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### **Fighting Cartels: Economic Analysis and European Union Experiences\***

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# Fighting Cartels: Economic Analysis and European Union Experience\*

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## Abstract

In this paper, I first briefly analyse the economics of collusion, explaining what collusion is, what are the main ingredients necessary for the firms to sustain it, and which factors facilitate it. I then review the European Union experience in fighting cartels, by focusing in particular on the standards of proving infringement of EU competition law, and on its enforcement policy. In this part, I will argue that to a large extent EU cartel policy is in line with economic thinking.

## 1 Introduction

Collusive practices allow firms to exert market power they would not otherwise have: they artificially restrict competition and increase prices, thereby reducing welfare. Accordingly, they are prohibited by any anti-trust law, and a large part of the Anti-trust Authorities' (AA) efforts are devoted to fighting such practices. However, there might be divergences across jurisdictions (and within the same jurisdiction there may be changes over time) as to the standard of proof required to prove the infringement of the law. Indeed, while any AA would agree that a written agreement or the creation of a central office to fix prices, allocate quotas of production, or share markets would be illegal, differences often exist as to how to treat situations in which firms manage to keep industry prices high without overtly colluding.

The main purpose of this article is to identify the main mechanisms behind collusion, to study the factors which facilitate it, and to explain which behaviour should be treated as an infringement of the law and which one should not. I

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<sup>†</sup>Section 2 of this paper draws on Chapter 4 of my book *Competition Policy. Theory and Practice*, published by Cambridge University Press, 2004. For a formal analysis, please refer to that Chapter.

shall also analyse what actions anti-trust authorities should take in order to deter and break collusion.

This article is structured in the following way. Section 2 briefly sketches the main features of collusion from an economic point of view, and briefly reviews factors that make collusion more likely to occur. Section 3 instead deals with the ‘practice’ of collusion in the EU. First, I will briefly describe the EU institutional and legal framework, and then I will discuss the legal standards for finding firms guilty of collusion. I will argue that to a large extent the EU practice coincides with what economic thinking recommends.

## 2 Economic analysis of collusion

In this section I will briefly characterise the economic concept of collusion. In economics, collusion is a situation where firms’ prices are higher than some competitive benchmark.<sup>1</sup> In other words, in economics collusion coincides with an outcome (high enough price), and not with the specific form through which that outcome is attained. Indeed, as I explain below, collusion can occur both when firms act through an organised cartel (explicit collusion), or when they act in a purely non-cooperative way (tacit collusion).

To avoid misunderstandings, let me emphasise that in this Section I will not use the term “collusion” as synonym for “collusive agreement that should be outlawed”, but in the economic theory sense of “high prices”. Later, in Section 3, I will argue that although in economic theory collusion is defined as a market outcome, anti-trust authorities and judges should consider as illegal only those practices where firms *explicitly* coordinate their actions to achieve a collusive outcome.

### 2.1 What are the main ingredients of collusion?

It is not easy for firms to achieve a collusive outcome, even if they are free to agree on the prices they set. In particular, every firm would have the temptation to unilaterally deviate from a collusive action, as by doing so it would increase its profit.

Consider for instance an imaginary industry consisting of two fruit sellers in a street market. Imagine they both sell pears of identical quality, and that they each pay 1\$ per kilo to their suppliers. Imagine also that each seller thinks that 2\$ per kilo is the monopoly price, and believes the other thinks in the same way. When a seller arrives at his stall, he has to decide the sales price. Suppose that he thinks the rival is setting a price of 2\$. If he charges 2\$ for his pears, he will get roughly half of the buyers, as people who want to buy pears are indifferent

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<sup>1</sup>In technical terms, the benchmark is usually the equilibrium price of a game where firms meet only once in the marketplace (a situation where collusion would not arise). For instance, in a homogenous goods game where firms choose prices, a collusive outcome would exist whenever prices are higher than the one-shot Bertrand equilibrium price; where firms choose quantities, whenever they are lower than the one-shot Cournot equilibrium quantities.

between buying from him or from the other vendor. But he will have a strong temptation to *deviate*, that is to charge a lower price than his rival: if he sets a price of, say, 1.9\$, consumers will all buy from him (why pay more for an identical product?). As a result, he will still enjoy a high unit margin but he will sell more units: in short, he will make more profits than if he sold at the “collusive” price of 2\$.<sup>2</sup>

The acknowledgment that any collusive situation naturally brings with it the temptation to *deviate* from it and therefore to break collusion, leads us to the identification of the two elements which must exist for collusion to arise. First, its participants must be able to *detect* in a timely way that a deviation (a firm setting a lower price or producing a higher output than the collusive levels agreed upon) has occurred.<sup>3</sup> Second, identifying the deviation is not enough: there must also be a *punishment*, which might take the form of rivals producing much higher quantities (or selling at much lower prices) in the periods after the deviation, thus depressing the profit of the deviator.<sup>4</sup>

Only if a firm knows both that a deviation will be identified quickly and that it will be punished (i.e., it will have to forego enough profits because of the market reaction of the cartel members), might it refrain from deviating, so that the collusive outcome will arise.<sup>5</sup>

To continue our example, after having seen why a fruit seller has a temptation to cut prices below the collusive level of 2\$, let us see under which conditions he will deviate. If the street market is small enough, and if the sellers post the prices of the fruit they sell, detection of the price cut will be immediate. After the price cut has been identified, one can bet that a seller who has so far sold at the price of 2\$ will immediately retaliate, and likely will start to sell at a price lower than 1.9\$ per kilo. The result will be a price war which will reduce the profit of both. A seller contemplating a deviation will certainly expect that the rival will retaliate. As a result, the prospect of selling for much of the day at very low prices will deter him from deviating in the first place. In other words, the awareness that a deviation will be easily detected and that a market punishment will ensue, will make each seller refrain from deviating and convince him to stick to the collusive price instead.

To summarise, for collusion to occur, firstly, there must be the possibility to

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<sup>2</sup>Of course, for this simple example to hold it is necessary that at the collusive price of 2\$ the seller does not manage to sell all the pears he comes to the market with. Otherwise, he would not have an incentive to cut his price in order to increase sales.

<sup>3</sup>Detection of a deviation is not always easy: in many markets, firms’ prices and outputs are not directly observable. Stigler (1964) was probably the first to underline this problem, and its consequences upon the likelihood of collusion.

<sup>4</sup>Note that a punishment should be thought of as a more aggressive market behaviour, and not as a direct monetary (or physical!) punishment. A punishment also hits the punishing firms, and not just the deviating firm, precisely because it has to rely on market mechanisms (a low price affects all the firms’ profits). It is therefore crucial that firms are willing to take part in the punishment.

<sup>5</sup>In turn, this implies that collusion can be sustained only if firms meet repeatedly in the marketplace. Otherwise, a punishment cannot take place. In technical terms, collusion will never arise in a one-shot game. This is why collusion should be modelled through dynamic (repeated) games.

*detect* deviations from a collusive action in a timely way. Secondly, there must be a credible *punishment* which follows a deviation.

