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CASENOTE
Economics of Competition, Regulation & Litigation

CARTEL DAMAGES AND FINES

A collection of *Casenotes* which provide commentary on topical issues in EU cartel enforcement

Cento Veljanovski

.

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Preface

The *Casenote* series has been a means by which Case Associates maintains contact with competition lawyers and clients by providing timely, topical and often intentionally provocative commentary and analysis of the economic aspects of European competition laws and practice. Here past *Casenotes* on cartel damages and European cartel fines are collected together.

I hope the reader finds them interesting and useful.

Cento Veljanovski
Managing Partner

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Cartel damages

Some practical and policy issues

The calculation of damages in price fixing cases is not easy. It requires estimates of the competitive conditions which would have existed in the absence of the cartel, in many cases for the previous decade or decades. The factual and counter-factual burden, and costs to potential Claimants to establish a damage claim is therefore exceedingly high, especially when it is appreciated that a successful cartel has thrived by concealing and misleading its customers and law enforcers. Here we consider some general and evidentiary issues surrounding private actions in cartel cases.

Calculation of 'but for' prices

The principles governing damages in cartel cases are easy to state but difficult to implement. They are the same as those in tort i.e. they seek to award a sum in monetary compensation sufficient to put the victims in the position they would have been had the cartel not overcharged its customers. This requires that the Claimants' estimate the 'but for' or counterfactual competitive prices for each product and each year on the assumption that the cartel did not exist. Obviously this price is not observed, and will be hard to determine given that actual prices will change and fluctuate for reasons unrelated to the price-fixing conspiracy.

The most common method of estimating 'but for' prices is the so called 'before-and-after' approach. This takes the price before the cartel and the price after the cartel has been disbanded, and in the simplest case draws a straight line between the two to calculate the 'but for' prices over the intervening years. This assumes that a) the before and after prices are the competitive prices; and b) the prices over the intervening period of cartelisation are not influenced by other market factors.

There are obvious problems with this approach. First, the start and end prices may not be competitive or non-collusive prices. The cartel or less overt collusion may have existed prior to the start date for the cartel established by an antitrust authority. The cartel members may also not bring down prices to their competitive levels after the cartel has been detected if they know that fines and damage claims will be based on post-cartel prices, or if they have unilateral market power. Even ignoring these considerations, the approach can easily generate nonsensical results if post-cartel prices are higher than pre-cartel prices. The 'before-and-after' method would estimate 'but for' prices higher than actual prices, and that the cartelists' had 'undercharged' and benefited their customers! This underscores the fact that prices don't move in straight lines nor are they immune from market forces simply because a cartel exists. A credible estimation procedure must take into account evidence of changes in market conditions over the period of cartelisation if it is to survive forensic attack. The 'but for' price estimates must incorporate changes in demand and supply-side factors (such as capacity constraints), foreign exchange movements for traded goods, and so on.

One approach that seeks to systematically adjust for the myriad factors which influence prices within a specified model of oligopolistic interaction is econometric analysis. This is a sophisticated before-and-after approach which can take account of the non-cartel factors which affect prices, and provide estimates of the cartel-only effects. While better, it is not without its problems – often the data is inadequate; the technique can be challenged on modelling and statistical grounds; and the approach may not be readily assimilated or accepted by a judge, especially if the findings are not corroborated by more 'common sense' evidence.

Victims' loss, cartelists' gain, or …

While the general rule is that damages should be based on the victims' loss, it is not clear that this is necessarily the optimal damage rule. The simple mechanics of overcharging indicate that private actions may result in cartelists not bearing the full costs of their illegal actions. This is so for at least two reasons. First, the cartel will have restricted output and if the cartel has persisted for some time, the higher costs may knock some firms out of the market for which compensation is not claimed. This generates what economists call a deadweight loss equal to the difference between what customers would have been willing to pay for the lost output minus the avoided production costs. This loss is in addition to the wealth transfer from the overcharge equal to the quantity sold times the price difference. Thus even a compensatory damage measure should, all things equal, be increased to reflect the deadweight loss. While this loss is not directly measurable, it can be calculated using estimates of elasticities.

Second, the *modus operandi* of cartel is concealability. As a result many cartels are not detected. Optimal sanctions require that the failure to prosecute all cartels be taken into account by raising the penalty above the

compensatory level. Thus if only one in four cartels are discovered and successfully prosecuted, then optimal damages should be four times the victims' losses i.e. multiplied by the reciprocal of the successful prosecution rate. Moreover, if not all victims make claims in each cartel case, either because the individual losses are too small or the costs of mounting an action too high, then there should be a further uplift. This provides a justification for the US triple damage measure, although the assumption that only one in three cartels is prosecuted lacks scientific backing.

An alternative measure of damages under consideration are those based on the offenders' gains i.e. restitutionary damages. In the simplest case this is the same as compensatory damages i.e. equal to the wealth transfer brought about by the overcharge. In other cases, the two may diverge if victims incur additional costs or the impact on profits of the price increases differ between offender and victims. However, gain-based damages would not deal with the deadweight loss and concealability points raised above.

Another consideration is that price fixing is a *per se* offence under EC law (Article 81), and in some Member States a criminal offence. If the concept of an efficient cartel is not admitted, then compensatory damages would merely make the cartelists indifferent between price-fixing and competing, whereas they should positively tip the balance toward the latter. If a thief steals your property, it is insufficient to ask him to give it back when caught! It follows that optimal sanctions require that the penalty exceed compensatory damages. In practice this deterrence objective of cartel laws is bolstered by substantial fines and custodial sentences. However, what impact these multiple sanctions should have on the calculation of damages in private actions is problematic.

Legal and enforcement cost allocation

The legal costs of mounting a damage claim are significant. Indeed, they could easily be prohibitive if liability has not yet been admitted or determined by an antitrust authority. Moreover, evidence on the cartelists' activities is often, if not always, very limited because cartels operate in secret and do not tend to keep records. When firms fix prices they impose a range of predictable losses on customers which are avoidable. Indeed, under conditions of effective competition, the costs of detecting and punishing cartelists are not legitimate business costs of the victims. Thus an optimal sanctioning scheme would require that the cartelists bear the full costs of public and private actions to detect and punish them. This cost allocation rule should be applied in private damage claims.

Direct purchasers & passing-on

In US law only those who are direct purchasers of the cartelists' products have standing to sue for damages (*Illinois Brick*). Most cartels involve primary or intermediate products – vitamins, cement, copper tubes – that are processed and form input costs along several stages of the supply chain. Thus a copper tube cartel may result in a distributor being overcharged, which is then passed on in higher prices from the distributor to a fabricator, the fabricator to the boilermaker, then onto the builder, and finally the householder. If each had standing to sue, there would be a danger of high legal costs and duplicative claims. Thus the direct purchaser limitation makes practical sense.

However, one potential obstacle to a successful claim is the so-called passing-on defence. It is not clear whether such a defence exists in English law. It is correct that if a direct purchaser has fully or partially passed on the overcharge downstream, then the absence of a passing-on defence would lead to over-compensation of direct purchasers, but not necessarily overpayment by the cartelists. A passing-on defence would, however, require the courts to apportion losses which would significantly increase legal costs and lower the Claimants' probability of success. The Claimants would be required not only to go through expensive accounting and competitive analyses to determine the extent of the overcharge, but also to examine and defend counter-claims that they partially or fully passed on the overcharge to their customers. This is a potentially large hurdle. It is therefore crucial that those contemplating a claim start off by assessing the theory and evidence concerning the incidence of cartel overcharges until such time as the law is clarified.

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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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Volume effect damages in cartel cases

Why pass-on gives rise to offsetting lost volume damages.

The EC Damages Directive (2014/104/EU) reiterates that the purpose of damages is full compensation and no more (Art 3). The prospect that claimants may be "unjustly enriched" has led to an obsessive focus on the pass-on of cartel overcharges to the exclusion of lost profits damages which accompany pass-on. This Casenote explores the role of lost volume damages, and why the Damages Directive will lead to the under compensation of claimants.

Pass-on in EU Law

The overcharges paid by a purchaser are the core of the award of damages against members of an illegal cartel. The direct purchaser who initially pays the overcharge will often pass a proportion, and maybe all, of this on to its customers in higher prices. The Damages Directive says that this amount should be deducted from the overcharges loss of the purchaser (Art 13). The European Commission is required to publish Guidelines on pass-on in the near future (Recital 42).

The Damages Directive goes further. In what amounts to re-writing of the civil law of most Member States, it sets out two new rebuttable presumptions - that an infringement has caused harm; and that direct purchasers will pass-on at least some of the overcharges to their customers (Art 14). Combined with the right to sue, the rebuttable presumption of pass-on serves as a "sword" which benefits indirect purchasers and end consumers by allowing them to reclaim their losses (Art 14). It also acts as "shield" or defence which enables defendants to reduce or even eliminate their exposure to damage claims (Art 13).

Pass-on means lost volume damages

It is elementary economics that an overcharge of, say, 20% to 30% which increases the costs of a direct purchaser imposes at least three losses:

1. the overcharge (**overcharge**)
2. lost profits on the reduced sales (**volume effec**t), and
3. the real economic loss (**deadweight loss**)

The first two losses are recognised in the Damages Directive as overcharge and lost profits damages respectively. The third is not and can be ignored for the present purposes (although the EC Commission's Practical Guide to Damages Quantification (2013) describes it as a lost volume damages).

The law entitles direct purchasers to claim the amount of the overcharge they have not passed-on to their customers in higher prices. This avoids their unjust enrichment and supposedly gives them full compensation. But in practice this invariably guarantees that they are undercompensated.

The reason is due to the elementary economics proposition that pass-on and volume effects are inextricably intertwined. When the direct purchasers raise their prices they suffer a loss in sales, and hence sustain a further loss in terms of the profits thereby sacrificed. This volume effect cannot be observed from market data or company purchase invoices as it represents hypothetical sales which have not been made because of the impugned conduct. Indeed, it can give rise to a more troublesome consideration – what might be called the "lost firm" effect if the overcharge pushes some higher cost purchasers out of business.

The EC Damages Directive notes the relationship between overcharges and lost sales in its preamble (Recital 40) but then proceeds to ignore it. This bias against lost volume damages is also reflected in English law. The Court of Appeal in *Devenish v Sanofi-Aventis* [2008] EWCA Civ 1086, dealt briefly with the issue in dismissive terms. Longmore LJ (para 148 (ii)) in *obiter* said that "if no or a few damages are awarded, that does not mean that such damages are inadequate; loss of a possible sale is less serious than actual out-of-pocket loss". His Lordship was wrong; as is the Damages Directive.

Importance of Lost Profits

How important is the lost volume effect? The answer is potentially very important. It can be shown using the economists' oligopoly models that under various plausible specifications of demand and supply conditions that the lost profits due to the volume effect can be substantial, and sometimes larger than the pass-on of the overcharge. Hence the failure to take account of the volume effect when adjusting for pass-on means that direct purchasers are under-compensated. In cases where the lost volume damages exceed the pass-on adjustment, even the award of the full overcharge would undercompensate direct purchasers.

It has been suggested that the Damages Directive does not compromise the claimants' right to a lost profit claim (Art

13.3). This is correct but does not meet the above criticism. If pass-on and lost volume damages occur at one and the same time; and pass-on is the *sine qua non* of lost volume losses; then lost volume damages should be central to any rule or guidance on pass-on. A lost profits claim on account of reduced sales is not a secondary and/or ancillary claim but an inevitable complementary head of damages.

In summary, economics and legal consistency require that where pass-on is pleaded, the claimant must be entitled to overcharge plus lost volume damages.

Presumption of volume damages

While one is hesitant to suggest a further codification of the law of damages (which seems to be the effect of the Damages Directive) there is a case for a corrective legal "presumption" that pass-on gives rise to a (offsetting) claim for lost profits. Namely, that where cartelists raise a pass-on defence in an effort to reduce their exposure to overcharge damages; it should automatically create a presumption that the claimant has suffered lost volume damages. If the simple economics is correct you cannot have one without the other.

Indeed one can go further and require defendants to estimate the volume effect as part of the proof of pass-on they are already required to satisfy (Art 13). This would smooth the procedural and evidential obstacles faced by claimants as they could rely on this estimate to calculate the profit loss uplift to their claim implied by the defendants' defence.

The position of indirect purchasers who plead pass-on is different as they are not liable (obviously) for lost volume damages. They should not bear the burden of establishing the associated lost sales since that does not affect either their gross or net compensation.

The attraction of the proposed presumption is two-fold. It puts lost volume damages on an equal footing to overcharge damages, and deals with a source of under-compensation. Secondly, it softens the blow to claimants at each stage of the supply chain caused by the pass-on defence, and the uncertainty surrounding its impact. It does this by exposing defendants to a second head of damages which will caution them from raising the defence as a matter of course and in a simplistic way – that the overcharges were all passed on, and ultimately borne by the end consumer who has often little incentive to sue.

Gains based damages

Volume effects play another role, this time in assessing the relationship between gains based and overcharge damages. To reiterate the legal principle – damages should compensate not punish. Therefore quantum is based on the claimants' losses not the defendants' gains.

