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ROUNDTABLE ON PROSECUTING CARTELS WITHOUT DIRECT EVIDENCE OF AGREEMENT

(Background Note by the Secretariat)

-- Session II --

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TABLE OF CONTENTS

PROSECUTING CARTELS WITHOUT DIRECT EVIDENCE OF AGREEMENT

Background Note

By the Secretariat

> *Circumstantial evidence is of no less value than direct evidence for it is the general rule that the law makes no distinction between direct and circumstantial evidence but simply requires that before convicting a defendant the jury must be satisfied of the defendant's guilt beyond a reasonable doubt from all of the evidence in the case.*
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> *In order to prove the conspiracy, it is not necessary for the government to present proof of verbal or written agreements. Very often in cases like this, such evidence is not available. You may find that the required agreement or conspiracy existed from the course of dealing between or among the individuals through the words they exchanged or from their acts alone.*

1. The above quotations, taken from the jury instructions in the recent successful criminal prosecution of the Chairman of the Sotheby's auction house,[1] illustrates that cartel conspirators can be prosecuted, even against the highest standards of proof, without direct evidence of the agreement or of their involvement in it. Indirect (circumstantial) evidence is used in most jurisdictions including those with the longest and most successful records of cartel prosecutions, where competition law enforcers now enjoy the virtuous circle of strong sanctions in past cases energizing leniency programs, which generate direct evidence in new cases, and more strong sanctions.[2] Indirect evidence is particularly important for competition law enforcers in jurisdictions without such enforcement records, given that cartel conspiracies are cloaked in secrecy and direct evidence is not forthcoming.

2. The focus of this paper is on the use of indirect evidence in cartel investigations, typically triggered by an episode of suspicious parallel pricing or other behaviour that is not readily explained by usual market forces. When the competition agency suspects that the conduct is the result of an agreement but cannot discover direct evidence to prove the existence of an agreement, what amount and quality of circumstantial evidence is sufficient for this purpose?

3. The key points for the reader to take from the paper are:

- The provisions of competition laws prohibiting anticompetitive agreements apply not only to explicit agreements but also to other types of joint arrangements, variously identified as "arrangements," "combinations" or "concerted practices." In all cases, however, liability for a competition law violation can be imposed only if it can be shown that the parties reached some "conscious commitment to a common scheme."

- Cartels pose a special problem for enforcers because they operate in secret, and their members usually do not co-operate with investigations of their conduct. In experienced jurisdictions, competition authorities in most cases use direct evidence to prove an unlawful

1. Available on the web site of the American Bar Association, at http://www.abanet.org/antitrust/committees/criminal/taubman.doc.

2. It should be noted that the United States, well along on the virtuous circle, would not normally bring a criminal cartel case on indirect evidence alone. Even in the Sotheby's case, there was direct evidence of the agreement, and there was some direct evidence linking Sotheby's Chairman to it. Much of the evidence against him, however, was circumstantial.

conspiracy. It can be difficult to obtain direct evidence of a cartel agreement, however. Enforcers may be faced with the task of proving the existence of a cartel agreement without the benefit of direct evidence.

- Circumstantial evidence can come in several forms, including evidence of communications between rivals and economic evidence. Economic evidence consists of firm conduct, market structure, and evidence of facilitating practices. All types of evidence can be useful in a case and they should be employed together.

- Economic theories of oligopoly provide several valuable insights for competition law enforcers: They show that acts consistent with unilateral incentives can lead to a different outcome than when firms act collectively, and that oligopoly does not inevitably lead to cooperation and collective action to increase prices. As a result, enforcers and decision makers should carefully examine whether firm conduct can be described as actions in unilateral self-interest absent an agreement to act jointly, or as actions in the collective interest of all competitors. Conduct consistent with unilateral self interest does not constitute good evidence in a circumstantial cartel case.

- Consistent with economic theory, a long line of case law has recognised that evidence of parallel conduct, such as simultaneous price increases by rivals, alone it is not sufficient proof of a cartel agreement. There must be additional evidence, which tends to prove the existence of an unlawful agreement as required under the applicable standards of proof. Courts sometimes refer to this additional evidence as "plus factors."