It is important to stress that in the example, the two fruit vendors do not talk to each other, neither directly nor through intermediaries: collusive prices will arise through purely non-cooperative behaviour of the sellers. In other words, if detection of deviations is rapid, and if (market) punishments of deviations are likely and credible, then *tacit collusion* can arise: firms do not necessarily have to talk to each other, let alone agree on complicated schemes, for a collusive outcome to be sustainable. All that is needed is the awareness that a deviation will be identified, and that a “punishment” will follow.

## 2.2 Coordination: The difference between tacit and overt collusion

A difficulty in the example above is that it is not clear how the “collusive price” is chosen. Imagine that, for some reason, each seller thinks that the other would set a price of 1.5\$, rather than a price of 2\$. Then, again a collusive situation might occur in equilibrium, but this time with sellers setting a price lower than the monopoly price. In other words, the collusive mechanism I have described works for many different prices and results in firms getting quite different levels of profits.<sup>6</sup>

This result raises the important issue of *coordination*. Firms that are tacitly colluding might arrive at the fully collusive price, but this is just one of the many possible equilibrium outcomes (one of these also being the competitive outcome, i.e., the one-shot game equilibrium price). So, is there an outcome that is more likely than the other? And, since firms have an interest in coordinating on an outcome with the highest possible profits, how can they achieve that outcome? Under *tacit collusion*, it is difficult for the firms to solve the coordination problem. If firms cannot communicate with each other, they can make mistakes, and select a price (or a quantity) which is not jointly optimal for the firms, and which might be difficult to change. Using the market to signal intentions to coordinate on a different price might be very costly. If a firm believes the “right” price for the industry is higher and increases its own price to signal it, it will lose market share in the adjustment period. If a firm decreases its own price to try and coordinate on a lower equilibrium price, this move might be understood as a deviation and trigger a costly price war. Therefore, experimenting with price changes to coordinate on another collusive equilibrium might be too costly.

Under *explicit collusion*, instead, firms can talk to each other and coordinate on their jointly preferred equilibrium without having to experiment with the market, which is costly. Furthermore, if there are some shocks which modify market conditions, communication will allow the firms to change to a new collusive price without the risk of triggering a period of punishment.

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<sup>6</sup>The ‘folk theorem’ (Friedman, 1971) says that in games with infinite horizon if the discount factor is large enough, firms can have any profit between zero and the fully collusive profit at the “collusive” equilibrium.

Suppose for instance that, in the example above, one seller knows that demand for pears has decreased, so that he thinks the optimal price is now lower, say 1.8\$. Absent communication with the other vendor, our seller faces a problem: if he reduces the price to 1.8\$, as new market conditions suggest, collusion might break. Indeed, the rival vendor might have a different perception of market demand, and/or misinterpret the new low price as a “deviation”, and start a price war as a punishment. However, if he sticks instead to the usual price of 2\$, he will make lower profits, because demand is lower.

Explicit collusion avoids this problem: our vendor could simply tell his rival that he thinks it would be better to decrease the price, and communication will allow them to decide on a new price that suits them both, without risking any price war or a lengthy adjustment period.

Market allocation (or market-sharing) schemes - according to which a firm sells in a certain region (or serves customers of a certain type), whereas the rivals sell in other regions (or serve customers of a different type) - whether achieved by explicit collusion or historical accidents, have the advantage of allowing for prices to adjust to new demand or cost conditions without triggering possible price wars. A market allocation scheme avoids the possibility that, if a shock reduces production costs or market demand, a price reduction might trigger a price war. As long as each firm does not serve segments of demand (explicitly or tacitly) allocated to rivals, prices can change without the collusive outcome being disrupted. This probably explains why such collusive schemes are often used.<sup>7</sup>

I shall come back to the issues of communication and coordination among firms, and on why competition policy should focus on explicit collusive practices (that is, when some communication and coordination exists) in Section 3. Before doing that, however, I would like to conclude this part on the economics of collusion by briefly discussing the practices which facilitate collusion.

### 2.3 Factors that facilitate collusion

The analysis of collusion in modern industrial economics is based on the so-called *incentive constraint* for collusion: each firm compares the immediate gain it makes from a deviation with the profit it gives up in the future, when rivals react. Only if the former is lower than the latter will the firm choose the collusive strategy. In general, collusion is more likely to arise the lower the profit that a firm would obtain from deviating, the lower the expected profits it would make once the punishment starts, the more weight firms attach to the future (i.e., when the “loss from deviation” occurs).

A large part of the literature on collusion studies the factors which foster collusive outcomes, by relying on the framework just delineated (that is, the condition that says that a firm is better off colluding than deviating): if a given factor relaxes the incentive constraints of the firms, then it facilitates collusion;

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<sup>7</sup>Market allocation schemes are particularly frequent in the EU, as we shall see below: in many cartel cases, firms have simply divided the European markets along the national borders.

if it makes it more binding, it hinders it; if the effect is ambiguous, then the factor does not have a clear impact on collusion.

The study of facilitating factors is important for two reasons. First, it allows to identify the practices that facilitate collusion so that anti-trust authorities can intervene so as to eliminate them whenever possible. Second, in merger analysis, it allows to evaluate whether a particular industry is prone to a collusive outcome or no, and therefore it gives indications as to whether a given merger should be prohibited or not. For the purpose of this paper, however, since we are interested on how to act against cartels, we can restrict attention only to those facilitating factors that can be controlled by the firms themselves, and we do not need to dwell upon *structural* facilitating factors that are exogenous to the firms, and which therefore are less relevant for detection and deterrence of cartels.<sup>8</sup>

In what follows, I first (in Section 2.3.1) emphasise the role played by agreements to exchange information about past and current individual data; such agreements allow firms to improve observability of prices and quantities, and therefore to *enforce* collusion. Next (in Section 2.3.2) I discuss the role of communication among firms, stressing as announcements on future actions helps firms to *coordinate* on a particular collusive outcome. Finally, I will make some brief considerations on pricing clauses that may also facilitate collusion.

### 2.3.1 Observability of firms' actions

Detection of deviations is a crucial ingredient for collusion, and Stigler (1964) argued that collusive agreements would break down because of *secret* price cuts. In fact, Green and Porter (1984) show that if actual prices (or price discounts) are not observable, collusion would be more difficult to sustain, but it could still arise at equilibrium. Their important contribution can be summarised in the following way. Imagine an industry where sellers cannot observe the prices charged by rivals and where market demand levels are also unobservable. Then, a seller would not know if a lower than expected number of customers served is due to a negative shock in demand or to a price cut by a rival which has stolen some (or all) of his business. Green and Porter show that if the discount factor is high enough, there exists a set of collusive strategies that represent an equilibrium. The strategies are such that each firm sets a collusive price (which might be the price that maximises joint profits) as long as every firm faces a high level of demand. When a firm faces a low (or zero) demand, then the punishment is triggered and each firm sets the one shot equilibrium price for a finite number of periods. After this finite punishment phase, all firms revert to the collusive price.