In *Devenish* this proposition was tested in the English Court of Appeal. The claimant, a direct purchaser, sought to circumvent the pass-on defence by claiming gains based damages (known as an "account for profits"). The court rejected this because the claim was in essence overcharge damages in different guise, and the prospect that Devenish would be overcompensated as it most likely passed-on the overcharges in higher prices. Moreover, if it was allowed gain based damages and the indirect purchasers overcharge damages, the defendants would be exposed to damages up to twice the amount of the overcharges

Notwithstanding this, the perception that gains based damages are greater and/or easier to estimate than compensatory damages is wrong. It is incorrect because of the volume effect but this time as it affects members of a cartel. When cartelists raise their prices two offsetting factors occur - they gain increased profits from the sales they make; but lose the (pre-price increase) profits on the sales they do not make in order to raise their prices. As a result their net gains are less than the overcharges, and would under compensate direct purchasers.

Summary

The European Commission's endorsement that indirect purchasers have standing to sue has increased the complexity of damage calculations considerably. The Damages Directive recognises that pass-on is part of this complexity; but fails to take account of the inevitable lost profit damages. As a result the Directive is incomplete, and its focus on pass-on risks the significant under compensation of those harmed along the supply chain.

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Price wars and cartel damages

Price wars can be the cause or result of cartelisation; and can occur before, during and after a cartel. Here the impact of price wars on the estimation of cartel overcharges and their duration are examined.

Types of price wars

There are three main causes of a price war: punishment, structural over-capacity, and the entry of a competitor.

Price wars can be used to punish members of a cartel who deviate from the agreed pricing strategy and as a means of restoring the effectiveness of the cartel. A price war meted out to punish a deviator obviously reduces the overcharge during the period of the price war. But it does not affect the counterfactual price since it would not have occurred but for the illegal coordination between firms in the industry – as much as the price increase thereafter.

An alternative view is that price wars are a reversion to competition, the prices an indication of the but for price, and that these periods should be expunged from the calculations of the overcharge. While this view is tenable, the variety and complexity of price wars suggests that it does not provide a blanket treatment of a price war.

The same is not true where a price war is caused by endemic over-capacity in an industry. This can especially occur during downturns in the business cycle, causing firms to compete aggressively to build and maintain market share. Examples are shipping (where conference line agreements have received exemption from anti-cartel laws for this reason), cement and cardboard box industries. It is well known that these industries have been poor at matching production capacity to demand, and suffer from periods of chronic overcapacity and severe price wars. Such price wars represent uncoordinated rivalry between competitors, and therefore should be treated as part of the counterfactual. This is even if the price war causes some firms to incur losses. It is not the role of the market to guarantee the profits of firms, and hence cost-plus approaches to determining the but for price are arguably misguided. Price wars generated by excess capacity either prior to the formation of or during a cartel reduce the but for price.

Price wars can be sparked by the entry of a new firm. This can be initiated by the entrant which aggressively 'under-prices' its product to build market share, or by the cartel which drops its price to foreclose the market. The treatment of this type of price war is trickier. Suppose a firm enters a market attracted solely by high cartel prices, and this initiates a price war which ends with its eventual participation in the cartel. In this case, entry as well as the price war is clearly cartel-induced and would not be part of the counterfactual. If on the other hand entry is not exclusively related to a high cartel price, then the price war is a genuine market development which will reduce but for prices and the overcharge. However, distinguishing between the two may be difficult. A good indicator will be what happens once the cartel collapses: if the entrant (or another equivalent firm) exits the market, then this would be evidence of cartel induced but unsustainable entry.

In summary, there is no pre-determined way of dealing with a price war. A price war unambiguously lowers the actual price and hence the overcharge and damages. But it may also reduce the but for price, which would increase the overcharge. To determine whether it does requires that each case be individually assessed based on evidence on what caused the price war. If it was cartel induced, it does not alter the counterfactual price; if not, it does. However, like all rules there are exceptions.

Dealing with Price wars

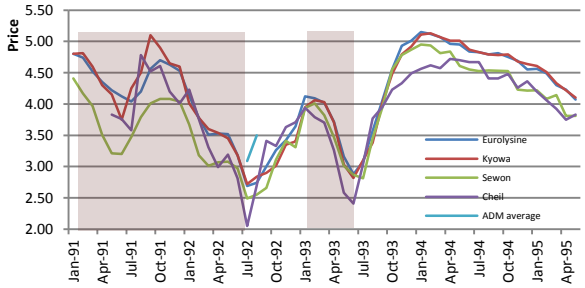
Dealing with price wars in the practical quantification of damages can be tricky and complicated. Often a number of factors will occur simultaneously, and the cartel may be subject to different types of price wars which may also affect the duration of the cartel. Below we look at two cartels to illustrate these problems.

Example 1 – amino acid (lysine) cartel

The amino acid (lysine) cartel was subject to two distinct price wars caused by entry and punishment respectively. Exceptionally the European Commission published data for European amino acid prices in its decision (Case COMP/36.545/F3). The figure below shows these prices gyrating wildly during the alleged cartel period (September 1990 to June 1995) with price wars between early 1991 to June 1992, and between early 1993 and June 1993 (shaded). The reasons for each – although not entirely clear – differ. The first price war arose when ADM and Cheil entered and increased production capacity in the industry. Both subsequently joined the cartel. If ADM's strategy was to price aggressively to build market share and gain a better arrangement with the existing cartel members (such as a higher quota), then the price war would not be part of the counterfactual. If on the other hand entry was independent of the cartel, and

the price war was due to the presence of an effective competitor outside the cartel, then the price war is part of the counterfactual and lowers the but for price. However, where the motivation is mixed – genuine entry spurred on by the prospect of joining the cartel – it would affect the but for price.

Evidence indicated that the second price war was intended to punish firms, Cheil in particular, who were heavily discounting lysine prices. If so, it was cartel-induced and not part of the counterfactual. Hence, this price war did not affect the but for price, and hence reduced the cartel overcharge.



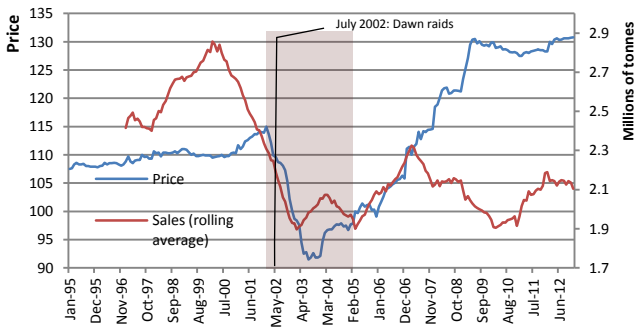
The price wars may also lead to different claims as to the duration of a cartel. Does one exclude or include the price war periods? Economists have recently used screening techniques to identify the existence of a cartel. These search for statistically significant structural breaks in price patterns, such as a sudden increased stability in prices. In late 1993 lysine prices rose and stabilised at a higher level which continued to the end of the cartel. This evidence could be used (as it was) to argue that the cartel period was in reality very short, and the damages far less. However, identifying this shorter cartel period begs the question of what were the but for prices, and ignores evidence that the second price war was punitive.

Example 2 – German cement cartel

The German cement cartel presents an even more complex situation. The price war occurred while the cartel had been detected and was under investigation (July 2002). Evidence accepted by the court was that its purpose was to punish the defector (Readymix). Others suggest that the price war was the result of the dramatic decline in cement sales following the cessation of the East German reconstruction effort (see sales in the figure below).

The figure below shows that cement prices fell about 24% from their peak in January 2002 to their lowest point in November 2003. Thus it matters considerably whether the period following the start of the price fall is considered part of the cartel period or not. This is especially so when the post-cartel prices are used to estimate the overcharge.

Three groups of economists associated with a subsequent German class action accepted that the price war was cartel-induced. All three used a during-and-after regression analysis with a dummy variable to represent the cartel period, but made different assumptions regarding the price war period.



The experts appointed by the court took account of the decline in cement sales, the speed of price adjustment and the price war. They assumed that it took 38 months after the cartel had been detected for prices to adjust (shaded period above) to their true non-cartel level, implying an estimated average overcharge of around 10%. Huschelrath *et al* tested three different transition periods of four, six, and eight months to arrive at a much higher average overcharge of between 20% to nearly 27%. The third study adopted Huschelrath's model together with a statistical analysis to date the end of the price war, which suggested that it took around 40 months for post-cartel prices to be established leading to an estimated average overcharge of 7.6% to 9.1%.

Study	Overcharge	Price war duration	Party represented
Friederiszick & Roller	>10%	38 months	Court
Huschelrath, Muller & Veith	20% - 26.5%	4, 6 & 8 months	Litigation funder
Frank & Schliffke	9.1% - 7.6%	41 months	Defendants

Conclusion

The reasons for a price war cannot be determined by statistical analysis – they must rely on industry and other direct evidence – but its consequences and duration can. Here several of the complications have been touched on, but there are many more, such as predation during entry and the treatment of below cost prices.

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Economics of Competition & Regulation September 2010

Information Exchange

Object, effect, and economics in European Community competition law

Information exchange has become an increasing focus of EC competition law. This *Casenote* looks at the economic and practical issues surrounding 'pure' information exchange not associated with a cartel or agreement in EU competition law i.e. a concerted practice.

The Economics

The economics of information exchange is frustrating because it rarely gives clear cut guidance. However, there are several propositions which can be distilled:

- Information exchange can have pro- and anti-competitive effects, and even where it has anti-competitive effects it may improve economic efficiency and lower prices.
- For information exchange to facilitate collusion it must be communicated, create a credible 'focal point', actions need to be monitored, and there must be some method of punishing deviators i.e. oligopoly and information exchange alone are necessary but by no means sufficient conditions.
- Economics can guide case-by-case assessments, or rule and standard setting by taking into account the direct competitive effects, error and enforcement costs, and administrability of the law. Where error costs are low and enforcement costs high, rules prohibiting information exchange make economic sense. Where the likelihood of information exchange facilitating coordination is low it should be exempt.
- The aim of applying competition rules should be to deter anticompetitive information exchange without chilling the flow of efficient information.

The Law

The case law (*Deere*, *Thyssen Stahl*), paraphrased in the maritime services guidelines (para 41), holds that

> an exchange of information, in its own right, might constitute an infringement of Article 81 [now 101] of the Treaty by reason of its effect. This situation arises when the information exchange reduces or removes the degree of uncertainty as to the operation of the market in question with the result that competition between undertakings is restricted.

The draft horizontal co-operation agreements (HCA) Guidelines spell out the European Commission's position. The exchange of "individualised data regarding intended future prices and quantities" is an infringement by object under Article 101(1). All other types of information exchange are treated as infringements by effect. They are to be assessed case-by-case to determine whether they have an appreciable (adverse) effect on at least one parameter of competition - price, quantity, product quality, product variety and/or innovation (para 69). The appreciable effect test is based on a checklist of the types of information exchange cross-referenced by market factors (see box below).

The draft HCA emphasises that the above checklists are "non-exhaustive", and cannot be "mechanically applied". Nonetheless, an IE is likely to constitute an infringement where:

- Markets are highly concentrated, transparent, simple, and stable, and firms symmetrical, and future profits and firm 'longlivity' important ; and
- Information exchange is commercially sensitive, private, current and firm-specific, particularly about future intentions.

Market Factors	Information Type
Wide coverage	Commercially sensitive
Transparent	Private
Concentrated	Individualised
Simple	Current or intended
Stable	Frequent
Firms Symmetrical	
High discount rate	
Firms well established	

Infringement by Object

A rule which outlaws information exchange on intended future prices and quantities within a "tight oligopoly" market is consistent with the above economic framework. It assumes that such information exchange inevitably facilitates collusive actions. While this may not always be the case - it could provide the opportunity fair price-slashing - the probability that it does facilitate collusion is high.

Moreover, EC law does not place a blanket prohibition on such information exchange. It allows the parties an 'efficiency defence' (Article 101(3)). This has an economic logic – it assumes that the error costs of finding an infringement are low, but gives an escape clause to the alleged infringers to adduce evidence that there are

offsetting efficiency gains. This is a practical (and economically defensible) compromise between the problems of evidence, error costs, and administrability. Thus the criticism infringement by object smacks of economic illiteracy is unwarranted.

There are at least two concerns with the legal approach to 'object'. First, the ECJ (and particularly the AG) in *TMobile* (2009) seems to have thrown the legal position into disarray by suggesting that information exchange "capable" of restricting competition rather than "by its very nature injurious to competition" (*TMobile*, para 29), is an infringement by object. This lowers the standard of proof considerably and increases the number of Type I errors (false positives). Second, the failure of the HCA Guidelines to offer safe harbours for low risk information exchange is inconsistent with the economic framework and legal certainty. The exchange of information on costs, general demand, investment, deliveries, historical and aggregated data, and even public statements about intended future prices which commit firms to selling at those prices, should be 'safe harbours'.