- An important type of plus factor is evidence showing that there were communications among the suspected cartel operators in the course of which they could have reached agreement. Economic evidence is another important class of circumstantial evidence. It includes evidence both of conduct by market participants suggesting that they are acting jointly and of market structure that lends itself to collusive activity. One method of analysing economic conduct evidence is to consider whether the conduct would have been in the self interest of the actors if they had not been acting jointly.

- Circumstantial evidence should be considered in a holistic fashion. The decision maker should assess the cumulative effect of all evidence, rather than require that each item unequivocally support the hypothesis of agreement.

- Countries differ in the way that they develop evidence in cartel cases. Several factors contribute to these differences, including whether cartels are prosecuted administratively, civilly or criminally; and whether a country has been prosecuting cartels for a long time or has begun an anti-cartel programme only recently. There is a trend in OECD countries toward building cases based on direct evidence. But countries continue to bring cases employing mostly circumstantial evidence where it is appropriate.

- It is likely that countries just beginning an anti-cartel programme will have some difficulty generating direct evidence, and hence will have to rely more on circumstantial evidence in early cases. While these cases can be difficult, it is important that the new agency establish credibility for its competition law and for its anti-cartel effort.

1. Cartel agreements

4. All competition laws prohibit, among other things, anticompetitive conduct by two or more parties acting jointly. Competition laws are written broadly to apply to all forms of agreements, formal and informal, explicit and implicit. Thus, for example, the United States' Sherman act applies to any "contract, combination . . . or conspiracy;"[3] Article 81(1) of the EC Treaty applies to "agreements between undertakings, decisions by associations of undertakings, and concerted practices;" Mexico's competition law applies to "contracts, agreements, arrangements, or combinations;"[4] Chinese Taipei's competition law applies to "concerted actions," which is defined as including any "contract, agreement or any other form of mutual understanding;"[5] and Tanzania's law applies to "any agreement, arrangement or understanding between two or more persons, whether or not it is: (a) formal or in writing; or (b) intended to be enforceable by legal proceedings."[6]

5. As the broad statutory language suggests, unlawful agreements among competitors can take many forms. The most common in the business context is the explicit agreement, in which the parties communicate directly, either orally or in writing, specifying the relevant terms and conditions of their enterprise. But agreements do not have to be formal. They can be reached through informal means of communication, including conversations at an association meeting; public statements by senior officers; price announcements or advertisements; or communications through customers. One U.S. court famously noted: "A knowing wink can mean more than words."[7]

6. It is important, however, that in all cases competition laws will impose liability for entering into an unlawful agreement only if firms have consciously acted together, whether through formal or informal means of communication. To prove a competition law violation, it must be shown that there has been a "meeting of the minds" toward a common goal or result, or, in other words, some "conscious commitment to a common scheme."[8] Conversely, liability cannot be found where firms communicated purely in the form of market place action, or where firms communicated, but did not develop some "conscious commitment to a common scheme."[9]

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3. Sherman Act § 1.

4. Article 9.

5. Articles 7 and 14.

6. Articles 2 and 8.

7. Esco Corp. v. United States, 340 F.2d 1000, 1007 (9th Cir. 1965).

8.. The reader should be careful, though, and not put too much emphasis on these definitions. As other observers have noted, trying to come up with common definitions of "agreement" is not a useful exercise in cases where circumstantial evidence is used to identify a cartel. It is better to describe agreement in terms of what courts in circumstantial evidence cases actually require in terms of firm behavior that supports the inference of agreement. *See, e.g.*, Jonathan B. Baker, *Identifying Horizontal Price Fixing in the Electronic Market Place*, 65 Antitrust L. J. 41 (1996) (arguing that this approach emphasizes the (forbidden) process of reaching supracompetitive market outcomes, rather than the outcome itself, which in turn ensures that remedies focus on forbidden acts that can be enjoined.).

