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UK Tractors, Paris luxury hotels and French mobile telephony operators:  
are all oligopoly information exchanges bad for competition?

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## Abstract

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The European Commission handed down its first decision relating to a pure information exchange in 1992 with UK Agricultural Tractor Registration Exchange. France's competition authority recently referred to that decision when it found against seven Parisian luxury hotels and three mobile telephony operators. The companies shared sales information with each other on a regular basis for several years. This paper discusses the UK Tractors case from an economic standpoint and its application to the French competition authority's recent two decisions. The author calls for a clarification in the enforcement of Article 81 of the EC Treaty between evidence of tacit collusion and evidence of static anticompetitive effects of information exchanges.

In November 2005, the Conseil de la Concurrence, France's competition authority, handed down two decisions, within days of each other, against companies that had exchanged information about their sales volumes. The most sensational of the two<sup>1</sup> – given the colossal €534 million fine – was handed down against the French mobile telephony operators Orange, SFR and Bouygues Télécom<sup>2</sup>. They were found guilty of two offenses. First, the operators exchanged information for almost six years about their monthly sales figures (new flat-fee and prepaid subscriptions, and terminations). Second, the three firms froze their market shares under an agreement covering the years 2000 and 2001. Only the first charge, for which the firms paid a €97 million fine to the French Treasury, is of interest here. This article deals with the consequences of information exchange independently of the existence of another agreement or concerted practice. Five days before that decision, the competition authority found against the Hotels Crillon, Georges V, Plaza Athénée, Ritz, Meurice and Bristol<sup>3</sup>. For many years, the five luxury hotels had exchanged information on a regular basis about their sales and results (revenues per occupied and available room). As for the first charge against the mobile telephony operators, the competition authority invoked the John Deere precedent in European law<sup>4</sup> by referring to the case known as UK Tractors<sup>6</sup>. This article examines that precedent<sup>7</sup> from an economic standpoint and its application to the mobile telephony and Paris luxury hotels cases.

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<sup>1</sup> Conseil de la concurrence. Decision No. 05-D-65 of November 30, 2005 *on practices observed in the mobile telephony sector*.

<sup>2</sup> The author of this article was involved in this case in the expert assessment performed by Microeconomix for one of the operators.

<sup>3</sup> Conseil de la concurrence. Decision No. 05-D-64 of November 25, 2005 *on practices in the Paris luxury hotel market*.

<sup>4</sup> CFI, October 27, 1994, *John Deere Ltd v. Commission*, case T-35/92.

<sup>5</sup> CJEC, May 28, 1998, *John Deere Ltd v. Commission*, case C-7/95 P.

<sup>6</sup> European Commission, February 17, 1992, *UK Agricultural Tractor Registration Exchange*, case IV/31.370 and 31.446, *OJEC L. 68* of March 13, 1992, p. 19.

<sup>7</sup> For an analysis of the UK Tractors case in terms of collusion, see Georgantzis and Sabater-Grande (2002); for an analysis in terms of static effect, see Venayre, (2004).

## I. Information exchange and collusion

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Economic theory has established firmly that information exchange between competitors, particularly concerning prices, facilitates collusion. It is a necessary ingredient in collusion for two reasons.

Firstly, information exchange makes it possible to detect a breach of an agreement and to retaliate<sup>8</sup>. Collusion, whether tacit or explicit, is unstable. Each party has an interest in defecting – i.e., in cheating – for example by secretly lowering its prices. Short-term profit is always worth pocketing unless it is wiped out by subsequent retaliation (e.g., a price war). In repeated game theory – which is a framework for the economic analysis of collusion – exchange of past information can be used to detect defection. Initially the company gains at the expense of its competitors, but in subsequent rounds, it is penalized by the other participants. Theory demonstrates that when the information is detailed and exchanged frequently, retaliation is more dissuasive. The more specific the information, the more targeted and more credible the retaliation; and the earlier defection is detected, the heavier the penalty.

Secondly, exchanges of information about future intentions are necessary in tacit collusion to agree on a common standard in terms of price, quantity and even behavior (e.g., barring access to a new entrant, halting advertising or R&D expenditure). Repeated game theory shows that multiple collusive equilibria are possible between the competitive price and the monopoly price. Without prior information, companies cannot decide which strategy to adopt. As long as this strategic uncertainty persists, collusion cannot take root.