Infringement by Effect

Turning to infringement by effect, the checklist approach has a good economic pedigree (Stigler, 1961; and Judge Posner, *Antitrust Law*, 2001). A stable highly concentrated market of large similarly sized firms producing standardised products/services is more conducive to a concerted practice than one which is not.

But these factors relate to market structure rather than to a settled body of evidence on the competitive effects of specific types of information exchange. There is a danger that 'tight' oligopolistic markets which satisfy the checklist have the factors applied in a mechanical way. There is a high risk of this since most types of information exchange have both pro- and anti- competitive effects.

This concern is reinforced by the legal standard of proof which does not require evidence of an actual or potential 'effect' on competition. An infringement exists if it is 'at least likely to have an actual or potential anticompetitive effect'. 'Likely' is defined as 'expected with a reasonable degree of probability' (*TMobile*, para 26). Not unsurprisingly the draft HCA Guidelines do not propose extensive empirical evidence of actual harm.

Further, the law has not set out a credible theory of harm and competition. The case law frames the effects test in terms of a reduction in market uncertainty. This is defined as information exchange which alters the undertakings' incentives and decision-making so that their actions are not as independent as they would be under "normal market conditions". This literary formulation begs many questions. If it means that any information exchange which reduces market uncertainty is deemed to restrict competition, then it is inconsistent with the economics. Indeed, the apparent equivalence of collusion with a reduction in market uncertainty is unwarranted, especially since the latter is to be determined by running down a checklist of factors rather than a factual inquiry of the likely anticompetitive effects. It is also inconsistent with judicial statements that the reduction in market uncertainty must have "the result that competition between undertakings is restricted".

The Counterfactual

The draft HCA Guidelines (para 69) state that an appreciable effect is to be determined by reference to a counterfactual - the competitive situation that would prevail in the absence of the information exchange.

While counterfactual analysis has become popular in modern antitrust it is not without its problems. First, there will be reasonable differences of view as to the appropriate counterfactual, or there may be more than one counterfactual. For example, if sellers could have achieved the same outcome without an exchange of information (e.g. Christies/Sotheby cartel), then the incremental competitive harm attributable to the information exchange will be negligible. The actual and counterfactual are the same.

In a similar way theories of oligopolistic behaviour (such as the economists' favourite Cournot model) show that non-competitive outcomes can arise simply because the small number of firms recognise their interdependence. It then becomes difficult to identify a counterfactual that is not close to the actual (collusive) outcome with information exchange.

Conclusion

The Commission's Draft HAC Guidelines embrace an economic approach to information exchange. Yet the law remains unsettled in parts, and there are inherent difficulties in determining when many types of information exchange restrict competition.

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Australian air freight cartel case crashes

Why did the New Zealand and Australian courts differ?

In two high court decisions prosecuting airlines for colluding to fix fuel surcharges on routes to New Zealand and Australia, the respective courts came to very different decisions based on the same arguments. In *Commerce Commission v Air New Zealand* (2011) 9 NZBLC 103 the New Zealand High court held that inbound air freight was a market in New Zealand. In *ACCC v Air New Zealand* [2014] FCA 1157 Perram J concluded:

> [20] The evidence showed that the surcharges were imposed and collected at the origin airports. The competition which occurred between the airlines and which the surcharges interfered with was competition in markets in Hong Kong, Singapore and Indonesia and not competition in any market in Australia. Prices may well have been affected in Australia by the conduct but that does not mean the market in which the airlines were competing was located here.

The prosecutions' case

The cases concerned cargo carried on scheduled passenger aircraft (which raised complications not adequately resolved in either decision). All sides agreed that from a demand-side perspective inbound air cargo services was a separate market from outbound air cargo services (cargo does not travel on a return ticket with the exception of racehorses!). The airlines pleaded that the geographic market was the airport/country of origin, and therefore not a market in Australia or New Zealand. The ACCC and Commerce Commission pleaded that the inbound market was "in part" in Australia or New Zealand because: inbound aircraft flew across, landed and unloaded in Australia or New Zealand; that "on occasions" importers were involved in the decision over inbound freight services; the demand for airfreight was derived from that of importers; and air freight charges affected prices in Australia or New Zealand. The New Zealand court was persuaded by these factors; the Australian court unimpressed.

A key proposition was that demand for air freight services was a derived from the value of imports carried by air, or as Perram J termed it "downstream substitution". According to the ACCC and Commerce Commission, this meant that the geographic market included the location of importers as they were the ultimate consumers of inbound air freight services; and that origin freight forwarding, airline cargo services, ground handling and other services at the destination airports, and importing were all in the same single product market.

In the New Zealand proceeding one of the Commerce Commission's expert economists ([177]) said in cross-examination, which was cited favourably by the court, that in assessing a 10% SSNIP for inbound freight "the reaction of the importer to the price increase matters, it matters to market definition, and it matters to substitutability". He also said "It all depends – it's a matter of degree, like so many things in economics. It all depends on the degree of closeness or remoteness between the supplier and the direct and indirect customer".

The derived demand proposition cut no ice with the Australian judge. He observed that it confused the demand for the imported product with the demand for its carriage; and more importantly failed to show how the decisions of importers in Australia constrained the price of air freight services in Hong Kong or Jakarta. In both cases, but fatally in the Australian case, there was a "complete absence of any evidence". Perram J concluded:

> [320] I am left with what was described by the parties as a thought experiment. A thought experiment clarifies concepts but it cannot provide a substitution for some empirical evidence be it qualitative or quantitative. There is simply no basis upon which I could find this effect did, or was likely to, take place.

Exploring derived demand

The concept of derived demand is simple - the demand for an input or intermediate service is derived from the value of the final product it produces. A steel girder is valued not for itself but for its use in construction. This can be found in any economics textbook. But the same textbooks note two crucial factors regarding derived demand - the demand elasticity of the final good; and the ratio of input to total costs.

Thus the first question that must be addressed is - Did Australian or New Zealand importers have a large or limited choice of substitute imports which could have been transported by air from different locations (the distance to Australia rules out sea, road and rail as close substitutes)? If they did, the import elasticity was high; if they didn't, the import elasticity was low.

The second, and more critical, factor serves to reduce the demand elasticity for air freight for any given import elasticity. The lower the ratio of airfreight costs to import

value, the less significant is the role of importer substitution. To illustrate, if the import elasticity is -2.0 and air freight costs 3% of the FOB value of imports, then the air freight elasticity of demand would be less at .03 x -2.0 = -0.06, which is highly inelastic. Thus looking at the importers' substitution possibilities alone tells us little.

Some real evidence

So is importer demand likely to be a useful consideration in defining inbound air freight markets. The answer based on the evidence is no.

First, research (Menon, 1993) shows that the import elasticity of the goods most frequently air freighted into Australia is low - medical, pharmaceutical products at -0.50; essential oil and perfumes at -0.28; photographic and optical goods at -0.36; power generating machinery at -1.06; specialised machinery at -0.40; general industrial machinery at -0.96 and electrical machinery and parts at -0.41. Admittedly these elasticities are overall and not route-specific ones, but there are good reasons to believe that many route-specific elasticities are similarly low. Documentary evidence in the New Zealand proceeding showed that importers often do not have much choice since imports had to be sourced from specific production plants or distributors. For many larger importers direct flights and reliability were more important than air freight charges. The growth of "just in time" (JIT) inventory management where firms and distributors minimise their inventories by flying in parts and components as and when required to meet customer demand has greatly heightened this.

Second, the ratio of air freight costs to the FOB value of imported goods flown into Australia (and New Zealand) is low. Imports from Hong Kong and Singapore are high value to weight goods such as machines, electronics, cameras, spectacles, jewellery, pharmaceuticals and so on. Using data from one airline's Air Waybills for the top imports that can be matched to the Australian Bureau of Statistics Maritrade data, confirms that the air freight costs to import value ratios are about 6.2% for engines, 2.5% for cameras, and 1.5% for flowers. One of the largest importers of electronic goods stated that its air freight costs were only 3% of the FOB value.

If one were to take these figures the derived demand for inbound air freight services would appear very inelastic at -0.03 (assuming an air freight costs ratio of 3% and import elasticity of -1.0). Put more tellingly, a 10% SSNIP of inbound air freight rates would raise importers' costs by a mere 0.003% assuming they were fully passed on. Note that these calculations are purely illustrative and ignore that airline freight charges are often only a proportion of the inbound freight forwarders' charges (they vary from 30% to 95%), and the other significant costs of getting their goods to and from the origin and destination airports, and warehousing them faced by importers.

Thus the importers' reaction to a SSNIP is unlikely to "matter" despite the ACCC and Commerce Commission's witnesses' impressionistic statements to the contrary. And, paradoxically, it is specifically because the demand for inbound air freight is a derived demand that the substitution opportunities open to importers are unlikely to place a significant constraint on inbound air freight rates.

The role of agreed statement of facts

There were also interesting differences in the way the two cases were run which appeared to have affected their outcomes. In the New Zealand case the Commerce Commission and airlines worked together on an agreed statement of facts; and the proceeding was split into two trials – the first on geographic market definition; the second on liability. In the Australian proceeding Air New Zealand refused to join the other airlines in drafting an agreed statement of facts with the ACCC. The latter settled before the trial incurring fines of around $100m while Air New Zealand went on to win its case. Perram J [334] ignored the New Zealand decision on the ground that the "agreed statement of facts" meant that it did not consider downstream substitution. This is not correct; agreed facts or not, the New Zealand court heard extensive evidence on all the issues Perram J considered.

Conclusion

Using easily marshalled evidence it has been shown that derived demand was not a relevant consideration in defining the geographic market for inbound air freight. Second, in future cartel cases defendants are unlikely to rush to agree the facts with the regulator.

Cento Veljanovski was expert for the airlines in the New Zealand case, and advised Air New Zealand in the Australian case.

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Efficient cartels

Oxymoron or economic insight?

The concept of a "good" or "efficient" cartel is regarded by competition authorities as an oxymoron. A cartel is seen as the worst type of antitrust violation which warrants zero tolerance. Agreements between competitors to raise prices and share the market unambiguously reduce economic welfare. Even if these agreements are ineffective, the law should come down hard on attempts to rig prices. This Casenote argues that this view goes too far – even cartels which lower output and increase prices can be efficient, and pro-competitive.

Resuscitating the Efficient Cartel

Basic economic theory tells us that coordination can be efficient in many instances, and this is accepted in law, e.g. joint ventures and agreements on industry standards. But where competitors agree on prices and sales – so called "hard core" cartels – there is intolerance. Nonetheless many jurisdictions exempt export cartels, sports leagues, "crisis" cartels although under increasingly limiting circumstances, labour unions and trade and professional associations.

Even Richard Posner (*Antitrust*, 2001, pp. 29-32), a vigorous advocate of extending antitrust to outlaw all forms of coordinated behaviour, concedes that: "the possibility cannot be excluded *a priori* that a loose-knit arrangement among competing firms may sometimes create net social benefits by restricting competition among the firms". He gives the example of the otherwise excessive advertising of homogenous products which if restrained could lower costs without reducing output; and collection societies which reduce collection costs with blanket licensing ameliorating the prospect of output reductions and monopoly pricing. Posner's examples are confined to non-output reducing coordination which lower marginal costs. But cartels which do not have these features may also be efficient.

Destructive competition & the empty core

The claim that cartels have beneficial effects precedes US antitrust law. Trusts were justified as necessary to prevent 'ruinous' or 'destructive' competition in industries with high fixed costs subject to frequent 'price wars'. This was the unsuccessful defence in the *Trans-Missouri* (1897) where 18 US railroad companies formed a trust to set their rates, arguing that absent their agreement there would be ruinous competition, eventual monopoly and even higher prices. Since then industries such as steel, cement, paper, railways, shipping and airlines have at various times claimed that competition was unsustainable and wasteful.

The idea that some industries are unstable and without a competitive equilibrium has long been appreciated by economists. Jacob Viner (1931) noted that if all firms have identical U-shaped cost curves there will only be an equilibrium if all producers can supply where marginal costs equal average costs. A more contemporary strand of economic theory suggests that these industries may have an "empty core". Lester Telser (1978, 1994, 1996) refreshed the idea that cooperative arrangements among firms in some industries were not attempts to impose monopoly prices but a response to their inherent structural inefficiency. While based on hideously dense mathematical game theory, the idea is simple to state. A market is said to have a "core" if there is a set of transactions between buyers and sellers such that there are no other transactions which could make some of the buyers or sellers better off. Such a "core" will survive in a competitive market if all firms can make zero economic profits. In a market where the core is empty, no coalition of firms will be able to earn zero profit; some firms will be able to earn a surplus and thereby attract entry, but because the core is empty the new entry will inflict losses on all firms. When firms exit due to their losses, the remaining firms again earn economic profits. There are no competitive long-run stable equilibria for these industries. The literature suggests that an industry is likely to have an empty core the more: (1) fixed the firms' production capacities; (2) where firm capacities are large relative to demand; (3) there are scale economies in production; (4) incremental costs are low, (5) demand is uncertain and fluctuates markedly; and (6) the industry's output cannot be stored cheaply.