9. In a recent article Greg Werden notes the confusion in terminology that is employed in this field. The terms "express," "explicit," "tacit" and "co-ordinated" are often found, but users do not always ascribe the same meaning to them. For example, the term "tacit collusion" has been used to describe an alleged cartel agreement for which only indirect evidence is available, but also to describe cases of parallel, interdependent conduct that does not amount to an unlawful conspiracy. Werden uses the term "spoken agreement" to refer to an unlawful conspiracy. Gregory J. Werden, *Economic Evidence on the Existence of*

7. Proving the existence of a cartel agreement, whether formal or informal, poses special problems for the competition law enforcer. Cartels are usually formed and conducted in secret; their participants understand that their conduct is unlawful, and that their customers would object to the conduct if they knew about it, and so they take pains to conceal it. If an investigation into their conduct is undertaken, the participants usually do not co-operate with it, except through a leniency programme. Obtaining *direct* evidence of a cartel agreement -- evidence that identifies a meeting or communication between the subjects and describes the substance of their agreement -- requires special investigative tools and techniques, which the authority may lack.[10] Thus, the competition law enforcer may be faced with the task of proving the existence of a cartel agreement without the benefit of direct evidence. The following section discusses which types of evidence a competition enforcer might be able to use to prove the existence of a cartel, focusing on various types of indirect evidence.

2. Available evidence for proving a cartel agreement

2.1 Categories of evidence

8. Evidence used to prove a cartel agreement can be classified into two types: direct and circumstantial. Circumstantial evidence, in turn, consists of "communication" evidence and economic evidence, which include firm conduct, market structure, and evidence of facilitating practices.

9. Common types of *direct evidence* include:

- A document or documents (including email messages) essentially embodying the agreement, or parts of it, and identifying the parties to it.
- Oral or written statements by co-operative cartel participants describing the operation of the cartel and their participation in it.

10. There are different types of *circumstantial* evidence. One is evidence that cartel operators met or otherwise communicated, but does not describe the substance of their communications. It might be called “communication” evidence for purposes of this discussion. It includes:

- records of telephone conversations between competitors (but not their substance), or of travel to a common destination or of participation in a meeting, for example during a trade conference.
- other evidence that the parties communicated about the subject – e.g., minutes or notes of a meeting showing that prices, demand or capacity utilisation were discussed; internal documents evidencing knowledge or understanding of a competitor’s pricing strategy, such as an awareness of a future price increase by a rival.

11. A broader category of circumstantial evidence is often called *“economic”* evidence. Economic evidence identifies primarily firm conduct that suggests that an agreement was reached, but also conduct of the industry as a whole, elements of market structure which suggest that secret price fixing was feasible, and certain practices that can be used to sustain a cartel agreement.

Collusion: Reconciling Antitrust Law with Oligopoly Theory, 71 Antitrust L. J. 719, 735-36 (2004). This paper will generally use the terms "agreement" or "cartel agreement" to refer to an unlawful conspiracy.

10. The secret video tapes generated in the *Lysine* investigation certainly qualify; they continue to represent the gold standard in cartel evidence. Unfortunately, obtaining such “real time” evidence of agreement is usually not possible.

12. *Conduct evidence* is the single most important type of economic evidence. As noted earlier, observation of certain, suspicious conduct frequently triggers an investigation of a possible cartel. And as the section on economics highlights,[11] careful analysis of the conduct of parties is important to identify behaviour that can be characterised as contrary to the parties' unilateral self-interest and therefore supports the inference of an agreement. Conduct evidence includes, first and foremost:

- parallel pricing – changes in prices by rivals that are identical, or nearly so, and simultaneous, or nearly so. It includes other forms of parallel conduct, such as capacity reductions, adoption of standardised terms of sale, and suspicious bidding patterns, e.g., a predictable rotation of winning bidders.

13. Industry performance could also be described as conduct evidence. It includes:

- abnormally high profits;
- stable market shares;[12]
- a history of competition law violations.