This analytical framework, briefly summarized, underpins the test used by the Court of First Instance in the *Airtours* case<sup>9</sup> in 2002. Since that precedent, to establish that a merger carries a risk of collusion, the European Commission must show that the market is sufficiently transparent to detect defection from a common policy and that a retaliation mechanism can be devised.

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<sup>8</sup> The market is assumed to be non transparent, i.e., a market in which information about competitors' prices and volumes cannot be observed.

<sup>9</sup> TPICE, June 6, 2002, *Airtours plc v. Commission*, Case T-342/99.

## II. John Deere and collusion

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It is hard to tell whether the same framework guided the UK Tractors decision by the Court of First Instance. The case was the first time the European Commission penalized a pure information exchange, i.e. an exchange that does not underpin another agreement or concerted practice on prices, quantities or geographical division of the market. The information exchange system in place related to the sales volumes of manufacturers and importers of agricultural tractors in the UK. The information was highly detailed, and included the distributor's name, the purchaser's name and address, the tractor's serial number, the exact sales volume and the market share by model and horsepower category, at national, regional and county level<sup>10</sup>.

From an economist's viewpoint, the Commission's analysis upheld by the Court of First Instance and the European Court of Justice can be read in two ways. Some passages of the decision and judgments clearly denounce a collusive effect. The Commission suggests, for example, that "there is scope for the manufacturers [...] to lessen the intensity of competition between them by avoiding price fights which would erode their margins. By increasing the transparency in a highly concentrated market and by strengthening the cohesion between the major suppliers in that market through regular and secret contacts, it is possible to maintain a general high price level"<sup>11</sup>. The Commission also points out that exchange of information is an instrument for detection. "This market knowledge allows each member and dealer to react immediately and thus to neutralize whatever initiative any one of the members/dealers of the oligopoly would take to increase its sales. [...] Every supplier knows very well that [...] that, thanks to the transparency created by the system, any initiative on his part can be detected at once by the others"<sup>12</sup>.

The argument in other passages of the Commission's decision is guided by quite a different view. Information exchange is no longer described as a way to move from a non-collusive equilibrium to a collusive equilibrium, but rather from one non-collusive equilibrium to another non-collusive equilibrium, albeit a less beneficial one for consumers. The information exchange system no longer reduces uncertainty in relation to the choice of a common policy and detection of defection, but in

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<sup>10</sup> TPICE, 27 octobre 1994, *John Deere Ltd v. Commission*, §14 à 21.

<sup>11</sup> Commission Decision, February 17, 1992, *UK Agricultural Tractor Registration Exchange*, §52.

<sup>12</sup> Commission Decision, February 17, 1992, *UK Agricultural Tractor Registration Exchange*, §40.

relation to attacks by rivals. Without the system, manufacturers and importers of tractors “would have to compete in a market with some measure of uncertainty as to the exact place, degree and means of attack by rivals. This uncertainty is a normal competitive risk bringing about stronger competition because reaction and reduction of prices cannot be limited to the absolute minimum degree necessary to defend an established position. Uncertainty would lead the firms to compete more strongly than if they knew exactly how much of a response was necessary to meet competition. They would have to exceed a minimum response”<sup>13</sup>. In short, according to the Commission, which analyses competition here in terms of military strategy rather than microeconomics, information exchange makes the combatants less daring.

### III. Static framework and repeated games

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In economic terms, these two readings of information exchanges correspond to two distinct analytical approaches: repeated games, mentioned above, and static theory. The principle aspects of static theory are outlined below.

In static theory, exchanges of information can produce both procompetitive and anticompetitive effects. Some of the procompetitive effects are easy to guess. Benchmarking is a technique used by most companies, even in atomized sectors. From an economic standpoint, benchmarking is used to get employees to work more effectively. Before a company can encourage managers and employees to do their best, it needs to evaluate its results and performance in relative rather than absolute terms to cut out the impact of random market variables. It therefore needs to obtain information on firms operating under the same conditions, which generally includes the company’s closest rivals. Averages and other aggregate data are generally sufficient to meet this need for comparisons of performance and results. Other procompetitive effects are less obvious<sup>14</sup>. The key idea is that technology and consumer needs fluctuate constantly and randomly. By exchanging information, a

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<sup>13</sup> Commission Decision, February 17, 1992, *UK Agricultural Tractor Registration Exchange*, §43.