In the 1980s several academic studies applied empty core theory to antitrust. Brittlingmayer (1982) claimed that the US iron pipe industry had an empty core, and that the famous *Addyston Pipe* case was wrongly decided, and responsible for mergers in the industry. Sjostrom (1989) and Pirrong (1992) studies concluded that conference lines were not attempts to overcharge

shippers but to counteract an empty core that led to volatile market shares and freight rates due to excess capacity and fixed schedules. A similar analysis underpinned the exemption given to conference lines. This has now fallen out of fashion, and since October 2008 conference lines are not able to fix rates or capacity under EU law.

Export Cartels

More controversial are the exemptions given to export cartels. Levenstein and Suslow (2004) found that 51 (or about half) of the countries with antitrust regimes exempted export cartels including the USA, Australia, Canada, and New Zealand. Again there is a theory to support these exemptions: "Where the cartel is comprised of small to medium-sized businesses and its aim is to increase the value of exports by reducing costs, sharing risks and improving products, the cartel is likely to be welfare-enhancing." (Sweeney, 2007). Dick (1992) found that of the 16 US commodity export cartels he studied, five were efficiency-enhancing, three monopoly-promoting, one with mixed effects, and seven relatively useless.

Cartels where there are environmental problems

Cartels in industries with significant environmental problems – where there are economic "bads" rather than goods – can have beneficial effects. Restricting the output of an economic bad is good. Take an extreme example. When most people hear the word cartel they think of a Colombian drugs cartel. No one has yet suggested that antitrust should be used to bust these cartels because they restrict output and charge higher prices. And there is a good reason. A drugs cartel reduces drug trafficking to keep its profits high. For the very reason a cartel is attacked in the legitimate economy it generates a superior outcome – output reduction i.e. less drugs trafficking. Competition in the supply of a 'bad' is inefficient and hence high prices and lower output is good. The idea applies also to industries in which bads are a "by-product" of otherwise legitimate and productive activities.

This example has direct relevance to antitrust especially to industries where there are significant environmental problems or concerns. An industry which generates pollution does not take the full costs of its activities into account, and hence output is over-expanded and price too low. Economic efficiency requires a reduction in the harmful activities and the associated output. It also requires the product's price to increase to incorporate the higher pollution-inclusive costs. A cartel by raising prices can move such an industry's output and harm closer to the efficient level, although this would not be in response to higher pollution-inclusive costs – which makes this a second-best solution.

Recently the European Commission adopted such a cartel-like solution when it permitted a restrictive agreement among producers and importers of washing machines covering 95% of European sales to discontinue production and imports of the least energy efficient washing machines representing 10-11% of current EC sales. The agreement would adversely affect competition and increase prices since the most polluting machines are also the least expensive ones.

Common Property Industries

A more clear-cut case of an efficient cartel is where firms compete over a common property resource where property rights are ill-defined or absent such as fisheries. In these industries competition leads to excessive entry, over-exploitation, and the dissipation of the economic returns (rents). A cartel would be unambiguously efficient even though it increased prices, reduced production and foreclosed entry. The benefits of such cartels have however not been recognised by competition authorities. The Dutch competition authority's (Case No. 2269/330) and the European Commission's (Press Release, 27 November 2013**)** North Sea Shrimp decisions imposed heavy fines on Dutch shrimp fleet and wholesalers' organisations for agreeing fishing quotas and prices. One study showed that the agreement reduced the fishing catch by at least 12%-16% during the cartel period and increased wholesale prices, implying a loss of consumers' welfare. However, this output reduction and increased prices was not necessarily consumer welfare-reducing in the medium to long run if it is accepted that a competitive outcome (the counterfactual) would have led to over-fishing.

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Third party litigation funding

Facts and estimates for the UK

Third party funding of commercial litigation has been much talked about. In some quarters there is the impression that it is rampant and undermining the proper administration of justice. The reality is very different. Here original research on the extent and nature of third party litigation funding (TLPF) in the UK is summarised.

Commercial TPLF defined

TPLF is where an investor otherwise unconnected with a legal action finances all or part of a claimant's legal costs. If the case fails, the funder loses its investment and is not entitled to receive any payment. If the case succeeds, the investor takes an agreed success fee. This *Casenote* is concerned with the funding of commercial litigation by dedicated TPLF investors, and not other forms of third party funding such as legal aid, legal expenses insurance, conditional and contingency legal fees, and so on.

The Funds

At November 2011there were 15 dedicated TPLF funders that stated they supplied or had raised funds in the UK. The number of active investors funding UK litigation is smaller. IM Litigation Funding ceased operations during 2011, Juridica and Burford raised funds in the UK mostly to invest in US litigation, and IMF (Australia's largest TPLF investor) only co-funded a few claims. This leaves 10 active TPLF investors, with a further four (Juridica, Burford, IMF, Argentium) making occasional investments. Others have recently announced plans to enter such as Fulbrook, Axiom Legal Financing, and Firstassist (the last just acquired by Burford to offer TPLF in the UK).

The funds invested and raised in the UK exceed £457m. Based on interviews it is estimated that eight of the UK based investors have collectively raised about £157m. A further £300m was raised on AIM in London by Burford and Juridica for litigation elsewhere. Most TPLF investors are small with the three largest UK focused investors (Harbour, Calunius and Vannin) accounting for 80% of the estimated investible funds for the UK.

The Claims

TPLF investors only fund commercial litigation such as contract, commercial, patent infringement, insolvency, and some group claims. Nearly all stated that they do not fund complex multiparty construction, patent trolling, matrimonial, personal injury, defamation, and clinical negligence claims. Several fund arbitration and group (cartel damage) claims. Most have funded claims in the English & Wales courts, and a few claims in other common law jurisdictions.

In the UK the TPLF investors are confined to the provision of funds only. They cannot interfere in the management of the claim due to the residual laws of champerty and maintenance. Thus there is a premium on good case selection, and the evaluation of the lawyers' competence and ability to control legal costs.

The Civil Justice Council estimated that by mid-2010 no more than 100 cases had received third party financing in the UK. Others have suggested that this is an underestimate putting the figure at two or three times higher. Based on interviews about 187 claims have been or are currently being funded by TPLF investors. This gives an estimated 62 claims funded in 2011.

Alternatively a crude estimate of the financial capacity of existing TPLF investors to fund new claims can be made. In 2010 Harbour raised a £60m fund which it has allocated to 30 claims over two years. This suggests an average investment of £2m. If we apply this across all TPLF investors with banked funds, this gives a financial capacity to fund around 75 cases over a two year period for seven TPLF investors. Adjusting for a proportion of smaller claims and the other four active TPLF investors who did not supply funding data, suggests that the industry can fund at least 46 new claims annually.

Case Selection

The minimum claim funded by many TPLF investors exceeds £1m, and some have larger minimum claims exceeding £5m. In addition some have a minimum investment amount, and the larger funds limit the percentage of their funds allocated to any one claim.

The acceptance rate of claims seeking TPLF is around 1 in 12. Based on data supplied by six TPLF investors, they reviewed 1,446 potential claims and agreed to fund only 118 or 8%. It is clear that fairly stringent criteria are used to select fundable cases, including that the claim should have a 70% or more chance of success.

Success fees and returns

There are two methods of 'pricing' the return to a TPLF investment – a multiple of the investment or a per

centage of the award or settlement, or a mix of both. Some TPLF investors will look for a return of between 1.5 to 6 times their investment, depending on the complexity and duration of the case. Others seek their return as a percentage of the award or settlement. This can vary between 20% to 40%, to in some cases 50% or more.

This suggests high returns. A brief, but it is suggested optimistic, glimpse is provided by Therium which has reported that the four cases successfully finalised at the beginning of 2011 generated a 207% return on their investments. Australia's largest investor IMF reported an internal rate of return of 75% before overhead expenses for claims finalised in the period 2001 to 2010.

Risks

It is important not to be mesmerised by the headline success fees. The success fees must cover the investment on those claims that have been lost. Despite due diligence and the selection of 'strong' cases, a large number will fail given the uncertain nature of litigation. Indeed, based on the selection criteria one expects a failure rate of about 30%. Interestingly (and perhaps coincidentally) IMF's 'failure rate' is 24%.

Several recent cases underscore those risks. *Moore Stephens v Stone Rolls* was a £89m professional negligence claim brought in 2007. The liquidators alleged that the company's auditors Moore Stephens failed to detect the fraudulent activities of its owner which resulted in the company's liquidation. IM Litigation Funding invested in a claim which it estimated had a 70% chance of success and a reported £40m success fee. The High Court ruled in Stone Rolls' favour, but was overturned in June 2009 Court of Appeal (affirmed by the House of Lords) ruling that a company liable for fraud committed by its director to the third parties could not bring a claim for damages against its auditors. IM Litigation Funding lost its investment and because it had not taken out ATE insurance it paid an additional £2.5m in adverse costs. While its legal director said "this is not the end of third party funding" at the time of the judgment, IM Litigation Funding has since ceased trading (for undisclosed reasons).

Arkin, described by the judge as 'disastrous piece of litigation', illustrates the potential costs of failure. Arkin's lawyers worked on a conditional fee arrangement and MPC funded the costs of expert forensic accountants in return for 25% share of the damage/settlement sum up to £5m, and 23% thereafter plus any recovery of experts' costs from the defendants. MPC budgeted for an investment of about £600,000. MPC's actual investment was over double this at around £1.3m plus the threat of adverse costs of nearly £6m. In the end the court limited MPC's liability for adverse costs to £1.3m i.e. equal to the sum it invested (subsequently know as the Arkin Rule), thus raising the investment (and loss) to £2.6m. That is, MPC's investment was over four times greater than initially estimated, and it could have been exposed to £7.3m in costs had the court ordered it to pay the full adverse costs of the defendant.

Access to Justice?

The judicial (*Arkin*) and public policy (Jackson Comiteee) rationale for TPLF is access to justice. This is a weak justification for the type of commercial litigation so far funded. In many of the cases it is not the claimant's impecuniosity but a rational commercial decision that TPLF is the best way to fund litigation. TPLF is used to take the costs of litigation off-balance sheet and to improve cashflow. For others TPLF does allow a meritorious claims to proceed which would otherwise not have been pursued. The Jackson Committee recommendation that a TPLF investor be potentially liable for all adverse costs will act as a deterrent to funding, and put those lawyers working on conditional (and soon contingent) fee arrangements in a privileged position.

The Evidence

The effects of TPLF are hard to estimate in theory and practice. The preceding discussion shows that the net increase in cases is likely to be much smaller than the number receiving TPLF. There are other reasons to believe that TPLF may actually increase settlements, decrease average legal costs, and discourage some more speculative actions. Unfortunately there is little hard evidence. One study found that TPLF did not increase the number of cases litigated in Australia but may have increased the duration of funded cases. Another study found that TPLF encouraged settlement for group (shareholder) actions in Australia.

This Casenote is based on "Third Party Litigation Funding in Europe" (double click to download draft version) forthcoming in *Journal of Law, Economics & Public Policy.*

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Penalties for price-fixers

A survey of 43 fines imposed on price-fixers by the EC Commission

The EC *Penalty Guidelines 1998* was designed to make the calculation of fines more systematic and transparent. Here an overview of the fining principles and practice of the EC Commission is drawn from the experience to date in prosecuting cartels.

The Penalty System in Law

The fining of price-fixers has six sequential steps. Under the penalty guidelines there are four steps in calculating the fine:

1. Basic Amount *('x + y')* is made up of made up of two elements – the gravity of the offence (*x*) which is categorised as 'minor' (€1000 to €1 million); 'serious' (over €1 million to €20 million) or 'very serious' (above €20 million) and which may be increased to ensure 'sufficient deterrent' to take account of '*the effective economic capacity of offenders to cause significant damage to other operators, in particular consumers*'; and duration (*y*) which adds 10% for every year the cartel has been in operation for a year or more.

2. Aggravating & Attenuating Circumstances are then considered to increase and reduce the basic amount respectively. Aggravating circumstances include recidivism, leading role, retaliatory measures against other undertakings, refusal to co-operate with or attempts to obstruct the EC mission in carrying out its investigations and 'other'. Attenuating circumstances include passive role, non-implementation of offending agreement, termination of the infringement as soon as the EC mission intervenes, existence of reasonable doubt on the part of the undertaking as to whether restrictive conduct does indeed constitute an infringement, effective co-operation outside the scope of the leniency notice and 'other'.

3. Other Adjustments can be made to take account '*of certain objective factors such as a specific economic context, any economic or financial benefits derived by the offenders, the specific characteristics of the undertaking in questions, and their real ability to pay.*'

4. 10% cap based on the offenders previous year's world-wide turnover is then applied to the aggregate fine.

The *Leniency Notice 2002* provides for complete immunity from fines for the 'whistleblower' who is not the 'ringleader' of the cartel, and reductions of between 20% to 50% for parties who provide '*value added*' evidence '*which strengthens … the Commission's ability to prove the facts in question.*' The earlier *1996 Leniency Notice* was not so generous.

Finally, an offender can appeal the EC Commission's fines before the European Court of First Instance (CFI).