14. Evidence related to *market structure* can be used primarily to make the finding of a cartel agreement more plausible, even though market structure factors do not prove the existence of such an agreement. Relevant economic evidence relating to market structure includes:

- high concentration;
- low concentration on the opposite side of the market;
- high barriers to entry;
- high degree of vertical integration;
- standardised or homogeneous product.

15. The evidentiary value of structural evidence can be limited, however. There can be highly concentrated industries selling homogeneous products in which all parties compete. Conversely, the absence of such evidence cannot be used to show that a cartel did not exist. Cartels are known to have existed in industries with numerous competitors and differentiated products.[13]

16. A specific kind of economic conduct evidence is "*facilitating practices*" – practices that can make it easier for competitors to reach or sustain an agreement. It is important to note that conduct described as facilitating practices is not necessarily unlawful.[14] But where a competition authority has

11. *See infra*, at 11.

12. Market shares, of course, are also an element of market structure. Stable market shares are classified as conduct for purposes of this discussion because they could be the result of a conscious agreement among competitors not to compete.

13. Consider, for example, the French case against the mobile phone operators, discussed *infra* at 24. The market was concentrated, but mobile phone services would normally not be considered a homogenous product.

14. Sometimes, however, and depending on the circumstances, facilitating practices have been condemned in their own right as competition law violations, without the need for showing an underlying anticompetitive

found other circumstantial evidence pointing to the existence of a cartel agreement, the existence of facilitating practices can be an important complement. They can explain what kind of arrangements the parties set up to facilitate the formation of a cartel agreement, monitoring, detection of defection, and/or punishment, thus supporting the "collusion story" put together by the competition law enforcer. Facilitating practices include:

- information exchanges;[15]
- price signalling;[16]
- freight equalisation;[17]
- price protection and most favoured nation policies;[18] and
- unnecessarily restrictive product standards.[19]

2.2 A brief example

17. Consider the following brief description of a recent Italian cartel case. It illustrates nicely how a competition authority can combine a range of different types of evidence into a persuasive story of collusion.

2.2.1 Italy – Baby Milk[20]

18. In October, 2005 the Italian Competition Authority announced that it had fined seven sellers of baby milk, comprising three legal entities, a total of €9,743,000 for engaging in a cartel in violation of Article 81 of the EC Treaty. The Italian Government had noted during the period 2000-2004 that these firms had engaged in parallel pricing of their products, and that their prices in Italy were significantly higher – between 150% and 300% – than prices in other European countries. The Authority developed

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agreement. See, e.g., Donald S. Clark, *Price-Fixing Without Collusion: An Antitrust Analysis of Facilitating Practices After Ethyl Corp.*, 1983 Wisconsin Law Review 887.

15. Problematic *information exchanges* include those containing information about current prices, costs, business plans, capacity utilisation, or other nonpublic, business sensitive information. The use of this information in facilitating a cartel is obvious – it aids both in setting the terms of agreement and in monitoring compliance with it.

16. *Price signaling* is a form of information exchange, usually conducted by means of public announcements of future prices or pricing policy. This information obviously can assist rivals in reaching agreement.

17. *Freight equalisation* schemes, whereby products are sold on a delivered basis (freight is absorbed by the seller), or by using a "basing point" system in which freight is charged by all sellers as though their products were shipped from a single location, eliminate a variable component of prices, making it easier for rivals to define the cartel price and to monitor it.

18. *Price protection (meeting competition) and most favoured nation* clauses, whereby buyers are guaranteed the lowest price offered either by a seller's rivals (price protection) or by a seller to other buyers (MFN), are by no means always anticompetitive, but in the right circumstances they can serve as enforcement or punishment mechanisms in a cartel agreement.

19. Agreement on unnecessarily *restrictive product standards* operates to exclude new entry, which could destabilise a cartel.

20. *See* the press announcement of the case on the Competition Authority's website, at http://www.agcm.it/eng/index.htm.

evidence of contacts between the firms, both direct and indirect, that supported a finding of concerted action. Direct contacts included participation in special meetings at the headquarters of the manufacturers' Association, following a request by the Health Minister to reduce prices. The evidence showed that there was open discussion among the manufacturers regarding their response to the Minister's request, and that they agreed not to reduce prices by more than 10%.