<sup>14</sup> For the seminal article of static literature on information exchanges, see Novshek and Sonnenschein (1982). The framework is one of Cournot competition where products are homogeneous and demand uncertain. For an extension of this literature to competition by price, see Vives (1984); to cost uncertainty, see C. Shapiro (1986); exchanges of sales information, see Jin (1984). For a review of the literature, see Venayre (2004); for an overview and the consequences for antitrust law, see Kühn and Vives (1995) and Kühn (2001).

company has better knowledge of costs and demand, which enables it to make better choices in terms of rationalizing production and planning investment. But the same information can also result in less advantageous pricing for consumers and reduce competition between firms. Several criteria determine which way the scales will tip. Economic theory focuses mainly on the competition regime (e.g., price or quantity), the nature of the information (e.g., whether it has private or common value) and the type of uncertainty (e.g., about costs or demand)<sup>15</sup>. The influence of these variables on the effects of information exchanges is illustrated in the inset.

#### IV. When UK tractors meet luxury hotels and mobile phones

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Unlike European Commission's UK Tractors decision, the finding of the Conseil de la Concurrence against the Parisian luxury hotels refers unambiguously to the mechanism of collusion. France's competition authority summed up the system of regular exchange of sales figures between the seven hotels as follows: "Given the oligopolistic nature of the market, [...] these practices altered the normal play of competition, by fostering collusive equilibrium"<sup>16</sup>. The decision mentions detecting defection more than once<sup>17</sup>. The John Deere precedent is cited on the side of the economic analysis of collusion. It is not associated with the static framework. As proof of this, the arguments relating to the UK Tractors case are framed by the explicit subheading "Information exchanges in collusive oligopolies" and by the reference to the authority's decision on an agreement on the award of a public contract<sup>18</sup>.

In the decision against the mobile telephony operators, the John Deere precedent is cited and commented, but remains in economic limbo. It is neither considered to constitute a collusion mechanism, nor associated with static anticompetitive effects. According to the Conseil de la Concurrence, the exchange of information between operators played two roles in the case at hand.

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<sup>15</sup> See the last section of this article and previous note.

<sup>16</sup> Conseil de la concurrence, press release, November 28, 2005: "entente dans le secteur de l'hôtellerie de luxe" (agreement in the luxury hotel sector).

<sup>17</sup> "Collusive equilibrium is more easily attained by firms if they have the means, as they do in the present case, to detect any unilateral deviations", Conseil de la concurrence. Decision No. 05-D-64, "palaces parisiens", § 236; see also § 233 and 234.

<sup>18</sup> Conseil de la concurrence. Decision No. 04-D-43 of September 8, 2004 on a public contract for the provision of school bus services in the city of Grasse.

First, it was the instrument for monitoring the agreement between Bouygues, Orange and SFR aimed at stabilizing market shares<sup>19</sup>. The exchange is considered harmful for consumers because it maintained an agreement that was in itself anticompetitive. With respect to this effect, the authority refers to the Aalborg decision<sup>20</sup>, which rules against exchanges of information when they underpin another anticompetitive mechanism<sup>21</sup>. Secondly, the information exchange was likely to generate an anticompetitive effect by reducing uncertainty about competitors' sales strategies. The John Deere precedent is cited with respect to this effect. Here, however, unlike its decision against the Paris luxury hotels, the Conseil de la Concurrence does not define the UK Tractors case as collusion. On the contrary, it stresses the need to distinguish between UK Tractors and the Airtours case, which does highlight the risks of tacit collusion<sup>22</sup>. It stresses that the possibility of retaliation is not required for the legal demonstration that information exchanges are anticompetitive<sup>23</sup>.

## V. Why clarify the John Deere precedent?

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Are the anticompetitive effects in the UK Tractors case static or collusive? The answer to this question is crucial for evaluating and improving tests.