The Penalty System in Practice

Over the period 1999 to 2004 there have been 30 fully reported cartel decisions involving 43 cartels (12 separate cartels in *Vitamins* 4 of which were time-barred (and are excluded from the analysis below); and 2 each in *Belgian Brewers* and *Speciality Graphite*) implicating 207 firms. On average a cartel had 5.3 participating firms and operated for 6.2 years. The largest cartel had 16 members (*FETTCSA*), and longest operated for nearly 25 years undetected (*Organic Peroxides*). The cartels come from a wide range of industries/sectors but the chemical industry had the greatest number (17 separate cartels).

The EC Commission imposed fines of €6.3 billion before leniency. The average overall fine imposed on a cartel was €161.4 million reduced to an average of €96.2 million under the leniency programme. The average fine for a firm participating in a cartel was €30.4 million reduced to €18.1 million after leniency.

Basic Amount

The gravity of the offence was referred to in 28 decisions with the majority of offences treated as 'serious' (78%) or 'very serious' (19%). In 19 decisions the EC Commission referred to 'sufficient deterrence' and applied a multiplier of between 1.25 and 5, although the multiplier was not uniformly imposed on all firms in any individual cartel. The largest multiplier was 5 imposed on Interbrew in *Belgian Brewers* to €0.3 million gravity. In 11 decisions no deterrence multiplier was applied to any cartelists.

Aggravating & Attenuating Adjustments

21% increased for aggravating circumstances only, 24% of firms had the basic amount reduced for attenuating circumstances only, 4% for both, and 52% had no adjustment for either. The average reduction to the basic amount for attenuating circumstances was 23.3%, whilst aggravating circumstances increased fines by 43.9%.

Caps on Fines

Fines for 6 firms in 4 cartels were reduced because they exceeded the 10% cap. These led to reductions in the

total fine from between 18% (Sotheby's in *Fine Art Auctions*) to 89.5% (Perosa in *Organic Peroxides*).

In a few cases a firm's ability to pay was taken into account. SGL's fine (*Specialty Graphite*) was reduced by 33% due to financial constraints and previous fines. However, the Commission rejected ability to pay in *FETTCSA, Belgian Brewers, Graphite Electrodes,* and *Austrian Banks*. It however allowed payment by instalments (Sewon in *Lysine*), and the CFI granted suspension of payments in *French Beef* to allow three firms (FNCBV, FNICGV and FNSEA) time to raise the money necessary to pay the fines.

The Commission's Leniency Programme

Fines were reduced in 35 of the 39 cartels (90%) under the EC leniency programme. The reductions ranged from 10% to 100% with full leniency granted to one or more firms in 12 cartels (*Vitamins A & E, Carbonless Paper, Methionine, Specialty Graphite Isostatic & Extruded, Food Flavour Enhancers, Fine Arts Auctions, Sorbates, Organic Peroxides, Copper Plumbing Tubes* and *Needles & Haberdashery*). No leniency reductions were given in 4 cartels (*German Bank Charges, French Beef, FETTCSA* and *French Brewers*).

Appeals

Fines were appealed in 34 out of the 39 cartels by one or more firms. Decisions in 13 appeals are pending. Of the 21 decided appeals, 5 were dismissed (*Private Label Belgian Brewers, Luxembourg Brewers, SAS/Maersk Air, French Beef* and *Zinc Phosphate*), 3 were not adjusted by the CFI (*Vitamins A, E & B2*), and fines reduced in 13 by between 2% (*Belgian Brewer*s) to the annulment of the entire €100 million fines in *German Banks* because the EC Commission failed to get its paperwork to the Court on time and in FETTCSA because the Commission was time-barred. In *Specialty Graphite* the CFI did not adjust the €1.1 million fine imposed on Intech for isostatic speciality graphite but reduced the portion for which EDM AG was jointly and severally liable to €0.4 million, and reduced SGL's fine by 49%.

Highlights

The Commission imposed €5.4 billion as the 'basic amount' which rose to total final fines of €6.3 billion when the other elements were taken into account. The EC's leniency programme reduced fines by 40% to €3.76 billion.

Fines for minor and serious offences fell within the upper limit of the bands set in the *Penalty Guidelines* even though these relate to setting the initial amount for the gravity of the offence. For 'very serious' offences the average fine (€97.1 million) was nearly four times the minimum €20 million. Thus with the exception of 'very serious' offences, the initial tariff sets the upper limit to actual fines.

Ability to pay was not a consideration. Only one out of 207 firms had its fine reduced because of financial constraints.

The EC leniency programme significantly reduced fines. For 'minor', 'serious' and 'very serious' offences, fines were reduced by 48%, 39%, and 42% respectively. In total the leniency programme reduced total fines by €2.5 billion with 10 'whistle blowers' receiving full immunity totalling €476.5 million in forgone fines. Over €2 billion was given to other offenders who 'co-operated' with the Commission during its investigations!

The appeal rate for fines was extraordinarily high – fines have been appealed in 87% of reported cartels. In decided appeals, the CFI has reduced the fine imposed on a firm litigating the Commission's decision by a further 18% on average.

Observations

First, it pays for an offender to co-operate with the EC Commission, and then to challenge its decision in the courts. To illustrate, firms found guilty of a 'very serious' price-fixing offence fined, say, €100 million can expect an average reduction of 42% through the leniency programme and a further 18% by disputing the fine in court (the latter assuming that the CFI continues as it has). Thus a firm fined €100 million can expect to pay on average only €48 million.

Second, the leniency programme appears overly generous. Over €2.5 billion in foregone fines were purportedly needed to secure the prosecution of 26 cartels and 178 firms. However, since 12 of these cartels had already been detected by the US authorities and a further 7 were under parallel investigations, one may question whether leniency was central. Indeed, the Commission granted full leniency in 4 cartels previously detected (*Vitamins A & E, Organic Peroxides* and *Methionine*). In any event, I am sure several law firms assisted by economists would be prepared to detect and prosecute cartels for a fraction of the €2.5 billion 'cost' of the leniency programme!

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Deterring price-fixers

Do EU cartel fines deter price-fixers?

An important aspect of EC competition law is whether the current level of fines adequately deters price fixers. This is determined by the answers to two related questions – (1) Do fines approximate accumulated consumers' losses over the life of the cartel? and (2) Do fines reflect the fact that not all cartels are detected and prosecuted? Here we explore these two questions using data from 24 recent cartel prosecutions by the EC Commission.

Do Fines reflect consumer harm?

Whether fines levied by the EC Commission adequately reflect the accumulated losses sustained by consumers can be approximated using several simplifying assumptions. The loss to consumers' consists of two components – the overcharge (*OC*) on the goods sold at the higher cartel price; and the lost consumers' surplus (*CS*) on the output not produced because in order to raise price the cartel must restrict output. The lost consumers' surplus is the difference between the price consumers would have paid and the 'but for' price in the absence of the cartel on the output not produced. If it is assumed that the 'but for' price equals constant unit costs and the demand curve is linear, then the consumers' surplus loss is 50% of the overcharge, and the total consumers' loss 150% of the overcharge. Thus one can approximate the consumers' losses based on estimates of the overcharges.

Unfortunately estimates of how much consumers have been overcharged are not available (and certainly not from EC Commission decisions), nor are they easy to estimate. Thus it is necessary to make assumptions as to the likely overcharges. The OECD has estimated that cartel overcharges average 15% to 20%. A more recent survey of over 200 'social science studies' suggest higher estimates – an average overcharge of 40% positively skewed with the median of 25%, and one-fifth at 10% or less. International cartels have a larger median overcharge of 30%-33% compared to 17%-19% for domestic cartels.

For illustrative purposes it is assumed that cartels impose an annual average overcharge of 20%, that annual sales are constant at the end period annual sales as reported in the EC Commission's decision, and losses attract compound interest at 4%. Based on these assumptions, the EC Commission's fines undervalued estimated consumers' losses in all but three (*Vitamins B2, B5 & D3*) of the 24 cartels. The degree of undervaluation is over 60% in 18 cartels. If a lower average overcharge of 10% is assumed, then the EC Commission's fines reflect or more than reflect the consumers' loss in only 7 cartels (*Lysine*, all vitamins' cartels except *A, E & Carotinoids*, *Food Flavour Enhancers*).

Do fines deter price fixing?

A fine will only deter price-fixing if it makes it unprofitable for a firm. With less than certain detection and conviction, price fixers will react not to the nominal fine but to the fine discounted by the probability that it will be imposed (called the *expected* fine). To illustrate, if the fine is €100 million but only one in three cartels are successfully prosecuted, then the *expected* fine is 33% of the €100 million, or only €33 million. The corollary is that in order to deter price-fixers the fine must be grossed-up (multiplied) so that the *expected* fine equals the aggregate consumers' loss. Taking the same figures and assuming that the €100 million measures the consumers' loss, the optimal fine with a conviction rate of 33% is three time the loss i.e. €300 million. This idea that fine necessary for deterrence must be some multiple of the gains/losses is familiar to competition lawyers in the form of 'double fines' and 'triple damages' in US antitrust law.

Again there is no data on the probability of detection when these cartels were formed or today. There are some estimates of cartel detection rates. Bryant and Eckard, in a now dated study, estimate that about 1 in 7 cartels are detected. Others suggest a much lower figure of 1 in 10 cartels. To assess whether the present level of fines can be expected to deter price-fixing it is assumed that 1 in 3 (33%) cartels are successfully prosecuted, which is considerably higher than suggested by the above studies. The optimal fine can be calculated from the estimates of the overcharge for each cartel. The optimal fine equals $(1.5 \times OC)/c$ or slightly over 4.5 times the estimated overcharge (OC) assuming a 1 in 3 conviction rate (c).

Based on these assumptions the EC Commission's fines significantly under-deter price-fixing. As the last column in the table below shows, fines would have to increase substantially for each cartel – instead of nearly €3 billion collected in fines from the 24 cartels, over €50 billion or fines on average 18 times greater than those imposed by the EC Commission would be needed to deter price-fixers. With a 10% overcharge things improve, but the optimal fine is still on average many times (about ten-fold) greater.

Conclusions

The above calculations have been based on arbitrary assumptions and simple calculations. They ignore, for example, the way that the substantial 'fine discounts' under the EC leniency programme increase the conviction rate. Nonetheless, if future more detailed research confirms the findings above, fines will need to increase substantially to deter price-fixing. The effectiveness of such high fines depends on the firms' ability to pay, and their enforcement costs, and political and public acceptability. If fines are so high firms that firms are not able to pay them, this will not only send firms bankrupt but they will not deter price-fixing. The judgment proof firm will act as if it is not subject to sanctions! Moreover, very high fines may be difficult to fully implement and clash with core legal principles, such as proportionality, and undermine the legitimacy of the law. In the light of these potential constraints, other monetary (damages) and non-monetary sanctions (imprisonment/disqualification of directors), and/or an increase in enforcement activity to raise detection rates will be needed to achieve deterrence.

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Estimates of overcharges, fines and optimal fines for 24 EU prosecuted cartels

Cartel	*years*	Fine *€m*	Sales *€m*	*OC* *€m*	C^{er} Loss *€m*	Fine/C^{er} Loss	Optimal Fine Fine *€m*	Optimal Fine Multiplier
Lysine	4	103	164	121	181	57%	549	5.4
Vitamin A	9	132	150	275	413	32%	1,251	9.5
Vitamin E	9	203	250	459	688	29%	2,085	10.3
Vitamin B2	4	70	34	25	38	186%	114	1.6
Vitamin B5	8	106	35	64	96	110%	292	2.8
Vitamin C	5	114	120	112	168	68%	510	4.5
Vitamin D3	4	41	20	15	22	184%	67	1.6
Beta carotene	6	64	76	87	131	49%	397	6.2
Carotinoids	6	62	50	57	86	72%	260	4.2
Carbonless Paper	4	314	1,079	799	1,198	26%	3,631	11.6
Graphite Electrodes	6	164	420	481	722	23%	2,188	13.3
Methylglucanine	9	3	3	6	9	33%	26	9.1
Citric Acid	4	135	320	236	353	38%	1,071	7.9
Plasterboard	7	478	1,210	1,652	2,478	19%	7,508	15.7
Methionine	13	100	260	748	1,122	9%	3,400	34.0
Isostatic Speciality Graphite	5	42	84	79	118	36%	358	8.5
Extruded Speciality Graphite	4	9	42	31	46	19%	140	15.9
Food Flavour Enhancers	9	21	12	22	33	62%	100	4.9
Carbon & Graphite Products	10	101	290	604	905	11%	2,744	27.0
Organic Peroxides	25	70	250	1,694	2,649	3%	8,029	115.5
Choline Chloride	6	66	122	140	210	32%	635	9.6
Copper Plumbing Tubes	13	222	1,151	3,311	4,967	4%	15,052	67.7
MCCA Chemicals	15	217	125	434	651	33%	1,972	9.1
Rubber Chemicals	5	76	200	188	282	27%	854	11.3
Totals		**2,911**	**6,467**	**11,639**	**17,567**		**53,232**	**18.3**

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New EU penalty guidelines

Will the 2006 guidelines decrease fines?