19. Indirect contacts occurred as the respondents established recommended resale prices for pharmacies, which were the principal retail outlet for their product. Special characteristics of the market made it possible for sellers to compute their rivals' wholesale prices by reference to their recommended resale prices.

20. The Authority noted that since it began its case in 2004, prices of baby milk had declined by 25% and there had been other procompetitive developments in the market, including more advertising and consumer information, the introduction of new products and a greater presence of the respondents' products in supermarket chains.

21. Here is a list of the types of evidence apparently uncovered by the authority:

- direct evidence: the producers apparently agreed on a maximum price reduction;
- communication evidence: the producers had met at the trade association and discussed prices, although with the exception of the maximum price reduction there was no direct evidence that they had reached an agreement;
- conduct evidence: parallel pricing; steep price reductions and increased competition following the investigations which suggested that earlier high prices were not the result of competitive behaviour;
- conduct of the entire industry: across the board, the prices were significantly higher than in other European countries;
- market structure evidence: this was a highly concentrated industry with only three independent suppliers, and they sold a relatively homogenous product; and
- facilitating practices: recommended resale prices for pharmacies with significant price transparency, sales occurred predominantly through pharmacies which eliminated outlets such as grocery stores that likely would have used discount prices.

2.2.2 Some General Comments about Evidence

22. There are a few general points to be made about these categories of evidence. First, there is not necessarily a bright line between direct and circumstantial evidence, especially when considering various forms of communication evidence. Second, all types of evidence – direct and circumstantial – are helpful to the competition law enforcer. They can be, and often are, used together. And third, quality matters. Direct evidence in the form of testimony from a single, unconvincing witness is less credible than strong and cumulative circumstantial evidence.

23. There is a broad range of conduct and other factors that enforcers and courts have considered relevant in circumstantial cases against cartels. Decisions have typically identified how much evidence is

the critical mass of evidence for a successful case.[21] This makes the task of the competition enforcer more difficult and outcomes of cases less predictable, but appears to be the inevitable result of the fact specific nature of each case. However, a closer analysis of cases and economic theory suggest that two types of circumstantial evidence are most important, including whether the parties communicated or at least had the opportunity to communicate and an analysis of whether firm conduct was in the firm's best unilateral self interest, absent an agreement to act collectively.[22]

24. Circumstantial evidence typically is ambiguous; often it is subject to more than one interpretation. For example, certain parallel conduct may also be consistent with independent action; a meeting of parties and communications during the meeting may have had benign purposes. The principal task of the competition law enforcer when it has only circumstantial evidence is to carefully examine whether the conduct under investigation is simply the result of independent action by market participants, each acting according to its own judgment as to its best interests. When it has come to the conclusion that this was not the case, it must convince the decision maker that the evidence proves the existence of an unlawful agreement under the relevant evidentiary standards. Economics has an important role in informing the decision maker as to how to make that judgment.

3. Economic reasoning can help identify probative indirect evidence

25. Using economic evidence to indirectly prove the existence of a cartel agreement raises a fundamental problem: how to distinguish conduct which is likely due to an unlawful agreement from conduct which arises "innocently" as the product of independent decision-making in a concentrated industry. To make that distinction, some background in economics is necessary. This section briefly describes how economic theory may help to better understand the behaviour of firms that seem to be operating as if they had formed a cartel. The section first explains economic theories that can be used to describe firm behaviour. It then discusses how these theories can help to identify "good" economic evidence that tends to support the finding of an unlawful agreement. Last, it provides some suggestions for the use of economic evidence in cartel cases based on circumstantial evidence.