In the John Deere decision, the Court of First Instance considers that “general use, as between main suppliers [...] to their sole benefit and consequently to the exclusion of the other suppliers and of consumers, of exchanges of precise information at short intervals, [...] is, on a highly concentrated oligopolistic market such as the market in question and on which competition is as a result already greatly reduced and exchange of information facilitated, likely to impair substantially the competition which exists between traders”. According to the French competition authority, the legal demonstration of the infringement of an information exchange, as defined in Article 81 of the EC Treaty, requires proof of (i) the precise, repeated and private nature of the information exchange, and

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<sup>19</sup> This is the second charge against the operators. Concerted management of market shares “was possible because the operators had, through the regular exchange of information about market shares by gross sales [...], an instrument of surveillance”. Conseil de la concurrence. Decision No.05-D-65, “téléphonie mobile”, §278.

<sup>20</sup> CJEC, January 7, 2004, *Aalborg Portland A/S v. Commission* (the “cement case”), Cases C-204/00 P, C-205/00 P, C-211/00 P, C-213/00 P, C-217/00 P and C-219/00 P.

<sup>21</sup> Conseil de la concurrence. Decision No. 05-D-65, “téléphonie mobile”, §230.

<sup>22</sup> Conseil de la concurrence. Decision No. 05-D-65, “téléphonie mobile”, §180. In response to the parties, the authority does analyze the possibilities for detection (§181) and retaliation (§182 through 186) under collusion that would have been permitted by information exchanges independently of the agreement on market shares.

of (ii) the oligopolistic nature of the market<sup>24</sup>. To establish the latter, the analytical criteria used are a small number of producers, high entry barriers and relatively stable positions<sup>25</sup>. But is that test relevant from an economic standpoint? Does it distinguish sufficiently between information exchanges that reduce the consumer surplus and those that increase it or that do not affect it?

It should first be noted that information exchanges that contribute to collusion and that are therefore harmful to consumers are poorly selected by this test. On the one hand, there is not necessarily collusion in a closed and relative stable oligopoly (e.g., the competition between Coca-Cola and PepsiCo, or between Airbus and Boeing), and on the other, collusion can occur in an open oligopoly (e.g., US movie studios). Similarly, although precise information and frequent exchanges are criteria that facilitate collusion<sup>26</sup>, these conditions are neither necessary nor sufficient from an economic standpoint. This poor selection leads competition authorities to make erroneous decisions, and consumers foot the bill.

The test that prohibits or allows information exchanges on the basis of their static effects is equally imperfect. Targeting precise and private information exchanges only allows a rough selection. It eliminates cases that in principle do not pose a problem. As mentioned above, aggregate data (e.g., averages calculated from individual performance indicators) that are published, particularly for the benefit of consumers and potential entrants, are highly likely to enhance allocative efficiency (e.g., bring down the costs of prospecting for customers and entry costs for competitors) and productive efficiency (i.e., better management of production through benchmarking). Conversely, the exchange of individual information between a closed group of companies is not a sufficient condition for a static anticompetitive effect. For example, in a Bertrand duopoly with differentiated goods where there is uncertainty about demand, the exchange of individualized sales figures is procompetitive (Jin, 1994).

In short, the John Deere test is unsatisfactory for identifying either collusive situations or information exchanges that have static anticompetitive effects. It is not a sufficiently conclusive

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<sup>23</sup> Conseil de la concurrence. Decision No. 05-D-65, “téléphonie mobile”, §164 *in fine*.

<sup>24</sup> Conseil de la concurrence. Decision No. 05-D-64, “palaces parisiens”, § 151.

<sup>25</sup> Conseil de la concurrence. Decision No. 05-D-65, “téléphonie mobile”, §164.

<sup>26</sup> The more precise the information exchanged, the easier it is to detect defection, and to organize individualized retaliation. The more frequently information is exchanged, the swifter defection is detected and therefore the lower the short-term profit, the higher the penalty and therefore the higher the long-term loss.

standard of proof of tacit collusion. It saves on administrative costs by shortening the time spent researching facts and figures, but inevitably leads to erroneous decisions. In particular, the summary analysis of the characteristics of the information exchanged and the competitive situation has the result of penalizing procompetitive information exchanges in non collusive oligopolies. This shortcoming is particularly regrettable as the state of economic knowledge today is sufficient to remedy it.