The European Commission's new 2006 *Penalty Guidelines*, which will come into force in September 2006, alter the way fines are to be set for infringements of EU competition rules. The major difference is a move away from arbitrary tariffs based on the gravity of the offence, to fines based on sales and duration.

Major changes

Under the new guidelines, the basic amount of the fine is calculated as a proportion of sales and the duration of the offence. The fine can be up to 30% of the value of sales in the last full business year of the offence for each year of the infringement. In addition between 15% and 25% of the value of sales will be imposed as a deterrent to cartels, and may be imposed for other offences. Thus the basic amount (B) equals a proportion (a) of sales (S) multiplied by the number of years of the infringement (T), and an uplift for deterrence (b) i.e.

$$B = aST + bS = (aT + b)S.$$

Like the earlier guidelines uplifts and discounts are given for aggravating and mitigating factors respectively. Aggravating circumstances include (a) recidivism (the basic amount will be increased by up to 100% for each prior offence); (b) refusal to co-operate with or attempts to obstruct investigations; and (c) retaliatory or coercive measures on other undertakings to participate in the infringement. Mitigating circumstances include (a) termination of the infringement as soon as the Commission intervenes; (b) where there is evidence that the infringement was committed negligently; (c) evidence of substantially limited involvement; (d) effective co-operation outside the scope of the leniency notice; and (e) where the anti-competitive action was authorised or encouraged by public authorities or legislation. The Commission may also increase a fine so that it exceeds any gains to the offender, and based on the undertaking's turnover, the latter presumably as a measure of likely gain or harm. These considerations can be gathered together as a further adjustment factor (α), where $\alpha = 1 - (i - j - g)$, and i is discount for mitigating factors, j the uplift for aggravating factors, g an adjustment to mop up any deficit based on estimates of the offender's likely gains. Thus the fine is calculated as:

$$F = \alpha B = [(aT + b)S] * [1 - (i - j - g)] \leq 0.1WT.$$

and cannot exceed 10% of worldwide turnover (WT) in the preceding year.

Impact on fines

What impact will these changes have on the level of fines? To answer this question fines imposed on 57 firms in 14 cartels where the Commission's decision reported sales for the penultimate year have been recalculated using the 2006 guidelines and some simplifying assumptions. The basic amount was calculated assuming the following percentages using the Commission's assessment of the gravity of the offence under the 1998 guidelines - 10% of sales for 'minor', 20% for 'serious', and 30% for 'very serious' offences. A further 25% of sales was added as a deterrent factor. Sales were those within the EEA. The adjustments for aggravating and mitigating factors have been left as in the reported decisions except for *Lysine* where the 10% reduction for the immediate termination of the infringement when the Commission intervened given to all cartel members, and the additional 20% reduction given to Sewon for its passive role were removed, as these are unavailable under the 2006 guidelines. An uplift was added for prior offences of 50% each for ADM and Roche (*Citric Acid*) and Ajinomoto, Cheil and Takeda (*Food Flavour Enhancers*); and 100% for Akzo (*Choline Chloride*).

The fines under the new guidelines are on average more than double those imposed by the Commission (Table below). They would have totalled €7.7 billion compared to €3.4 billion actually imposed. Coincidently, the fines imposed by the Commission were about the same as the total sales of all 57 firms; and hence the recalculated fines under the new guidelines are more than double the last years' sales. For many firms, the fines re-calculated under the new guidelines are substantially larger - in some cases as much as 5, 6 and up to 8 times greater. This is the case for firms involved in *Carbonless Paper* and *Plasterboard* cartels who would be substantially worse off under the new guidelines. A surprising finding is that for 23 out of the 57 firms/offenders – that's about 40% - fines under the new guidelines would have been lower, and in some cases substantially lower, than they paid. Firms implicated in the *Vitamins B2, B5, C, D3, Beta carotene & Carotinoids*, *Lysine*, and *Food Flavour Enhancers* cartels (as shaded in the Table below) would have been better off under the new guidelines. This is surprising given that the *Vitamins'* cartels were regarded as the most outrageous examples of price-fixing yet

detected. However, this finding may not reflect the true position generally, given that these cartels were fined very heavily under the 1998 guidelines. They may also have had the 'book thrown at them' had the new guidelines been in operation at the time of the decisions.

Fines under 1998 and 2006 penalty guidelines

Cartel/Date	Cartelists	Basic amount	2006 Fine		1998 Fine	ratio
			€m	% Sales	€m	
Amino Acids (Lysine)	ADM	34.9	52.3	128%	52.6	1.0
	Ajinomoto	78.8	118.1	158%	56.6	2.1
	Kyowa	16.8	16.8	105%	18.9	0.9
	Cheil Jedand Corp	14.5	14.5	85%	17.4	0.8
	Sewon	15.8	15.8	105%	17.8	0.9
Vitamin A	BASF	132.8	179.2	398%	92.3	1.9
	Roche	177.0	265.5	443%	171.0	1.6
	Aventis	110.6	110.6	295%	68.4	1.6
Vitamin E	BASF	184.4	248.9	398%	179.7	1.4
	Roche	184.4	276.6	443%	199.5	1.4
	Aventis	147.5	147.5	295%	39.9	3.7
	Eisai	99.4	99.4	265%	18.9	5.3
Vitamin B2	BASF	20.3	27.4	196%	37.8	0.7
	Roche	29.0	43.5	218%	84.0	0.5
	Takeda	7.8	7.8	130%	13.5	0.6
Vitamin B5	BASF	27.8	37.6	358%	68.0	0.6
	Roche	41.7	62.6	398%	108.0	0.6
	Daiichi	27.8	27.8	265%	36.0	0.8
Vitamin C	BASF	28.8	38.9	216%	29.4	1.3
	Roche	126.4	189.6	240%	131.0	1.4
	Takeda	20.8	20.8	160%	43.5	0.5
	Merck	20.8	20.8	160%	10.9	1.9
Vitamin D3	BASF	5.8	7.8	196%	15.1	0.5
	Roche	8.7	13.1	218%	42.0	0.3
	Aventis	2.9	1.5	73%	5.6	0.3
	Solvay	13.1	13.1	145%	14.0	0.9
Beta carotene	BASF	23.4	31.5	277%	86.4	0.4
	Roche	132.4	198.6	308%	96.0	2.1
Carotinoids	BASF	14.3	19.2	257%	83.7	0.2
	Roche	14.3	21.4	285%	93.0	0.2
Carbonless Paper	AWA	480.9	721.3	195%	283.5	2.5
	Bollore	53.6	53.6	95%	28.4	1.9
	Carrs	8.7	8.7	75%	1.8	5.0
	Divipa	15.4	15.4	75%	1.8	8.8
	MHTP	210.2	210.2	130%	33.1	6.4
	Zicunaga	7.6	7.6	45%	1.5	4.9
	Mougeot	25.7	25.7	85%	7.3	3.5
	Koehler	144.8	144.8	130%	33.1	4.4
	Sappi	37.2	37.2	95%	15.1	2.5
	Torraspapel	58.3	58.3	95%	14.2	4.1
	Zanders	175.9	175.9	130%	33.1	5.3
Citric Acid	ADM	48.3	89.4	194%	79.4	1.1
	Cerestar Bioproducts	24.3	24.3	115%	4.6	5.3
	Haarmann & Reimer	45.5	45.5	145%	122.5	0.4
	Hoffmann-La Roche	59.9	110.9	268%	79.4	1.4
	Jungbunzlauer	101.5	101.5	145%	29.4	3.5
Plasterboard	BPB	1,111.0	1,666.5	330%	198.0	8.4
	Knauf Westd'	737.0	737.0	220%	85.8	8.6
	Lafarge	584.3	876.4	308%	249.6	3.5
	Gyproc	53.6	40.2	49%	7.2	5.6
Food Flavour Enhancers	Ajinomoto	6.6	9.9	293%	22.2	0.4
	Cheil	2.3	3.5	308%	4.6	0.8
	Daesang	2.3	2.3	205%	4.6	0.5
	Takeda	2.4	3.6	323%	9.4	0.4
Choline Chloride	UBC	131.0	97.2	100%	14.8	6.6
	Akzo Nobel	20.4	40.8	270%	30.0	1.4
	BASF	13.4	20.0	203%	43.7	0.5
	Totals	**5,924.6**	**7,655.6**	**226%**	**3,368.6**	**2.3**

Assessment

The *2006 Penalty Guidelines* directly link fines to sales, the duration of the offence, and offenders' gains. They are therefore more likely to reflect the overcharge and gains/losses arising from a cartel. This contrasts with the arbitrary amounts under the 1998 guidelines. There is also a greater focus on deterrence with fines aimed at ensuring that offenders' do not profit from price-fixing. Moreover, there is an appreciation of marginal deterrence in the way recidivism and other indicators of greater involvement in cartel formation and enforcement are penalised. These are all moves in the right direction. On the other hand, there is evidence that the 1998 guidelines were capable of meting out very high fines and possibly larger ones than the new guidelines. The guidelines are also overly complicated, and take the same factors into account several times e.g. in the calculation of the basic amount there is an uplift for deterrence and then a further uplift to reflect the offenders' gain; cooperation is rewarded and again rewarded under the leniency programme. Given the large number of appeals against the Commission's fines these ambiguities should have been avoided. Finally, whether these fines are high enough to deter price-fixing is another question – we have previously indicated that the optimal fine necessary to adequately deter price-fixers is many orders of magnitude greater that those possible under the 1996 and also 2006 guidelines (see our May 2006 *Casenote*).

This is the third in a series of Casenotes on fines, deterrence and damages under EC competition law.

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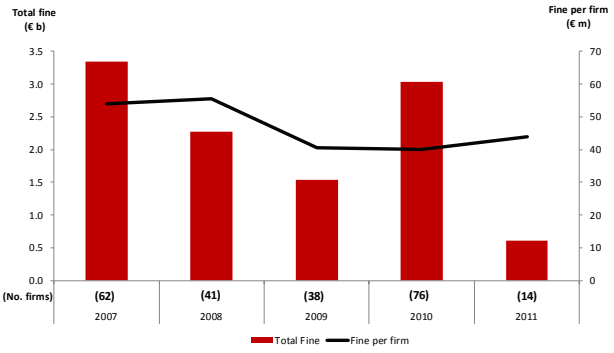
CASENOTE
Economics of Competition & Regulation February 2012

Are European cartel fines ridiculously high?

At the European Commission's Competition Forum a leading antitrust lawyer declared during the morning coffee break that Europe's cartel fines were "ridiculously high", and that the European Commission had recently taken its foot off the pedal (my not his phrase). It is true that European cartel fines have been very high. It is also true that the aggregate fines in 2011 collapsed to just over €600 million compared with €3 billion in 2010 i.e. nearly one-fifth of the previous year.

What happened in 2011?

In 2011 the European Commission penalised four cartels, three through its new settlement process. The number of completed prosecutions and the aggregate fines in 2011 represented a major reduction in the European Commission's enforcement activity (see Table overleaf). Moreover, the average fine imposed on each cartel was €154 million, less than half of the average €348 million over the previous four years under the 2006 Penalty Guidelines (Veljanovski, 2011). This clearly reduces the general deterrent effect of the law since it implies a decline in the prosecution rate and the expected fine.



However, if one looks behind the headline figures a different picture emerges for those firms unlucky enough to have been successfully prosecuted. The cartels prosecuted in 2011 were smaller (an average of 3.5 v. 7.6 firms) and shorter (average duration 3.3 v. 8.9 years) than those of the preceding four years. That is the cartels prosecuted in 2011 had less than half the firms and allegedly fixed prices for less than half the number of years.

The fact that the 2011 cartels were smaller and shorter suggests that the fines imposed on each firm may not have been so dramatically different from those in previous years. This was the case. The average fine per firm (inclusive of the full leniency applicant) across the four cartels was €43.9 million compared to the average of €46 million for those prosecuted in the previous four years. Indeed if we adjust for partial leniency and settlement discounts, and make some assumption about the fine that would have been paid by the four full leniency applicants we get an estimated average fine per firm of around €89 million. Note that the implied reduction in fines due to the leniency and settlement programmes is a massive 50%.

If these fines are further adjusted to take account of both the number of firms and the duration of the cartel – that is normalised for the number of what I term "cartel years" - then the fine was over €13 million per cartel year compared to an average €5.0 million per cartel year in the previous four years.

Three of the four cartels prosecuted in 2011 were settled (Refrigeration Compressors, CRT Glass, and Washing Power). By agreeing to settle each firm received a 10% reduction in the notional fine which would have otherwise been imposed. Given the similarity of the post-settlement fines in 2011 with the post-leniency fines of previous years, it suggests that the 10% discount may have been illusory.

So was our lawyer right? Yes (as always) - the European Commission is slowing down its prosecutions but the punishments meted out to firms caught remain "ridiculously" high.