26. Generally speaking, one can distinguish three broad categories of economic models that describe firm behaviour. First, firms can independently pursue their "unilateral non-cooperative best response" given what rivals are doing. In these types of models the market equilibrium is determined when each firm pursues it best response given their [its?] rivals' best response. This type of equilibrium – best responses to best responses – is typically called a Nash equilibrium. Two elementary models that use this concept to determine the market equilibrium price and output were outlined long ago.[23] Indeed, much like these very

21. *See, e.g.,* Andrew I. Gavil et al., *Antitrust Law in Perspective: Cases, Concepts, and Problems in Competition Policy* 283 (2002).

22. These two factors are discussed in greater detail below. *See infra*, at 16.

23. In 1838 Cournot proposed that firms choose their optimal output level given their rivals' outputs and 1883 Bertrand proposed instead that firms choose the optimal price given their rivals' prices. Both the Cournot and Bertrand models are examples of one shot games. In such games, participants expect that the game will last only for one period. In repeated games (for example, models associated with the Folk Theorem), the players play the one shot game repeated. Repeated games typically identify multiple equilibria and there appears to be a widely held view among economists that the actual outcomes in an oligopoly are determined by factors outside those models. Such factors can include, in particular, agreements among competitors. As a result, the usefulness of in particular infinitely repeated game models to explain firm conduct in circumstantial evidence cases has been questioned, and they are not discussed in greater detail in the text. For an analysis of this issue *see* Gregory J. Werden, *supra* note 9, at 759-765.

Whatever model the parties propose as lawful explanation of their conduct, competition authorities must check that the model's underlying assumptions are a good description of the industry in question.

old models, modern economics makes extensive use of the Nash equilibrium concept to model firm behaviour in many different types of markets.[24]

27. A second class of "models" argues that firms may at times recognize that mutual accommodation is in their best interests. Theories of this type indicate that certain actions by a firm are only profitable given an accommodating response by their rivals. And, when there is accommodation, firms' actions become "coordinated" in the sense that neither could have achieved that result without the help of the other.[25] Importantly, it should be understood that in models which feature accommodation, firms do not reach an explicit (unlawful) agreement through communication with each other, but rather come to understand what was in their mutual best interests through market place interactions.[26]

28. A third class of firm behaviour involves cartels. Here the key feature is that firms explicitly reach an agreement through direct communication with one another. The key difference between cartel behaviour and accommodation is that firms directly communicate with each other as they might in the proverbial smoke filled room or as in the US FCC spectrum auction case where firms communicated with each other through the prices they submitted.[27]

29. Notably, in cartel cases that primarily rely on circumstantial evidence there is no "silver bullet" showing that the parties reached an agreement. Thus, the authority must build a case that attempts to separate accommodating and unilateral behaviour from behaviour tending to show that rivals reached an explicit agreement. The key question is what types of circumstantial evidence tend to push aside the idea of legitimate competition and support the finding of an explicit agreement among competitors

30. In order to identify economic evidence that is of high quality and hence useful at discriminating among competing theories, the competition authority should have a good sense of the appropriate model that best describes the unilateral incentives of a firm to compete in the market that is being investigated. First, the authority must identify the set of actions that can be characterised as unilateral, non-cooperative best response behaviours in a given case. Then, and only then, can it identify actions that are inconsistent with that behaviour and thus support the hypothesis that an illegal cartel was formed. In other words, actions compatible with unilateral, non-cooperative best response behaviour serve as a benchmark to which a firm's behaviour can be compared during the period of suspicious activity.

31. The following two examples of dominant-firm price leadership and Cournot oligopoly illustrate this point. A model of dominant-firm price leadership indicates that when the dominant firm's marginal cost goes up, the optimal price charged by it and all of the firms in the market also goes up. Indeed, the price of all firms in the market changes simultaneously. In this model, there is no accommodation, let

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24. Following up on these developments, competition authorities have made extensive use of unilateral effects theories and today many legal complaints are brought primary based on a unilateral effects concern.

25. This reasoning has been the basis of numerous complaints by competition authorities in a variety of merger cases when they speak of a coordinated effects concern.