## VI. Which approach should be used?

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From an economic standpoint, analysis must use two techniques. The first equates to defining the UK Tractors case as a collusive equilibrium. It is therefore appropriate to determine whether the conditions for collusion are present. The test to use here is that proposed by the Court of First Instance in the Airtours case. If the result is positive, the information exchange is anticompetitive; it must be prohibited and the companies punished. If the result is negative, the analysis of anticompetitive effects should be continued with a static analysis. The approach to take with this second technique is modeled on the Commission's two-part investigation in the UK Tractors case (namely, examination of the characteristics of the information exchanged and analysis of the competition), but expands it in order to take account of economic theory since the early 1980s on the transparency of information and its static effects. As far as the nature of the information exchanged is concerned, a distinction should be drawn between information on prices and information on costs and demand. It is difficult to find circumstances in which closed, repeated and frequent exchanges of individual information on prices would be beneficial for consumers. By contrast, there is a justification for information exchanges that reduce uncertainty. This is the case of exchange of information on sales revenues. In some circumstances, an information exchange system enables producers to better adjust their policy to fluctuations in demand. Economic research shows that consideration should also be given to whether the information is common or private. For a given company, information exchange improves its own information but also that of its competitors. If the information exchanged is private, the company gives up an informational advantage. But if the information is common (e.g., the uncertainty relates to a sudden change in demand, which is unknown but which is the same for everyone), there is no trade-off for the company between improving its own knowledge and improving that of its competitors.

The analysis of competition also needs to be more thorough. In addition to the number of companies

and the presence of entry barriers, it is important to define the competition regime. The mechanisms at work and the consequences of the information exchange for the company and for consumers depend on whether the companies are in monopolistic competition or oligopolistic competition and, in the latter case, on whether competition relates to prices or quantities, and on whether the products are substitutes or complements.

## Conclusion

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It thus appears that the small number of summary facts used in the John Deere precedent are not sufficient to demonstrate the harmful effect for consumers, in dynamic or static terms, of an information exchange that does not underpin another agreement. From an economist's viewpoint, this precedent amounts to condemning all regular, precise information exchanges between the members of an oligopoly even though some of these can be beneficial for consumers. Therefore, the French competition authority's decision with respect to the first charge against the mobile telephony operators is likely to penalize all oligopoly information exchanges without distinction. The fine of almost €100 million is likely to dissuade many companies in concentrated sectors from using precise, regular benchmarking.

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**Inset 1 – The effects of a better adjustment of supply to the uncertainty of demand or production costs.*****In a monopoly***

Discussion of the effect of an information exchange to resolve a problem of uncertainty of demand can begin with an examination of the case of a monopoly producer that has the power to fix quantities when it is better informed about future demand. Note that the same reasoning can be followed to assess the effects of an information exchange on production costs: a better informed company has an incentive to increase production when costs are low and to reduce production when costs are high.

In the case of a strategy based on quantities produced, the monopoly fixes its output before demand is known. If there is no other information, the quantity manufactured will be independent of demand and the market price will be adjusted accordingly. With additional information about future demand, the company will produce more when demand rises and less when demand falls. Consumers benefit from the adjustment of production to demand: in periods of strong demand, the increase in production can meet higher demand at a lower price than when there is no information. Conversely, in periods of low demand, the adjustment of production will lead to a higher price than when there is no information. However, this consumer loss is much smaller than the consumer gain in periods of strong demand. Over time, the positive effects will more than offset the negative effects and consumers will derive a net benefit.

The chart below illustrates the two adjustment processes, when demand shifts from its initial state ( $a^*$ ) to a state of strong demand ( $a_H$ ) or to a state of weak demand ( $a_L$ ). A well informed producer increases output (from  $Q^*$  to  $Q_H$ ) or reduces output (from  $Q^*$  to  $Q_L$ ) to maximize its profit. The price adjusts to the new situation. In the event of a shift to strong demand, the consumer gain relative to a situation in which the producer is poorly informed and does not increase output is represented by the top shaded area. In the event of a shift to low demand, the consumer loss relative to a situation in which the producer is poorly informed and does not reduce output is represented by the bottom shaded area (which is smaller than the top shaded area for the same degree of change in production in the opposite direction).