Bid Rigging

Bid rigging is conventionally regarded as the worst type of price-fixing. It tends to attract more severe punishment. Our research shows that the European Commission sets the percentage gravity of annual sales based on two main factors - the collective market share of the firms in the cartel, and whether it is a bid rigging cartel or not. If the cartel has engaged in bid rigging the European Commission increases the gravity by a massive 4 percentage points holding all other factors constant (Veljanovski, 2011).

Yet some evidence suggests that bid rigging is no worse than any other cartel. Indeed that it might even inflict less economic harm. Connor's (2010) survey of empirical studies of cartel overcharges reveals that average bid rigging cartel overcharged on average 34% less than the average of other price fixing cartels. Is the

European Commission also setting "ridiculously" high fines on bid riggers?

Myths about Deterrence

The European Commission's fines are designed to foster general and specific deterrence. They have been set very high to achieve this. But when the low detection probability is taken into account many argue that the fines should be even higher to achieve optimal deterrence. Given an estimated detection rate of around 15% or lower this suggests that fines should probably be 7 or more times greater than they have been.

There is however a revisionist view. First, it challenges the published research that cartels typically overcharge their customers by between 20% to 50% (Connor, 2010). Using the same data they revise the estimated overcharge to a median of around 13% from over 20% (Boyer & Kochoni, 2011).

Second, the revisionists say that the naïve theory uses the wrong probability of prosecution. Instead of using the one-period estimate of a 15% annual probability of detection/prosecution, the conditional probability of detection/prosecution in the nth year of the cartel should be used. This implies a deterrence multiplier of 1.6 instead of nearly 7 for the average cartel which has a 6 year life. This reduces the optimal fine substantially.
Allain *et al* (2011) estimate that the fine necessary for optimal deterrence is a round 28% to 67% of annual sales depending on assumptions as to profit margins and demand elasticities rather than 503% to 923% estimated by Coombe & Monnier (2011). Allain *et al* estimate that for the 64 firms prosecuted over the period 1975 to 2009 for which data was available, 56% were fined at levels that were sufficient or more than sufficient to satisfy the goal of optimal deterrence.

Using my database of 50 firms of the 168 firms for which data on sales was available prosecuted under 2006 Penalty Guidelines, about 69% of firms received final fines at or in excess of 67% of annual sales. Indeed 28% were fined in excess of their annual sales. Those firms implicated in bid rigging (Marine Hoses) were fined between over two to 6.5 times annual sales. This suggests that some fines may have been excessive, while others inadequate.

Conclusion

The European Commission's fines are high, set often at levels that may encourage optimal deterrence and many appear "ridiculously high". Others are too low, and the leniency and settlement programmes seem to have heavily discounted the fines. And if you are rigging bids watch out.

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European cartels prosecuted in 2011

Decision Date	Cartel	Fine (€m)	Duration (yrs)	No Firms	Fine/firm (€m)	Fine/cartel year (€m)
13-Apr-11	Washing Powder	315.2	3.2	3	105.1	33.2
12-Oct-11	Bananas	8.9	0.8	2	4.5	5.9
19-Oct-11	CRT Glass Bulbs	128.7	5.8	4	32.2	5.5
07-Dec-11	Refrigeration Compressors	161.2	3.5	5	32.2	9.2
Total		**614.1**	**13.3**	**14**		
Average		**153.5**	**3.3**	**3.5**	**43.9**	**13.2**
Average 2007-2010		**348.0**	**8.9**	**7.6**	**45.6**	**5.1**

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Economics of Competition, Regulation & Litigation July 2013

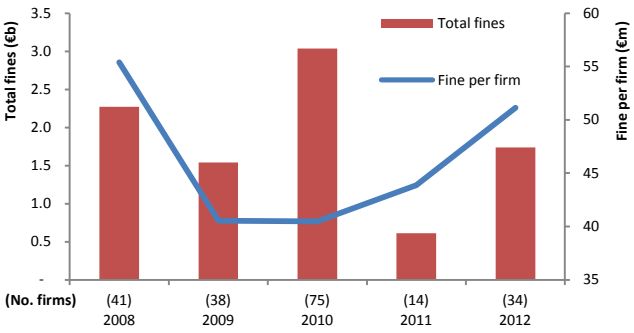
European cartel fines in 2012

In 2012 the European Commission concluded four cartel investigations. It fined 34 firms around €1.7b, nearly three times the very low fines (€0.6b) levied in 2011. It also imposed the highest fine ever of €1.47b. Here we review the Commission's enforcement activity during 2012.

2012 in figures

The European Commission fined firms in four cartels - *TV and Computer Monitor Tubes*, *Water Management Products*, *Freight Forwarding* and *Mountings for Windows*. In addition the European Commission re-adopted the 2007 *Gas Insulated Switchgear* decision after the European General Court's ruling that the original decision breached the parties' equal treatment. While the European Commission has included this in its official statistics, we have not.

On average, the cartels prosecuted in 2012 existed for longer and were larger than those prosecuted in 2011. The average duration was 6.1 years compared to 3.3 years in 2011; the average number of firms per cartel was 8.5 compared to 3.5 in 2011. Including the full leniency applicant, the average fine per firm was €51m, considerably greater than €44m imposed in 2011. However, without the full leniency applicant the average fine was similar (€58m in 2012 vs €61m in 2011) as the cartels prosecuted in 2011 were smaller.



These aggregate statistics do not take into account the combined effects of differences in duration, size and the affected sales. Some of these differences can be accommodated by our measure of "cartel years", which is the sum of the number of firms multiplied by their years' participation in the cartel. The average fine per cartel year in 2012 was €8.3m (or €9.4m excluding full leniency applicant), considerably lower than the €13.3m (or €18.6m) in 2011.

The European Commission's decisions were remarkably varied (see table below). *Monitor Tubes* accounted for 77% of the total annual fines. The €1.47b fine is now the biggest fined ever imposed by the Commission. It implies an average fine of €183m per firm or €18m per cartel year. This contrasts with the much lower fines per cartel year imposed on the other cartels – €2.3m (involving 3 firms operating for 2 years) in *Water Management Products*; €2.4m (14 firms for 5 years) in *Freight Forwarding*, and €1.3m (9 firms over 7.5 years) in *Mountings for Windows*.

The ratio of fines to affected sales provides a further measure of the severity of penalties. Unfortunately affected sales figures are available only for *Water Management Products*. For the two firms prosecuted the ratio of fine per cartel year to annual affected sales was 11%, or 22% if the fine to sales ratio is used. This is considerably lower than we have previously calculated (*Casenote*, February 2012) where 69% of firms received final fines of or in excess of 67% of annual affected sales.

Trends

A closer look at the European Commission's cartel decisions reveals other trends.

First has been the continuing delays in the publication of the European Commission's full (non-confidential) decisions. Only one decision, *Water Management Products*, has so far been published; the other three were announced by press release with the non-confidential version awaiting agreement with the parties over the redaction of commercially sensitive information. This has so far resulted in delays of 7 months (*Monitor Tubes*) and 15 months (*Freight Forwarding* and *Mountings for Windows*) in publication.

The European Commission continues to rely on its leniency programme, both as a detection tool and as a means to gather information from cartelists. All four investigations were triggered by a whistleblower who received 100% leniency. Overall, leniency reductions

(including full leniency) were given to 15 of the 34 firms (44%). The aggregate leniency discount can only be calculated for *Monitor Tubes* where it was 13.7%.

In the pipeline

As at mid-July 2013 there were 22 active investigations and one further decision issued (*Wire Harnesses).* During 2012 the Commission issued three Statements of Objection (SOs) in *Retail Food Packaging, Optical Disc Drives* and *Shrimps*, with another issued in 2013 (*Power Cables*) In addition, the Commission carried out five dawn raids, and opened two new investigations (IO).

Investigation	Start date	Stage
Blocktrains	Jun 2013	Inspection
Sugar	May 2013	Inspection
Smart Card Chips	Jan 2009	SO
Car Battery Recycling	Sep 2012	Inspection
Retail Food Packaging	Sep 2012	Inspection
Maritime Car Carriers	Sep 2012	Inspection
Wire Harnesses	Feb 2010	Fined €141m
Optical Disc Drives	Jul 2012	SO
Thermal Systems	Jul 2012	Inspection
Plastic Pipe Fittings	Jul 2012	Inspection
Plastic Pipe Systems	Jul 2012	Inspection
Shrimps	Mar 2009	SO
Power Exchanges	Feb 2012	Inspection
French Water Sector	Apr 2010	IO
Bearings	Nov 2011	Inspection
Euro Interest Rate Derivatives	Oct 2011	Inspection
Power Cables	Feb 2009	SO
Occupant Safety Systems	Jun 2011	Inspection
Container Shipping	May 2011	Inspection
Trucks	Jan 2011	Inspection
Cement & Related Products	Nov 2008	IO
Paper Envelope	Sep 2010	Inspection
Polyurethane Foam	Aug 2010	Inspection

The Commission in court

The European Commission has had more success in the courts in 2012. There were only two decisions by the European courts. The ECG upheld the European Commission's fines for three firms in *Calcium Carbide.* It annulled fines imposed on Mitsubishi and Toshiba in *Gas Insulated Switchgear* because the European Commission incorrectly used annual sales figures from different reference years hence breaching the parties' equal treatment. The European Commission reimposed fines of €136m reduced from the €209m originally imposed in 2007.

Almunia v. Kroes

Commissioner Almunia continues the 'war on cartels' launched by his predecessor Neelie Kroes who stood down as Commissioner in February 2010. The data suggest continuity in enforcement activity and severity of fines despite the lower figures for 2011 – under Kroes the average fine per firm was €42.6m compared to €43.8m during Almunia's three year tenure. Fines per cartel year were also comparable - €5.2m against Kroes' €4.6m.

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Cartel	Fines (€m)	Firms	Years	Fine/firm (€m)	Fine/cartel year (€m)
TV and Computer Monitor Tubes	1,470.5	8.0	10.0	183.8	18.4
Water Management Products	13.7	3.0	1.9	4.5	2.4
Freight Forwarding	169.0	14.0	5.0	12.1	2.4
Mountings for Windows	85.9	9.0	7.7	9.6	1.2
Totals	**1,739.2**	**34.0**	**24.6**		
Averages 2012	434.8	8.5	6.1	51.1	8.3
Averages 2011	153.5	3.5	3.3	43.8	13.3
Averages for Almunia (2010-2012)	384.9	8.8	8.4	43.8	5.2
Averages for Kroes (2005-2009)	311.8	7.3	9.2	42.6	4.6

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Economics of Competition, Regulation & Litigation
January 2014

European cartel fines in 2013

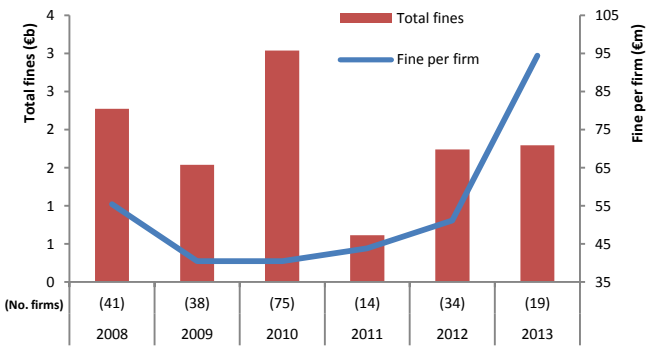
In 2013 the European Commission concluded four cartel investigations, imposing total fines of €1.8b. This was similar to the total fines in 2012. The European Commission also levied its biggest fine ever of €2.5b on UBS, which escaped payment under the Commission's leniency programme for blowing the whistle on the European interest rate derivatives cartel. This made it also the biggest leniency reward to date.

Activity of the Commission in 2013

The European Commission fined firms in four cartels. These were in the industrial, primary and financial sectors. In *Automotive wire harnesses* four firms were fined €141m for running a cartel for up to nine years. Two prosecutions involved the rigging of interest rate derivatives – in *Euro interest rate derivatives* (*EIRD*) four firms were fined a total of €1b; and in *Yen interest rate derivatives* (*YIRD*) six firms were fined €670m. Four European North Sea shrimps traders involved in *Shrimps* were fined a total of €28m.

Comparison across years

Total post-leniency fines in 2013 were in line with those imposed in 2012 – €1.79b against €1.74b (more details on 2012 see our July 2013 *Casenote*). However when account is taken of the number of firms, fines were nearly twice as large as those in 2012 – an average fine per firm of €94m compared to €51m in 2012 (see figure below). This was the highest average fine per firm imposed by the European Commission since 2008 where the annual average varied between €41m and €55m. If the full leniency applicant is excluded, the average fine in 2013 was about €120m compared to €58m in 2012.



The two interest rate derivative cartels were responsible for the higher fines per firm. Fines imposed on firms in *EIRD* and *YIRD* constituted 55% and 36% of total post-leniency fines respectively. The financial institutions involved were fined an average of €261m *(EIRD)* and €112m (*YIRD*). These are respectively the third and the seventh largest average post-leniency fines per firm for the 52 European Commission decisions since 2004.