26. Certain economically minded students of antitrust policy have argued that coordinated or accommodating behaviour by firms should be treated as a violation of competition law. *See* Richard A. Posner, Antitrust Law 94 (2nd ed. 2001). The prevailing view is, however, that cases where competitors have not reached an agreement should not be held to violate competition laws as it would be difficult or next to impossible to design an appropriate remedy. *See, e.g.*, Jonathan B. Baker, *Identifying Horizontal Price Fixing in the Electronic Market Place*, 65 Antitrust L. J. 41, 48 (1996). *See also* Gregory J. Werden, *supra* note 9, at 773-77, for a discussion of Posner's view.

27. See United States v. Omnipoint Corporation, No. 1:98CV02751 (D.D.C. November 10, 1998); United States v. Mercury PCS II, L.L.C., No. 1:98CV02751 (D.D.C. November 10, 1998); United States v. 21st Century Bidding Corporation, No. 1"98CV02752 (D.D.C. November 10, 1998).

alone an explicit cartel. Instead, each firm is pursuing its unilateral, non-cooperative best response. This very elementary model, at the very least, serves as a warning that simultaneous or near simultaneous price movements can be consistent with alternative theories of behaviour and not just cartel conduct – let alone identifying the dominate firm as the cartel ringmaster. As mentioned earlier, the competition authority must check whether that model best describes the unilateral incentives of a firm to compete in the market that is being investigated. In the example discussed here, when parties submit that a dominant-firm price leadership model can explain firm behaviour under investigation as legitimate, unilateral conduct, a competition authority must examine whether the assumptions of that model appropriately describe the industry in question. The relevant questions could include, for example, whether in light of industry structure, price setting and other market conduct in the past (during non-collusive periods), the price leadership model is a good explanation for how prices are formed.

32. Similarly, the Cournot model highlights that evidence showing that prices are higher in markets where there are fewer players than in markets where there are many can be consistent with the independent, unilateral behaviour of a firm, and not only with the actions of a cartel. In fact, higher prices with fewer firms in a market is consistent with unilateral theories, accommodating behaviour and cartel actions. This type of economic evidence would not support the finding of an agreement, and therefore by itself would be of little value in a circumstantial evidence case.

33. Because it is necessary in each case to carefully identify which actions are in a firm's unilateral self-interest, the broad notion that "interdependent pricing may often produce economic consequences that are comparable to those of classic cartels" is not helpful in analyzing circumstantial evidence cases. This point is explained below.

34. The prisoner's dilemma provides a good example of how unilateral incentives lead to a different outcome than when firms act collectively.[28] For purposes of this paper, the fundamental point of the

28. The following table identifies two competitors: firm 1 and firm 2 and defines the profits that correspond to the sets of actions that are available to firm 1 and 2, respectively.

Table: Prisoner's Dilemma

		Firm 2	
		Price High	Price Low
Firm 1	Price High	10, 10	3, 15
	Price Low	15, 3	4, 4

For example, if firm 1 prices high and firm 2 prices low then firm 1 earns 3 and firm 2 earns 15. To find the Nash equilibrium and to highlight how unilateral incentives determine the Nash equilibrium let's begin in the box where both firm 1 and firm 2 are pricing high. This box indicates that both firm 1 and firm 2 each earn 10 in profits. Call these the profits that each would earn if they explicitly agreed to fix prices. In order to understand the incentives facing each firm ask what firm 1 should do if it thinks that firm 2 will price high. If firm 2 prices high then firm 1's profit can be 10 if it also prices high or 15 if instead it defects on the cartel and prices low. Because 15 is more than 10 it is in firm 1's unilateral interest to price low. Now, firm 2 knows that if firm 1 prices low that it could earn 4 if it also priced low or 3 if it continues to price high. Because 4 is more than 3, firm 2 will choose to price low as well. This is, as it turns out, is the Nash equilibrium because each firm's best response to the other firm's best response is for both to price low.

prisoner's dilemma is that unilateral incentives may lead each firm away from pricing high and earning high profits and towards lowering prices, even though each firm anticipates that the rival will cut prices as well. Conversely, matching the high price of a competitor may be in the collective interest of all competitors, but is not necessarily consistent with unilateral self interest. Thus, when analyzing circumstantial evidence, care must be taken not to conflate the two separate concepts of unilateral self-interest and collective interest of all competitors.