Therefore, the model implies that collusion can be sustained at equilibrium, but unlike the standard model with perfect observability, collusive prices and profits will never be observed forever, even if no firm deviates. Indeed, the punishment is triggered whenever a low level of demand is observed, and will

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<sup>8</sup> Among such structural factors which facilitate collusion there are industry concentration, difficulty of entry, regularity and frequency of the orders, lack of buyer power, symmetry, and multi-market contacts. See Motta (2004: Sect. 4.2) for a discussion of such factors.

last for a certain number of periods, after which firms revert to the collusive prices.<sup>9</sup> The model has therefore an important implication. The observation of some periods with low prices is not sufficient to exclude that the industry is at a collusive equilibrium. Rather, price wars simply are the indispensable element of a collusive strategy when rivals' prices and market demand realisations are unobservable.<sup>10</sup>

Since observability of prices and quantities helps firms to reach the most collusive outcomes (under perfect observability, price wars that are costly for the firms would not occur), competition policy should pay special attention to practices that help firms monitor each other's behaviour. One example of such a practice is given by information exchange agreements, that is being discussed next. In section 2.3.3, I shall also address other pricing practices that increase observability of firms' actions, such as resale price maintenance and best price clauses.

**Information exchange, I: Data on past or current prices and quantities** It is often the case that via trade associations or in other ways, firms in a given industry exchange data on prices, quantities, or other variables such as capacities, customer demand, cost and so on. In the light of the discussion above, it becomes important to identify the collusive potential of such communications among firms.<sup>11</sup>

First, we have seen above that exchange of information on past prices and quantities (or of verifiable information on prices and quantities set in the current period) of each individual firm facilitates collusion, as it allows to identify deviators and better target market punishments, that become then more effective and less costly for the punishing firms.

In the absence of disaggregate information on past prices and quantities, availability of more precise estimates of aggregate (market) demand would also help, as it allows firms to see whether a decrease in individual demand is due to cheating of rivals or to a negative shock in market demand. In turn, this implies that there would be no need for punishment phases which are triggered not by deviations but by a general decrease of market demand.<sup>12</sup>

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<sup>9</sup>Playing price equal to marginal cost forever, that is an infinite punishment, would clearly be suboptimal here: since the punishment is triggered even if nobody has actually deviated, it would not make sense to condemn the industry to zero profit forever whenever a low level of demand is observed.

<sup>10</sup>On the other hand, as I discuss below, the alternance of high and low price levels is no proof either of a collusive outcome, since an industry at a non-collusive equilibrium might have lower prices under negative demand (or common input) shocks or increased capacities.

<sup>11</sup>On collusion and exchange of information between competitors, see Kühn (2001).

<sup>12</sup>Porter (1983) shows that exchange of private information about market demand reduces demand uncertainty and allows more collusive outcomes to be sustained. In a similar vein, Kandori (1992) shows that as demand uncertainty decreases, firms can attain higher collusive outcomes (and punishment phases become more severe), and Kandori and Matsushima (1998) also find that communicating information about past realisations helps collusion. Technically, the last paper differs from Green and Porter (1984), Porter (1983) and Kandori (1992) in that it assumes that firms receive private rather than public signals, so that each firm might have a different belief of what has happened in the industry (has there been a demand shock, or



Exchange of information about past (and current) prices and quantities helps firms sustain collusion, but it is possible that there might also be efficiency effects behind exchange of such data. For instance, better information about demand might allow firms to increase production in markets, times, and areas where demand is higher. The literature on information exchange has ambiguous findings.<sup>13</sup> Theoretically, it is possible in certain circumstances that exchanging information helps welfare. However, it is unlikely that firms need to exchange individual and disaggregate data in order to achieve whatever efficiency there might be. Kühn (2001) also argues that information about the industry might help firms devise incentive schemes for their personnel, based on relative productivity, but again, for such schemes to work firms do not need detailed data at a disaggregate level.<sup>14</sup>

Kühn (2001) convincingly concludes that while both types of information exchange help firms to collude, the observation of past and present quantities and prices of firms is a more effective collusive device than the exchange of private information about market demand. Further, if efficiency gains of information exchange exist, they would be reaped already with the exchange of aggregate data. This should lead competition policy to a more severe treatment of agreements concerning exchange of information about individual prices and quantities (especially the more disaggregate and the more recent). Indeed, his conclusion that communication between firms about such individual firm data should be forbidden is compelling.

### 2.3.2 Coordination issues: The role of communication

When firms repeatedly meet in the marketplace, if the discount factor is large enough, any price between marginal cost and fully collusive price might be sustained. This raises the issue of which price is likely to arise as the market outcome. Habit, history, or particular events might provide firms with a *focal point* on which to coordinate.

Consider for instance a situation where two firms are told by a regulator that their prices cannot be higher than a certain level, say 100. In this case, this price will provide a clear benchmark (the focal point) for the firms, and one can bet that 100 will be the price that they will set.<sup>15</sup>

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has somebody deviated?). Other papers that deal with collusion under imperfect monitoring and private signals are Compte (1998) and Athey and Bagwell (2001).

<sup>13</sup>The incentives for firms to exchange private information, and more importantly the welfare effects of such exchange are not robust, as they crucially depend on whether the firms compete on prices or quantities, or whether the uncertainty concerns costs or demand. See Kühn (2001) or Raith (1996).

<sup>14</sup>Some exceptions about detailed data might occur in particular sectors. In banking and insurance, for instance, markets are characterised by asymmetric information. If firms had information about clients' solvency history, this would be efficiency enhancing as it would lessen adverse selection problems and foster competition by helping customers to switch firms. See Padilla and Pagano (1999). Note, however, that although disaggregate, this is not information about prices set or quantities produced by firms.

<sup>15</sup>Schelling (1960) was the first to introduce the notion of focal points (or conventions) and show how they can help people to coordinate.

History might also provide hints. Many European markets have been protected from foreign competition for a long time, resulting in several national monopolies in many industries. Once tariff and non-tariff barriers started to fall, this created a potentially pan-European market. However, a situation where each firm stays in its own market without entering foreign ones would provide a good collusive equilibrium, which is just the continuation of something which has happened for a long time. Instead, starting to export might be considered a deviation and might trigger a retaliation in the home market, with rivals exporting in turn. Therefore, the *status quo* might be a focal point, and only when demand and technology conditions substantially change, might firms be tempted to break the current situation.<sup>16</sup>

Whatever the reason, if firms have coordinated in the past on a certain collusive price or divided markets in a certain way, it might be too risky for them to experiment so as to change it. Firms might simply update such a price more or less mechanically with inflation or when raw materials commonly used in the industry become more expensive.

If firms were colluding explicitly they would simply communicate with each other and they could achieve higher collusive prices (provided that firms are symmetric enough, they would have similar preferences over prices), and/or more efficient market sharing rules. But even if they did not overtly collude, they could still try to overcome coordination problems by transmitting information to each other, as I discuss in what follows.