Cartels prosecuted in 2013 had fewer members (4.75 versus 8.5) and were shorter (5.46 compared to 6.15 years) than those in 2012. Notwithstanding this, our measure of fine per cartel year – which adjusts for both the number of firms and the number of cartel years – was significantly higher in 2013 than in 2012 – €17m against €8m per cartel year.

Other notable trends

The European Commission continues to rely on whistleblowers to detect and prosecute cartels. As in 2012, all four cases were initiated by a full leniency applicant. Two whistleblowers avoided very high fines – UBS a massive fine of €2.5b (*YIRD*) making it both the largest fine ever imposed in a cartel proceeding and the largest single leniency discount; and Barclays a fine of €690m (*EIRD*). Put differently, the UBS discount is four times the total fines imposed on banks in the *YIRD* cartel, and dwarfs the total fines for the entire year. Also, all other participants in the *YIRD* and *EIRD* received partial discounts of between 5% and 50% (with Citigroup receiving a 100% discount for one of the three infringing bilateral agreements). In the *Automotive wire harnesses* Sumitomo received full leniency avoiding a fine of nearly €292m with the remaining benefiting from discounts of 20% to 50%. In *Shrimps*, only the full leniency applicant (Klaas Puul) received a discount.

Three of the four decisions (*Automotive wire harnesses*, *EIRD* and *YIRD)* were concluded under the settlement procedure, where the parties accepted liability in return for a further 10% reduction in fines. Four firms did not accept they were guilty in *EIRB* (Crédit Agricole, HSBC and JPMorgan) and *YIRD* (ICAP), and proceedings continue under the standard cartel procedure. Since its introduction in June 2008, 9

out of a total of 28 (32%) decisions have used the settlement procedure.

The European Commission Press Release on *EIRD* and *YIRD* decisions boasts that "[t]hey are one of the swiftest cartel settlements decided by the Commission, showing the full potential of the efficiencies offered by the settlement procedure". It is correct that *YIRD* was completed within 10 months from the initial dawn raid, but the *EIRD* investigations took longer at 26 months. The settlement in *Automotive wire harnesses* took 42 months from the first inspection or 11 months from the formal opening of proceedings. *Shrimps*, the only investigation closed without settlement, took 57 months to final decision. However, while the *YIRD* decision progressed at breakneck speed, settlements generally have not – of the 28 decisions since June 2008, the 9 settled cases took an average 43 months to conclude; whereas the 19 using the standard procedure took an average of 37 months.

The European Commission's tardiness in publishing its non-confidential decisions continued in 2013. None of the four full decisions have yet been published, and only one of the four investigations (*Water management products)* in 2012 has been published.

In the pipeline

The European Commission has 20 investigations in the pipeline. The Table in the next column lists active investigations together with the stage reached as at January 2014 by Inspection, Statement of Objections (SO) and formally opened investigation (IO).

In 2013 the European Commission carried out two inspections (*Blocktrains* and *Sugar*), issued two Statements of objections (*Smart card chips* and *BR/ESBR recidivism*), and closed one case (*BR/ESBR recidivism*) on administrative grounds. This is slightly less than in 2012, when the Commission issued three Statements of Objection (*Retail food packaging, Optical disc drives, Shrimps)*; carried out five dawn raids; and opened two new investigations.

Investigation	Start date	Stage
Blocktrains	Jun 2013	Inspection
Sugar	May 2013	Inspection
YIRD	Feb 2013	IO
Car battery recycling	Sept 2012	Inspection
Retail food packaging	Sept 2012	Inspection
Maritime car carriers	Sept 2012	Inspection
Optical disc drives	July 2012	SO
Thermal systems	July 2012	Inspection
Plastic pipe fittings	July 2012	Inspection
Plastic pipe systems	July 2012	Inspection
Power exchanges	Feb 2012	Inspection
Bearings	Nov 2011	Inspection
EIRD	Oct 2011	Inspection
Occupant safety systems	June 2011	Inspection
Container shipping	May 2011	Inspection
Trucks	Jan 2011	Inspection
Paper envelope	Sept 2010	Inspection
Polyurethane foam	Aug 2010	Inspection
French water sector	Apr 2010	IO
Power cables	Feb 2009	SO
Smart card chips	Jan 2009	SO
Cement & related products	Nov 2008	IO

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Cartel	Post leniency fine (€m)	Firms	Duration	Fine/firm	Fine/cartel year
Automotive wire harnesses	141.00	5	9.76	28.20	2.89
Euro interest rate derivatives	1,042.75	4	2.67	260.69	97.76
Yen interest rate derivatives	669.72	6	0.83	111.62	133.94
Shrimps	28.00	4	8.59	7.00	0.81
Total (average) 2013	**1,794.18**	**19**	**(5.46)**	**(94.43)**	**(17.29)**
Total (average) 2012	1,739.05	34	(6.15)	(51.15)	(8.32)
Total (average) 2011	614.05	14	(3.30)	(43.86)	(13.29)
Total (average) 2010	3,035.96	75	(13.40)	(40.48)	(3.02)
Total (average) 2009	1,540.13	38	(13.96)	(40.53)	(2.90)
Total (average) 2008	2,271.23	41	(7.02)	(55.40)	(7.89)

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January 2015

European cartel fines in 2014

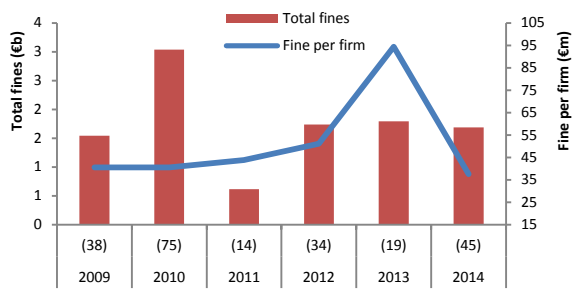
In 2014 the European Commission concluded 10 cartel investigations, imposing total fines of nearly €1.7 billion on 45 undertakings involving 54 firms. The aggregate fines were similar to those in 2013 but the number of cartel decisions far exceeded that of any previous year this decade. To achieve this result the Commission commuted over €953 million of the €2.6 billion (37%) in fines under its leniency and settlement procedures. The year ended with the appointment of Margrethe Vestager as new Competition Commissioner replacing Joaquin Almunia.

Activity of the Commission in 2014

The cartels were in the automotive parts, electronics, food, energy, financial, and industrial sectors (see below). The largest fine was €953 million paid by the six members of *Automotive Bearings* cartel which operated for seven years beginning in 2004. This was followed by €302 million in fines imposed on members of the *Power Cable*s cartel, and €138 million on four suppliers of *Smart Card Chips*.

Comparison across years

Total post-leniency fines in 2014 were in line with those imposed in 2013: €1.69 versus €1.79 billion. However, the number of cartel prosecuted increased significantly from four to 10, with the number of undertakings involved proportionately greater than 2013 - 45 compared to the 19 in 2013. In *Power Cables* and *Polyurethane Foam* the Commission imposed fines individually on the principal shareholders of some undertakings resulting in 18 rather than 11 and 6 rather than 4 entities being fined respectively.



On average the European Commission prosecuted cartels of shorter duration in 2014. The average duration was 3.9 years compared to nearly 5.5 years in 2013, with several cartels operating for less than a year (*Swiss Franc interest rate derivatives* and *Power Exchanges*).

The shorter cartels meant that the average fine per undertaking was lower at €38 million compared to €94 million in 2013. The fine per cartel year - which adjusts for both the number of firms and the number of cartel years - was also significantly lower at €9.6 million compared to €17 million in 2013.

Other notable trends

The European Commission continues to rely on whistleblowers to detect cartels. Eight (80%) of the 10 prosecutions were initiated by a full leniency applicant. These whistleblowers collectively avoided fines of €372 million. In addition the 37 partial leniency applicants received discounts of between 10% and 60% which reduced their fines in aggregate by an additional €402 million. In total the leniency programme "saved" cartelists, or cost the Commission, a total of €774 million in avoided fines.

Eight of the 10 decisions (80%) were concluded under the settlement procedure (with the exception of *Smart Card Chips* and *Power Cables*), where the parties accepted liability in return for a 10% reduction in their fines. This led to a further decrease in fines of €179 million. One firm (Pemeton S.p.a.) in *Steel Abrasives* remains under investigation through the standard cartel procedure. Since its introduction in June 2008, and its first use in *DRAM* in May 2010, 17 out of the 40 (42%) decisions were fully or partially settled.

The settlement procedure appears to have expedited the Commission's investigations. It took the Commission an average 3.1 years to process the six decisions by settlement (excluding the two Swiss Libor cartels which the Commission has yet to publicly state when these investigations commenced), compared to 5.6 years for the two investigations using the standard procedure.

The European Commission has so far only published four non-confidential decisions (*Steel Abrasives*, *Bearings*, *Power Exchanges*, *Polyurethane Foam*), which are described as "for information only" and in

one case as "provisional" only, and six "Summary of Decision" in the Official Journal (the four Decisions plus *Power Cables* and *Mushrooms*), with the remaining four as Press Releases (links in Table below).

The cap that fines do not exceed 10% of the previous year's annual worldwide turnover (Point 37, 2006 Penalty Guidelines) was applied to at least 15 undertakings/firms; in *Envelopes* (all 5 undertakings), *Steel Abrasives* (all 4), *Foam* (1), *Power Exchanges* (2), *Bearings* (1) and *Mushrooms* (2). Two firms obtained reductions for "inability to pay" (Point 35) in *Envelopes*; while one firm in *Power Cables* sought from and was refused a reduction for inability to pay.

In the pipeline

The European Commission had 17 investigations in the pipeline. The Table in the next column lists those active investigations together with the stage reached as at January 2015 by Inspection, proceedings opened (PO), Statement of Objections (SO), together with the investigation that were administratively closed (Closed) during the year i.e. where no further action is to be taken.

In 2014 the European Commission carried out one unannounced inspection (*Exhaust Systems*), and issued four Statement of Objections - involving four members of the Euro (*EIRD*) and ICAP in the Yen (*YIRD*) interest rate derivatives cartels who refused to settle in 2013, Pometen which did not settle in *Steel Abrasives*, and *Trucks*.

Investigation	Start date	Stage
Exhaust Systems	Mar 2014	Inspection
YIRD (ICAP)	Oct 2013	SO
EIRD	Mar 2013	SO
Blocktrains	Jun 2013	Inspection
Sugar	May 2013	Closed
Oil & Biofuel	May 2013	Inspection
Car Battery Recycling	Sept 2012	Inspection
Maritime Car Carriers	Sept 2012	SO/Closed
Retail Food Packaging	Sept 2012	SO
Optical Disc Drives	July 2012	SO
Thermal Systems	May 2012	Inspection
Plastic Pipe Fittings	July 2012	Inspection
Plastic Pipe Systems	July 2012	Inspection
Occupant Safety Systems	June 2011	Inspection
Container Shipping	May 2011	PO
Credit Default Swaps	Apr 2011	SO
Trucks	Jan 2011	SO
Steel Abrasives	June 2010	SO
French Water Sector	Apr 2010	PO

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Disclaimer: The inforamtrion above is largely based on European Commission decisions and Press Releases which do not necessarily contain full, and/or consistent informaiton on the factors discussed above.

Cartel Decision	Source*	Fines (€m)	Firms	Duration (years)**	Fine/firm (€m)	Fine/cartel year (€m)***
LIBOR Swiss Franc Interest rate derivatives	(S)	61.68	2	1.33	30.84	23.11
Swiss Franc Interest rate derivatives	(S)	32.36	4	0.42	8.09	19.30
Smart Card Chips		138.05	4	2.00	34.51	17.23
Steel Abrasives	(S,OJ,D)	30.71	4	6.67	7.68	1.15
Canned Mushrooms	(S,OJ)	32.23	3	1.49	10.74	7.19
Power Cables	(OJ)	301.64	11	10.01	27.42	2.74
Automotive Bearings	(S,OJ,D)	953.31	6	7.25	158.88	21.91
Power Exchanges	(S,OJ,D)	5.98	2	0.59	2.99	5.08
Polyurethane Foam	(S,OJ,D)	114.08	4	4.75	28.52	6.00
Paper Envelopes	(S)	19.49	5	4.50	3.90	0.87
Total (average) 2014		**1,689.50**	**45**	**(3.89)**	**(37.54)**	**(9.62)**
Total (average) 2013		1,794.18	19	(5.46)	(94.43)	(17.29)
Total (average) 2012		1,739.05	34	(6.15)	(51.15)	(8.32)
Total (average) 2011		614.05	14	(3.30)	(43.86)	(13.29)
Total (average) 2010		3,035.96	75	(13.40)	(40.48)	(3.02)
Total (average) 2009		1,540.13	38	(13.96)	(40.53)	(2.90)

Notes: * (S) = Settlement; OJ = Summary Decision published in the Offiicial Journal; (D) Commission (provional) Decision. ** The average duration (fourth column) assumes all undertakings in a cartel were involved for the same period. However some firms may have participated for shorter periods not discussed in the Commission's Press Releases. *** The calculation of fines per cartel year (last column) is a simple average of duration and years for each cartel.

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