchasers of the cartelised product pay the overcharge. But they will pass it plus a mark-up onto their customers, so that their net loss may be less than the full overcharge. Their customers (the indirect purchasers) may also be able to do the same. Thus an unknown proportion of the overcharge may be passed through each successive link in the supply chain. This poses a problem for claimants, defendants and the courts – not only is it necessary to examine market conditions in the cartelised industry to estimate the overcharge but also that of one's customers. This is a daunting task which some legal regimes have resolved by limiting claims to direct purchasers only.

Economics can be used to suggest some rules of thumbs to assist the parties in determining the incidence of cartel overcharges between direct and different indirect purchasers. The key factors are market structure, demand and supply elasticities, and price mark-ups.

Market Structure

The pass-through of an overcharge is determined in large part by market structure. If the direct purchasers' market is effectively competitive they will be able to pass through the full cartel overcharge to their customers (at least in the longrun). If all markets in the supply chain are competitive, then the overcharge is borne by the end consumers. Thus under competitive conditions the damage suffered by the direct and indirect purchasers who are not the final consumers is negligible.

If, on the other hand, these markets have only a few direct and indirect purchasers, or are highly concentrated, then only a fraction of the overcharge may be passed-on to their customers. Economists typically use the Cournot model to describe the economic interaction in such markets. A simplified version of this model suggests that the proportion of the overcharge passed on is determined by the number of firms in the market. Indeed one can be more precise using simplifying assumptions (that demand is linear and marginal costs constant) and some algebra. The proportion of the overcharge (*OC*) passed on will be $OC*(n/(n+1))$, where n is the number of firms in the market.

This generates some expected and unexpected results. It confirms that in a competitive market there is full pass-on. But it also predicts that if the direct and indirect purchasers are monopolies they will pass-on only 50% of the overcharge they pay. Where there is more than one firm the pass-on will be given by the formula $n(n+1)$ i.e. the number of firms divided by the number of firms plus one. Thus if there are three direct purchasers 75% of the cartel overcharge will be passed-on to their customers i.e. 3/(3+1) = 75%; if five firms sixth-sevenths, and so on. This approach suggests that the pass-through will be between 50%-100% depending on the structure of the market, and be at the higher end of this band as the number of firms increase (but see later).

If one is happy relying on simple theory we have a rule of thumb which can be used to estimate the claim of each class of victims based solely on their number. For direct purchasers it will be $(1-(n(n+1)*OC))$. For the first class of indirect purchasers their claim should be $1-(n/n+1)$ the amount passed through by direct purchasers, and so on.

The attractive simplicity of this approach is deceptive for two reasons - the failure to take into account demand and supply elasticities, and price mark-ups.

Elasticities

The extent to which an overcharge is passed on will in the general case be affected by the market (not firm) price elasticities of demand and supply at each level of the supply chain.

It is standard economics, applied extensively in tax analysis, that incidence of a cost increase is greater the more inelastic is demand (assuming constant marginal costs). This is intuitively obvious since if purchasers are not responsive to changes in prices, then they will purchase a similar quantity of the product as they did at the pre-cartel price and hence bear more of the overcharge. If they are price sensitive, then their tolerance for higher prices will be less and it will be difficult for the full overcharge to be passed on. Thus the proportion of the overcharge passed on will vary inversely with the market (not firm) price elasticity of demand.

The same is true of the supply-side. If the marginal costs of production increase, then an overcharge will raise costs, and this will lead to a contraction in the quantity supplied, and less of the overcharge being borne by the purchaser. On the other hand where supply is inelastic more of the overcharge will be passed onto the purchasers.

The final incidence of the overcharge will thus depend on the relative values of the market price elasticities of demand and supply. These elasticities vary over time. Generally the longrun elasticity will be greater than the shortrun elasticity and this will affect the timing and duration of pass-through. High short-run switching costs may allow firms to impose significant mark-ups until alternative production technology or demand-side substitutes become available. Thus the magnitude of pass-through may change over the duration of a cartel.

There is, as one would expect, a relationship between market elasticities and market structure. Strangely in a number of cases pass-on will be unaffected by the market demand elasticity. This is the case where purchasers operate in a competitive market. This is because in the longrun firms make little profit but must cover all their costs. If they are subject to an overcharge it means that some firms have to go out of business in order to bring supply and demand back into balance at prices which fully cover the higher costs. Also monopolist will pass through 50% even though the demand elasticity differs and will be high (a profit maximising monopolist only operates in the elastic segment of the demand curve). But this is only the case where demand is linear and marginal costs constant.

In the more general case market elasticities are important, and modify the simple formula above. Indeed, the predictions can radically change with in excess of 100% of the overcharge passed-on. For example, if the elasticity of demand is constant at, say, 2, then a 10% overcharge will lead to a 20% pass through. While this may seem a quirky result it is one that has empirical support. Research on the incidence of excise taxes on cigarettes in Europe has found pass-throughs of between 50% and 700%.

Mark-ups

Firms typically use mark-ups on their costs to price their products. Depending on their cost structure and pricing practices, an increase in their marginal costs due to cartel overcharges will initially be passed on with a mark-up. This means that the initial response is to raise prices by more than the overcharge. Clearly the ability to do this will be limited by the two factors identified above – market structure and elasticities. But the important point is that for any given pass through, a purchaser will add a mark-up so that the cost passed through will be greater than the proportion of the overcharge it bears. Under imperfect competition, a direct purchaser's price increase may exceed the cartel overcharge by the mark-up, resulting in an over-shifting of the cartel overcharge.

How do mark-ups affect a damage claim? Given that the purpose of damages is to restore the party to its pre-cartel position, it would seem that the mark-up should be deducted from the proportion of the overcharge borne by direct and indirect purchasers.

Conclusions

The above illustrates how basic economics can provide rules of thumb useful in identifying who bears the cartel overcharges. Of course these have been drawn from simple models and partial analysis which ignore many factors. But they provide a good starting point. The challenge is to marry the models with the facts to help guide the courts.

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