**Information exchange, II: Announcements of future prices** Announcement of future prices (or production plans) might help collusion, in that it might allow firms to better coordinate on a particular equilibrium among all the possible ones.<sup>17</sup> Farrell (1987) was the first to show the role of non-binding and non-verifiable communication (known as “cheap talk”) in achieving coordination among players in games with multiple equilibria.<sup>18</sup> Since then, both theory and experimental evidence seem to indicate that announcements about price intentions might help firms to coordinate, although not under all circumstances.<sup>19</sup>

However, not all announcements about future actions should be treated in the same way. One should distinguish two different situations, according to whom the announcements are directed to: (1) “*private*” announcements directed

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<sup>16</sup>See below for a discussion of the *Soda-Ash* case, which can be interpreted as a tacit collusive outcome with history providing an easy focal point for firms.

<sup>17</sup>Unilateral announcements help players to select a jointly optimal price, on which it would otherwise be difficult to coordinate if a focal price (that is, an obvious price to be chosen) does not exist.

<sup>18</sup>Farrell (1987) analysed a game with different features from supergames. He looked at a “battle of the sexes” situation, where there are two asymmetric equilibria, as in an industry where at equilibrium only one of two firms could profitably enter, whereas if both entered they would make losses.

<sup>19</sup>See Farrell and Rabin (1996) for a non-technical discussion of the possible role of cheap talk in different games, and of the conditions one should expect it to affect equilibrium outcomes or equilibrium selection. A number of experiments have been performed on this issue, see for instance Cooper et al. (1992). See Kühn (2001) for other references on experiments on the collusive effects of information.

to competitors only (these include communication in auctions); (2) “*public*” *announcements* with commitment value to consumers.

**“*Private*” *announcements*** In the first case, announcements are directed to competitors only. To help fix ideas, think of a firm sending a fax to rivals where it is stated that from next month it intends to set a certain price. As Kühn (2001) remarks, it is hard to imagine any efficiency reason behind such announcements. Most likely, they just help rivals to coordinate on a particular collusive price, and therefore helps them collude by avoiding costly periods of price wars and price instability.

*Advance notice* of price changes, as long as it does not fully commit the firm to the price announced, might also be a tool to avoid costly experimentation with the market.<sup>20</sup> A firm might announce a price increase effective, say, in 60 days, but then revert to the current price if the other firms did not follow suit with similar announcements of price changes.<sup>21</sup> This way, firms might arrive at a commonly agreed price without incurring the risk of losing market shares or triggering price wars during the period of adjustment to the new prices.<sup>22</sup>

**“*Public*” *announcements*** In the second case, price announcements are public, and therefore seen by rival firms as well as consumers. Think for instance of a firm advertising the prices of its products in newspapers. On the one hand, it might be argued that transparency of prices still helps collusion, for the reasons indicated above. On the other hand, though, market transparency is good for consumers, as it allows them to “shop around” for the best offer. The latter positive effect is generally considered stronger than the collusive effects of the announcements. Both theoretical arguments and empirical evidence suggest that price advertising in this sense is generally beneficial and brings prices down.<sup>23</sup> Therefore, when prices are “transparent” for both consumers and firms, this should not be considered as an anti-competitive practice.

To conclude, whereas announcements directed to rivals only should be forbidden, announcements about current and future prices which carry commitment value vis-a-vis consumers should be regarded as welfare enhancing.

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<sup>20</sup>However, advance notice of *effective* price changes could be in the interest of consumers, who might want to know in advance the prices they will have to pay, and so reduce uncertainty.

<sup>21</sup>See Hay (1999) for the *Ethyl* case, where this was one of the allegedly anti-competitive prices used by the firms.

<sup>22</sup>See Borenstein (1999) for an account of the *Airline Tariff Publishers* (ATP) case in the US, example of how firms can manage to coordinate on prices through a succession of announcements which do not have commitment value with respect to consumers. See also Klemperer (2001) and Cramton and Schwartz (2001) for a discussion of how firms manage to ‘communicate’ in auctions, managing to achieve collusive bidding.

<sup>23</sup>For a survey of both the theoretical and the empirical literature on price advertising, see Fumagalli and Motta (2001).

### 2.3.3 Pricing rules and contracts

Firms might be able to write contracts and adopt pricing rules that help them sustain collusion. In what follows, I will briefly discuss some examples of such practices.

*Meeting-competition clauses* state that if the buyer receives a better price offer from *another* seller, the current seller will match that price.<sup>24</sup> In this case, the potential for collusion is high, and twofold. First, the clause works as a device to exchange information: whenever a buyer is offered a better price, it will have an incentive to report that information to the current seller. This will make firms immediately aware of a deviation from a collusive outcome in the industry, and we know that timely detection of deviations is a crucial element for collusion. Second, the clause reduces the incentives to deviate in the first place: if rivals can retain their current customers due to a meeting-competition clause, the price decrease can only attract new buyers, but cannot steal existing buyers from other firms.

Meeting-competition clauses might have efficiency explanations,<sup>25</sup> but the pro-collusive impact of meeting-competition clauses seems so strong that anti-trust agencies should probably put them under a *per se* prohibition rule.

*Resale price maintenance* (RPM) is a vertical agreement whereby a manufacturer imposes upon its retailer(s) the price at which the good should be sold in the final market. There are a number of reasons why RPM can be pro-competitive,<sup>26</sup> but RPM might also facilitate collusion among manufacturers. The intuition is clearly conveyed in the following quote:

“With a competitive retail market and stable retail cost conditions, manufacturers could assume agreed-upon retail prices by fixing their wholesale prices appropriately. In reality, however, variation over time in the costs of retailing would lead to fluctuating retail prices. If wholesale prices are not easily observed by each cartel member, cartel stability would suffer because members would have difficulty distinguishing changes in retail prices that were caused by cost changes from cheating on the cartel. RPM can enhance cartel stability by eliminating the retail price variation.”<sup>27</sup>

Jullien and Rey (2001) have recently formalised this argument, and showed that indeed RPM allows manufacturers to better identify deviations from a collusive action, as the quote above suggested, and therefore to better sustain collusion.

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<sup>24</sup>A *meet-or-release* clause gives the seller the possibility to match the price or free the customer from the contract.

<sup>25</sup>If gathering information about prices is a costly process, these clauses might speed up purchase since they insure the early buyer that it is not missing better deals. They may also introduce some price flexibility in long-term contracts, by ensuring that shocks that affect outside options are internalised in the contracts. See Salop (1986: 283-284) and Crocker and Lyon (1994).

<sup>26</sup>See Motta (2004: Chapter 6) for a discussion.

<sup>27</sup>Mathewson and Winter (1998: 65).

*Uniform delivered prices* might also facilitate price observability among rivals. Consider a situation where producers are located in different geographic areas, and serve consumers that are also spread out over the territory. In these circumstances, it might be difficult for firms to compare prices and to detect price changes, since prices vary with transportation costs. Under uniform delivered pricing, a firm would set the same price inclusive of transportation cost throughout its territory, and independent of the customers' locations. Somebody located next to a firm's plant would pay exactly the same as somebody located hundreds of kilometres away. The practice, however, would make it much easier for competitors to check the prices charged to the clients, thereby fostering collusion.<sup>28</sup>

### 3 Fighting cartels: the EU experience

In this Section, I will briefly describe cartel law in the European Union, and the way it has been enforced by the European Commission (EC), which is an administrative authority whose decisions can be appealed to the European Community Courts, i.e., the Court of First Instance (CFI) and the European Court of Justice (ECJ).<sup>29</sup>

I will first briefly describe the legal framework and the general enforcement of the law, and I will then turn to some substantial issues, such as how the EU case-law has dealt with the standards of proving collusive infringement.