This discussion of the positive effects for consumers of an exchange of information about demand, which leads to a better adjustment of supply, only applies to cases of quantity competition. A situation of price competition reverses the conclusion. Under a price competition regime, the company determines its price before finding out about demand, then adjusts quantities when demand is revealed. If an exchange of information improves knowledge about future demand, companies will act first on prices. Compared with a situation of limited knowledge about demand, the exchange of information about demand pushes prices up during periods of strong demand. Even if prices are lower during periods of low demand, the net result is negative for consumers.

***Quantity competition in an atomized market***

First, the size of each company is assumed to be negligible. Each company can ignore the influence of its action on the quantity produced by all firms (this is monopolistic competition). Under quantity competition and when the information exchange removes uncertainty about demand, companies will adjust the quantities produced additively, as if they operated as a monopoly. This has the same positive effect as the previous one. Consumers benefit from a better match between the quantities produced and fluctuations in demand. The effects of an exchange of information about demand are not limited to this positive additive effect. Secondary effects are generated by changes in residual demand that every company can foresee. It is therefore appropriate to assess a company' individual interest in sharing new information.

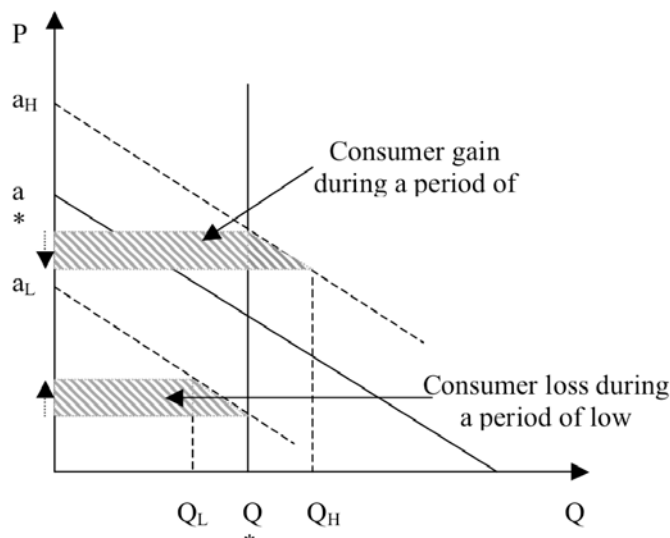
When products are homogeneous, the new information in the company's possession has the same value for other firms. If, by exchanging information, the company turns information with private value into information with common value, it risks losing an advantage that would enable it to better adjust output (in particular, it loses sales and commands a lower price in the event of higher demand). This beneficial effect for the company may prompt it to refuse to exchange the information with the other companies, which are likely to possess similar private information.

Conversely, when products are differentiated and one company receives information with private value about demand for its product, if there is no information exchange, it is likely to consider that the other companies have received similar information (to produce more or less), but it may be mistaken. Exchanging information about demand for differentiated products makes it possible to correct individual mistakes: the loss in the value of the information exchanged by a company on a part of the market that it knows well can be offset by an increase in information about parts of the market that it knows less well. In that case, companies have an interest in exchanging information about demand, so as to better adjust their supply to fluctuations in demand, which also benefits consumers (Novshek and Thomas 1998).

*Oligopolistic quantity competition*

In industries that consist of a small number of companies, each company knows that its decisions have an impact on competitors. The companies are linked by strategic interactions. Each company makes decisions based not only on information it holds about demand, but on conjectures about rivals' strategies. It therefore makes suppositions about the value of the information it possesses and the value of the information that its rivals might possess. Discussion of the benefits of an information exchange to better adjust supply to uncertain demand is the same in qualitative terms. However, information exchanges can also facilitate collusion, which is extremely harmful for consumers.

Effect on consumer surplus of better information about demand



Source: Kühn and Vives (1995).