#### 3.1 Legal framework

The main EU law provision on cartels is represented by article 81 of the EC Treaty,<sup>30</sup> which recites:

- (1) The following shall be prohibited as incompatible with the common market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market, and in particular those which: (a) directly or indirectly fix purchase or selling prices or any other trading conditions; (b) limit or control production, markets, technical development, or investment;

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<sup>28</sup>A similar effect is achieved by *basing point pricing*, a system whereby each producer sets the final price as the mill price at the common basing point (which might be the seat of plants of one or more firms or it might be completely arbitrary) plus transport cost from that point to the final destination. Again, this allows to increase transparency on the producers' side, in that it allows to better compare prices.

<sup>29</sup>Obviously, the discussion of how the National Competition Authorities and National Courts of the 25 Member States of the EU deal with cartels it is beyond the scope of this paper. To a large extent, however, national laws and policies follow EU law and case-law.

<sup>30</sup>Note, however, that article 81 covers both horizontal and vertical agreements; furthermore, not all horizontal agreements are cartels, and indeed article 81(3) gives conditions for agreements among competitors to be accepted.

(c) share markets or sources of supply; (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

(2) Any agreements or decisions prohibited pursuant to this Article shall be automatically void.

(3) The provisions of paragraph 1 may, however, be declared inapplicable in the case of: any agreement or category of agreements between undertakings; any decision or category of decisions by associations of undertakings; any concerted practice or category of concerted practices, which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not: (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives; (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

A full discussion of article 81 is not within the scope of this paper, but a few remarks are in point.

Firstly, one should note that the European legislator does not restrict attention to *agreements*: indeed, the reference to *concerted practices* allows the EC to possibly deal with collusive situations where firms have not explicitly agreed with each other. This term is deliberately vague enough so as to capture very different situations and institutional arrangements, including cases where firms have not explicitly agreed on, or even discussed, prices, quotas, or market-sharing: most of the discussion on the standard of proof (see below) could be rephrased as a discussion of what elements define a concerted practice.

Secondly, article 81 refers to agreements and practices that either have the effect or the *object* of distorting competition. This implies that once a cartel or a concerted practice has been identified, it is not necessary to investigate whether it has had any anti-competitive effect. If for instance firms have set up a collusive scheme to fix prices, it is completely irrelevant to EU law whether firms have been successful in their design or not: even if it was proved that firms did not manage to affect prices at all, this would not spare them a finding of infringement, nor would this conceivably have much effect on the fine they should pay (as we shall see below, fines are not calculated in proportion of actual damages to clients and consumers).

Thirdly, article 81(3) admits the possibility that some agreements among competitors may be allowed under EU competition law. However, both the Commission and the Courts have been clear that agreements to fix prices, outputs or markets will very rarely benefit of any exception: they are considered restrictive of competition by their object, and therefore it would be very hard for firms to escape a finding of infringement. In other words, cartels are (almost) *per se* prohibited. However, very restrictive agreements that contain some

perceived beneficial elements may exceptionally be authorised by the European Commission.

For instance, the Commission has granted exemptions from competition rules for so-called *crisis cartels* - namely, agreements where firms engage in reciprocal reductions in capacity and output - provided such reductions in over-capacity are permanent, favour specialisation and are implemented in such a way that they minimise the social costs of the unemployment which results from the cut-back of production (Goyder, 1993: 162-165). Here, the EC has considered that competition can be sacrificed to avoid the social costs that industry restructuring left to the market would cause.<sup>31</sup>

Another example where a restrictive agreement has been allowed because of perceived environmental gains is provided by the *CECED* decision, concerning an agreement among producers and importers of washing machines which together account for more than 95% of European sales. The agreement aims among other things at discontinuing production and imports of the least energy-efficient washing machines, which represent some 10-11% of current EC sales. The agreement removes one of the dimensions along which sellers compete, and as such it might negatively affect competition and increase prices (as a general rule, the most polluting machines are also the least expensive ones). However, the Commission considered that the agreement will benefit society in environmental terms, allowing to reduce energy consumption, and that such an objective would not have been attained without the agreement. This is because consumers do not properly take into account all the externalities involved in their purchase and consumption decisions, and firms would not give up a tool of market competition unless bound by an agreement.

A final example of the same nature is given by agreements of *shipping conferences*, which have benefited for a long time from a block exemption (at the moment of writing, the EC is to decide whether to renew the block exemption regulation or not). By virtue of this exemption, ship-owners have been able to operate as a cartel along some specific routes: according to the EC, the counterpart of the cartel should have been the establishment of stable and certain shipping services.

Apart from the aforementioned cases which are to some extent exceptional and which arguably are only partly collusive, the EC (and the European Courts) have been unambiguous towards cartels, and have consistently found them illegal since the early cases (such as the *Quinine* cartel and the *Dyestuffs* cartel, both decisions dating from 1969).

**Enforcement of cartel law** As indicated above, the EC is the main enforcer of the law against cartels in the EU. The EC's powers are established by Regulation 1/2003 (which replaces Regulation 17/1962). The EC has extensive investigatory powers, which include the possibility to conduct inspections not

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<sup>31</sup>Although crisis cartels allowed by the EC are far from being a frequent phenomenon, Goyder (2003: 153) argues that in bad periods they may have a comeback, and mentions the *Stichting Baksteen* as a recent decision (1995) where the EC has authorised an agreement in the Dutch brick industry to cut down excess capacity.

only on the firms' premises but also on the homes (and private vehicles) of the firms' managers and employees, the latter possibility not being allowed under the old Regulation 17/1962, and introduced because experience showed the EC that often compromising cartel documents have not been kept in offices but in private homes.

**Fining policy** Under EU competition law, fines can be imposed only on firms (although national laws in some European countries do allow for criminal penalties, and/or administrative sanctions to be imposed on firms' managers), and Regulation 1/2003 establishes that fines may not exceed 10 per cent of the firm's turnover (although actual fines rarely go anywhere close to such a ceiling), and that they should be fixed with regard to the gravity and the duration of the infringement of the law.

The Commission has considerable discretion in the determination of the fines: although in a January 1998 Notice it has established some criteria that it uses to fix the fines, such criteria are far from being precise and the calculation of the fine is to a large extent unpredictable (even if the EC does try to rationalise it in its decisions); further, there is no attempt to estimate the actual damages created by a cartel (or any other illegal practice) and to make the fines proportional to the damages.

In practice, it is widely believed that the Commission has toughened its stance against cartels over time, although it is not clear to what extent the fines imposed by the EC are a real deterrent for cartels.<sup>32</sup> A OECD study, for instance, estimates that only in a minor proportion of cases have the actual fines exceeded the cartel gains obtained by the firms (OECD, 2002). Given that deterrence is created by expected fines, that is the monetary fines times the probability of the cartel being uncovered and successfully prosecuted, the latter being difficult to estimate but certainly quite far from 1, it is difficult to believe that firms refrain from engaging in collusive practice because they fear the fines.

Recently, in the EU there have been some discussions about making collusion a criminal offence. If this was the case, executives found guilty of collusive agreements could be imprisoned, as in the US or in the UK. Arguably, this provides a stronger deterrent of collusion as risk averse managers would find it very dangerous to collude. However, it is unlikely that there will be sufficient support by EU Member States for a reform of competition law which introduces criminal penalties. More feasible is perhaps another way to increase the firms' expected costs from being caught colluding, which is damages to private parties (in the US, treble damages). So far, private actions have been rare in EU competition law, but there seems to be a tendency towards an increase of such actions. If this leads to important damages being recognised to clients and

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<sup>32</sup>Geradin and Henry (2005) provide a detailed study of the EC recent fining policy. Connor (2005) reviews estimates of cartel overcharges and concludes that it is unlikely that the actual fines given for cartel violations in many jurisdictions provide a sufficient deterrent for cartels, whose overcharges tend to be on average much higher than the fines (which obviously are given only to firms which are caught infringing the law).



consumers hurt by cartels, the effect will be to substantially add to the fines that firms have to pay, thereby increasing deterrence.

Even though they are arguably not yet a sufficient deterrent for cartel activities, increased fines have not been the only sign that - from the second half of the 1990s - fighting cartels has become the priority for the EC. Indeed, two other important changes which are worth stressing have occurred in the EU competition law. First, the Commission has started a process of 'Modernisation' which has led to some of its powers being given to national competition authorities and national courts, with the aim of better employing its resources and devoting them to important cases (such as cartels) rather than on minor agreements. Second, it has introduced a leniency policy which has arguably been the main novelty in the fight of cartels.

**Leniency policy** "Leniency programmes" grant total or partial immunity from fines to firms that collaborate with the authorities. They work on the principle that people who break the law might report their crimes or illegal activities if given proper incentives.<sup>33</sup> In competition law, the Antitrust Division of the Department of Justice (DOJ) in the US have been the first to introduce such a law, in 1978, granting immunity from criminal sanctions if certain conditions occurred. (In August 1993, this scheme was thoroughly redesigned by the DOJ, giving rise to a stream of firms applying for leniency and giving evidence which permitted to uncover a number of cartels.).

The EU introduced a leniency policy in 1996. It established that a fine might have been very substantially (75-100%) reduced if a company informed the European Commission before an investigation started; and substantially (50-75%) reduced if co-operation took place after an investigation had started, but before the EC had obtained sufficient grounds for initiating the procedure; in both cases, the company had to be the first to report, terminate all cartel activities and must not have been the instigator of the cartel. The fine might have been significantly (10-50%) reduced if the company cooperated with the EC in the investigations (for instance by not challenging the EC findings and allegations) without the previous conditions for more generous reduction of fines being met.

However, this policy did not give the results the EC hoped for, mainly for two reasons. First, leniency was given in a discretionary way by the EC (rather than being automatic like in the US), and firms did not know what fines they would get until the final Decision was adopted by the Commission. This clearly reduced the benefit from disclosing evidence. Second, firms did not receive immunity if an investigation had already begun.

In February 2002, the EC adopted a new leniency policy. It improves on

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<sup>33</sup>Similar schemes are routinely used in several fields other than antitrust, such as fiscal law and environmental law. In Italy, the so-called "turncoat laws" (*"leggi sui pentiti"*) have been successfully used to fight organised crime such as the mafia and terrorist organisations such as the Red Brigades. Of course, there are ethical issues involved because punishment is abandoned in exchange for deterrence of further crimes: criminals might be set free (and sometimes even rewarded) in exchange for information that allows to imprison other criminals.

the first point since it introduces transparency and certainty: complete immunity from fines is given to the firm first reporting a cartel and, upon providing evidence, the firm will receive (conditional) immunity in writing from the EC. Further, the new rules specify that any firm can apply for immunity as long as it had not coerced other firms to participate in the cartel (the previous condition, requiring a firm not to be an “instigator” of the cartel, left room for interpretation).

It also improves on the second point, since immunity is given to a firm that provides evidence that enables the EC to establish an infringement even when the EC is already in possession of enough information to launch an inspection (but not to establish an infringement).<sup>34,35</sup>

The use of leniency programmes in anti-trust has been studied first by Motta and Polo (1999, 2001).<sup>36</sup> They show that such programmes might have an important role in the prosecution of cartels provided that firms can apply for leniency *after* an investigation has started. This is because as soon as an investigation starts, a firm’s expected probability of being found guilty suddenly increases, thus modifying the balance between cost and benefit from a cartel. If given the possibility to apply for leniency, the firm might then decide to give up its participation in the cartel in exchange for a total or partial reduction of the fine.

Leniency also helps in that it saves resources of the authority: building up a convincing enough case to be defensible in courts is very costly, but the cost of this prosecution stage can be avoided or greatly reduced by leniency, since the firms would bring themselves enough evidence to the authority.

### 3.2 Standards of proof: which practices violate EU law?

In Section 2 above I have already stressed that a collusive outcome might arise without firms agreeing or communicating to coordinate their behaviour. This raises the crucial issue of whether ‘tacit’ collusion, and not only explicit collusion, represents a violation of competition law.<sup>37</sup> In what follows, we discuss how the European Commission and the Courts have dealt with this important issue.

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<sup>34</sup>A reduction of fines is granted to firms that do not fulfill the previous conditions, but provide evidence that has *significant value added* for the investigation.

<sup>35</sup>For an assessment of the EC leniency policy, see also Geradin and Henry (2005).

<sup>36</sup>See also Spagnolo (2000), Rey (2000), and Harrington (2005).

<sup>37</sup>In Motta (2004: Section 4.4) I discuss the issue more in detail. I argue there that there should be infringement of the law only when firms explicitly coordinate their behaviour. In other words, tacit collusion does not run against article 81, and evidence on market data (for instance, that prices are ‘too high’, that there is parallel behaviour and so on) can represent only complementary evidence: only hard evidence (such as minutes of agreement, faxes, recording of phone calls and meetings and so on) should constitute a proof of violation of competition law. The suggested approach is consistent with the EU practice as indicated by the discussion in the text below.

**Parallel behaviour is not per se unlawful.** Perhaps the prototypical case of 'tacit' collusion is given by a situation where firms behave in a parallel way over time, that is tend to imitate each other in their price decisions. Suppose for instance that - even without common shocks on demand or input prices - one day a seller increases prices by 10%, and that the next day a rival follows suit. Absent any other documentary evidence (such as proof that the firms have agreed on prices), does this price parallelism represent evidence that firms have infringed article 81? Or, in the terms of EU law, is this evidence that the firms have engaged in a concerted practice?<sup>38</sup>

The answer is that the Commission has been tempted to answer positively this question, but the European Court of Justice, especially in its *Wood Pulp* judgement, which is the most recent on this issue, seems to exclude this possibility.

**The Wood Pulp judgment** In 1984, the EC adopted a decision (*Wood pulp*) that found that forty wood pulp producers and three of their trade associations had infringed article 81 (then art. 85) of the Treaty by concerting on prices. In 1993 the European Court of Justice issued a judgment (*Ahlström and others v. Commission*) that annulled most of the EC decision, partly on procedural grounds and partly on substantive issues.

The Commission found an infringement of article 81 due (among other things) to parallel behaviour, which consisted of: (i) a system of quarterly price announcements; (ii) the simultaneity or quasi-simultaneity of the announcements; (iii) the fact that announced prices were identical. As the ECJ rightly argues, absent documents which *directly* establish the existence of collusion between the producers concerned, the problem was to understand whether the three elements (i), (ii), and (iii) are proof of collusion ("constitute a firm, precise and consistent body of evidence of prior concertation") or can instead be explained by normal competitive behaviour:

"In determining the probative value of those different factors, it must be noted that *parallel conduct cannot be regarded as furnishing proof of concertation unless concertation constitutes the only plausible explanation for such conduct*. It is necessary to bear in mind that, although article 85 (now article 81) of the Treaty prohibits any form of collusion which distorts competition, *it does not deprive economic operators of the right to adapt themselves intelligently to the existing and anticipated conduct of their competitors*." (*Ahlström and others v. Commission*, para. 71; emphasis added)

To establish whether parallel conduct was in this case proof of collusion, the ECJ commissioned two expert's reports, whose conclusions were devastating

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<sup>38</sup>The ECJ defines the term of 'concerted practice' in the *Sugar Cartel* judgment as follows: "The concept (...) refers to a form of coordination between undertakings which, without having been taken to the stage where an agreement properly so-called has been concluded, knowingly substitutes for the risks of competition practical co-operation between them..." ([1975] ECR 1916).

for the European Commission, in that they indicated that parallelism could well have been the result of the normal oligopolistic interdependence among competitors.

(i) The EC believed that the system of quarterly price announcements and the fact that all firms quoted prices in the same currency were practices expressly adopted by the wood pulp producers so as to increase the transparency of the market, thus rendering collusion easier. The experts found that it was the purchasers who, after World War II, demanded the introduction of that system of announcements, in order to better estimate their costs. Further, they found that the US dollar was first introduced by the North American producers during the 1960s (before the period of the alleged concerted practices), and subsequently adopted by other producers; they also found that this development was welcomed by the buyers.

(ii) According to the EC, the close succession of price announcements could only be explained by a concerted practice. However, it had another, innocent, plausible explanation according to the expert's reports. Several market features, including the existence of common agents that work for several producers, implied that information on announced prices would spread very quickly.

(iii) The third element in the EC's construction was that the prices announced by the wood pulp producers involved were the same (or very similar) although they had different production costs, different rates of capacity utilisation, different costs of transportation to a given market; and they were at an artificially high level in some years, whereas the low prices in two particular years corresponded to a punishment phase. However, the experts and the ECJ noted that same pattern of prices could also be consistent with an alternative explanation, that is competitive behaviour in an oligopolistic industry. First, the fact that (average) prices were high in some years and low in others might be explained by specific demand and supply shocks (such as the introduction first - and discontinuation later - of storage subsidy schemes by the Swedish government, the evolution of the Canadian and US market, and relative exports to European markets). Second, the experts argued that the fact that prices over the economic cycle were the same (or similar) across producers was compatible with the firms behaving independently: a competitor decides to set the same price as its rivals simply because it fears the reactions that would take place if it did not so.<sup>39</sup>

In the light of the experts' reports, the ECJ arrives at the conclusion that "*concertation is not the only plausible explanation for the parallel conduct.*" (*Ahlström and others v. Commission*, para. 126, italics added)<sup>40</sup>

<sup>39</sup>The experts referred to the kinked demand curve hypothesis, according to which there is price rigidity in the markets because a firm expects that if it increases prices the rivals will not follow and therefore will lose market shares, and that if it decreases prices the rivals will immediately follow and therefore will not benefit from the price cut. Therefore, the same price would continue to hold unless major shocks have intervened. Nowadays, we would rephrase the arguments by appealing to the tacit collusion model described in Section 2. No firm would light-heartedly want to change prices relative to its competitors, fearing that this would trigger a reaction which would be detrimental to its profits.

<sup>40</sup>This is not the only case in which the Court disagreed with the Commission about ev-

At this point, one can ask the broader question of whether one can ever find an infringement of anti-trust laws by simply looking at parallel conduct. The answer is that this is possible, but the standard of proof is (rightly) high, as one should prove that communication and/or coordination of some kind among the firms must be the *only plausible explanation* for parallelism. In another important case, *Dyestuffs*, price rises were so simultaneous that it is impossible that they had not been previously agreed upon:

“In Italy, apart from Ciba who had already ordered its Italian subsidiary to increase prices, all other producers, with the exception of ACNA, sent by telex or fax - from their headquarters, seated in places very distant from each other - instructions to their respective agents in the afternoon of 9 January: Sandoz at 17.05, Hoechst at 17.09, Bayer at 17.38, Francolor at 17.57, BASF at 18.55, Geigy at 19.45, and ICI at an undetermined time, since instructions were given by phone.” (*Dyestuffs*: 2. My translation.)

Therefore, in that case, even absent documentary evidence the Court agreed with the Commission’s finding of a concerted practice.

**Tacit market-sharing schemes?** Another example of possibly tacit collusion is given by situations where each firm limits itself to selling in one particular market. Indeed, a market outcome where two (or more) firms sell in, say, their domestic markets only may be the result of an explicit market-sharing agreement but could also be due to ‘tacit collusion’: each firm is happy to limit its sales to the domestic territory because it anticipates that if it started to sell also abroad a retaliation would follow, resulting in overall competition and the loss of the domestic monopoly.

An important case in this respect is *Soda-Ash*, which deals with an alleged concerted practice of market-allocation. (Note that the Commission decision was taken after the *Wood Pulp* Commission decision, but before the *Wood Pulp* judgement.) Soda-ash is a commodity used as a raw material in the production of glass. ICI, a British company, and Solvay, a Belgian company, are the main producers in the industry. The two firms had a long history of *explicit* market-sharing agreements (at times when cartels were not illegal), started in the 1870s and renewed immediately after the 2nd World War with a so-called ‘Page 1000’ agreement, which divided Europe (and some overseas markets) into spheres of influence: for instance, ICI was to sell in the United Kingdom and Solvay in Continental Europe.

The agreement (that the defendants indicated as being out of date since 1962) was terminated as of 31 December 1972, when the UK entered the European Community (so as to comply with the anti-trust rules of the Treaty), but as the EC said in its decision:

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idence of a concerted practice. In *Compagnie Royale Asturienne des Mines and Rhein zinc v. Commission* (Cases 29-30/83 [1984] ECR 1679), the Court finds that the reason why two suppliers refused to sell to a buyer, Schlitz, was the poor credit record of the latter, not a concerted behaviour.

“The alleged desuetude of the ‘Page 1000’ arrangement did not however manifest itself in any significant change in the commercial policy of Solvay or ICI in the soda-ash sector, either in 1962 or at any later stage. Neither ever competed with the other in their respective home markets in the Community. Similarly in overseas export markets each continued to respect the other’s sphere of influence.”  
(*Soda-Ash*: 27)

What is noticeable is that each firm admitted that it had no intention of invading the other’s home market, but simply because it feared retaliation if it had done so (*Soda-Ash*: 43-44). They therefore justified a collusive outcome as the result of independent decisions that made sense from a business viewpoint. In this case, continuing to share markets was an easy way to reach tacit collusion.

The other interesting point here is whether tacit collusion is an infringement of article 81 (ex-85). In this case, the Commission decided that it was, and that the term ‘concerted practice’ mentioned in article 81 among the prohibited practices covered also tacit collusion:

“The Commission fully accepts that there is no direct evidence of an express agreement between Solvay and ICI to continue to respect the ‘Page 1000’ cartel in practice. However, there is no need for an express agreement in order for article 85 to apply. A tacit agreement would also fall under Community competition law.” (*Soda-Ash*: 55)

The Court of First Instance annulled the Commission Decision but on procedural grounds, while being silent on the merits of the question.<sup>41</sup> Interestingly, the EC later re-adopted the decision, and the case is still pending at the Court. In the light of the Wood Pulp judgment, absent documentary evidence it would be difficult for the Commission to persuade the Court, since - in the words of the Court - article 81 *“does not deprive economic operators of the right to adapt themselves intelligently to the existing and anticipated conduct of their competitors.”*

To sum up, the EU jurisprudence requires documentary evidence for the finding of a cartel law infringement. Absent documentary evidence, proof of a concerted practice can be found from market outcomes (such as parallel behaviour) only to the extent that the coordination of competitors’ decisions is the only plausible explanation for those outcomes.

This approach based on observable elements which are verifiable in a court of law seems very sensible to me, in that it privileges legal certainty and avoid the uncertainty that would inevitably follow if firms had to constantly second-guess what would happen if they behaved independently but in a similar way to their competitors. Clearly, though, not everybody might be happy with this approach, which minimises Type I errors (the possibility to find “guilty” firms which are not), but permits Type II errors (as firms which are colluding but do not leave traces behind would not be found in violation of the law).

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<sup>41</sup>Judgement of 29 June 1995, Case T-30/91. European Court Reports 1995 Page II-01775

One may argue that such an approach is too lenient with the firms: since they know that they could reach a collusive outcome even without an explicit agreement, and that such tacit collusion is not unlawful, how could one ever believe that collusive outcomes could be successfully avoided? There are at least two answers to this concern.

First, it is true that tacit collusion *might* be sustained by firms. However, we have also seen that there are very good reasons why firms would like to communicate and/or to coordinate their actions. They might want to avoid unnecessary and costly experiments with the market and choose instead the best (for the firms) prices, or they might want to create facilitating practices and more generally an environment which improves observability of firms' actions so as to favour collusion. This will lead firms to try and communicate among themselves so as to coordinate their actions, thereby leaving traces of hard evidence behind them. Firms have known for a long time that they will be found guilty if there is any written proof of their coordination, and yet anti-trust authorities keep on uncovering such hard evidence in cartel cases.<sup>42</sup>

Second, in order to make sure that cartel violations do not persist, anti-trust authorities (and more generally governmental institutions) have also another instrument, which is to intervene so as to render the market environment less prone to collusive outcomes. A tough stance on practices that allow firms to exchange information so as to monitor each other's behaviour is an example of this approach.<sup>43</sup>

**Agreements to exchange information as a concerted practice.** According to a very authoritative commentator, "[a]n important element in establishing the existence of concerted practices is contact between the parties, which must involve intentional communication of information between them, either directly or through an intermediary" (Goyder, 2004: 75).

It is important to note that such exchanges of information which would give rise to a concerted practice do not necessarily take the form of communications on the prices that firms intend to charge, nor do they need to be part of a precise agreed-upon scheme. In the *Peroxygen* judgment (1985), for instance, the ECJ finds that the firms had engaged in a concerted practice:

"Full exchange was made of information about production, so that each knew the others' general commercial policy. It was held that these arrangements constituted a concerted practice: although the

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<sup>42</sup>Noteworthy are a stream of high profile international cartels prosecuted by both US and EU authorities in the late 1990s, among which *Citric Acid*, *Lysine*, *Vitamins*, and *Graphite Electrodes*.

<sup>43</sup>Merger control may also play an important role in that it could prevent the formation of industrial structures where collusion would be likely sustained. Further, in Motta (2004: Section 4.4) I argue that there are a number of initiatives that authorities could take in order to prevent collusion, from the careful design of public procurement auctions to the outlawing of certain business practices which foster collusion.

parties had not necessarily agreed a precise or detailed plan in advance, it was sufficient that by their mutual involvement they had departed from the basic requirement that each must determine independently the policy which it intended to adopt on the market" (Goyder, 2004: 76-7).

As emphasised in Section 2 above, the ability to observe the market decisions of competitors is a crucial ingredient to sustain collusion, and this calls for a prohibition of the exchange of sensitive commercial information among rivals. The EU jurisprudence seems entirely consistent with this approach, since the presence of exchange of information of a detailed and disaggregate nature is sufficient to a finding of concerted practice. In *Fatty acids*, three producers of oleine and stearine were fined for having set up a system to exchange information on market shares, prices, and orders.<sup>44</sup> In *VNP/Cobelpa*, Belgian and Dutch paper manufacturers exchanged - through their national trade associations - detailed data at the individual firm's level on prices, discounts, terms of supply, sales, and payments.<sup>45</sup> In *UK Agricultural Tractors*, the Commission fined seven UK producers or importers of agricultural tractors for a sophisticated agreement to exchange information on sales at a very disaggregate level, both in geographic terms (sales were broken down at such a fine level that one could even in some cases identify the buyers) and in product terms (information was provided on which type of tractor was sold). Both the CFI and ECJ upheld the Commission's decision, clearly establishing the principle that setting up a scheme to monitor each other's sales data amounts to a concerted practice.<sup>46</sup>

These judgments are important, because they indicate that it is possible to prove infringement of the law even absent documentary evidence of meetings and agreements, provided that there is enough evidence that firms have intentionally created an environment where collusion can be more easily sustained.<sup>47</sup>

Interestingly, there also seems to exist some awareness that transparency is bad when it takes place on the supply side only, whereas transparency which involves also the demand side should be positively looked at - as argued in Section 2. In *Covisint*, a decision which concerns the creation of an automotive internet marketplace (set up by agreement of six car manufacturers), the Commission dismissed objections that the agreement could have made collusion easier by making prices more transparent, and found instead that B-2-B marketplaces would have pro-competitive effects.

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<sup>44</sup>[1989] 4 CMLR 445.

<sup>45</sup>[1977] 2 CMLR D28.

<sup>46</sup>Of course, this does not mean that firms cannot exchange any statistical information. What the Commission and the Courts object to is, rightly, the exchange of very detailed and individual (pricing or sales) data.

<sup>47</sup>In the Court's language, the exchange of information allowed the firms to "replace practical co-operation for the normal risks of competition."



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