35. Using the insight of game theory that cooperation cannot be expected to happen spontaneously, Stigler's work on oligopoly emphasised the incentives of cartel members to defect if they believe that they can gain larger profits by cheating than by conforming to the cartel agreement.[29] Stigler identified three "problems" that cartels need to be overcome. First, they need to reach a consensus on the terms of their agreement. This task may be extremely difficult to accomplish without communication – as game theory puts it, there is an abundance of riches, too many possible decisions of market players. Second, cartels need a detection mechanism to ensure that every member follows the cartel rules. Third, a mechanism is needed to punish those who cheat, in order to deter members from defection.[30] Like the prisoner's dilemma, Stigler's model of oligopoly highlights that oligopoly does not inevitably lead to cooperation and collective action to increase prices.[31]

36. Courts have not always been careful to distinguish between actions in unilateral self-interest and those in the collective interest of all competitors and to realize that increased prices are not a necessary result of oligopoly absent collusion. A good example where a court seems to have made an error in this regard occurred in *Reserve Supply*.[32] In that case, a private action, the plaintiffs cited a series of parallel price increases during a period when demand was low. The defendant countered that it would have been "irrational to attempt to increase sales by maintaining lower prices, because lower prices would be met by their competitors, leaving no increase in market share and reduced profit levels." Finding that demand was inelastic, the court reasoned that by maintaining lower prices the defendant could have attracted only customers of the defendant's competitors. The court concluded that failing to keep prices low "does not suggest that [the defendants] 'acted in a way, that but for the hypothesis of joint action, would not have been in their interest.'" Significantly, this statement is exactly the wrong reasoning. In essence the court failed to appreciate that, depending on the circumstances, firms in the pursuit of their own interests may compete prices down from high levels in ways similar to that described by the prisoner's dilemma game.[33]

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29. George J. Stigler, *A Theory of Oligopoly*, 72 J. Pol. Econ. 44-61 (1964).

30. For a good hypothetical, using numerical examples, of the problems faced by firms considering a cartel *see* Andrew I. Gavil et al., *supra note* 21, at 228-35.

31. Stigler's description of the problems faced in the formation and operation of a cartel can provide useful guidance to a competition authority which attempts to build a cartel case using circumstantial evidence since attempts by cartel members to overcome these problems may have created an evidence trail. When seeking to establish that the companies' behaviour was not consistent with unilateral self interest, a competition authority can strengthen its "conspiracy story" if it has evidence that explains how the cartel solved the problems of formation, detection, and/or punishment. For example, the competition authority may be able to explain that certain facilitating practices were used by the cartel member to monitor their compliance with the agreement and provide for the possibility to punish defectors. The Italian baby milk case, discussed supra, at 9, provides a nice illustration of this point (facilitating practices included measures to create price transparency, and use of sales channels where price discounts were unlikely). On "facilitating practices," *see supra* at page 8 Note, however, that evidence concerning the solution of the three cartel problems will not always be available.

32. Reserve Supply Corporation v. Owens-Corning Fiberglas Corporation, 971 F. 2d 37 (7th Circuit 1992).

33. For further examples on the use of the concept of actions against unilateral self interest *see infra* at 18.

37. A classic example of an agency putting together circumstantial evidence showing that firms did not behave in accordance with their unilateral, noncooperative interest comes is *American Tobacco*.[34] In that case the court found a "record of price changes" was "circumstantial evidence of the existence of a conspiracy." On June 23, 1931 the big 3 tobacco firms in the United States all announced simultaneous price changes and no "economic justification for this raise was demonstrated." Other simultaneous price changes followed over the next several years. Precisely because of the simultaneity and because no economic justification (like higher costs) was demonstrated, the court found that this circumstantial evidence was enough to convict the defendants all on criminal charges. In contrast, if costs had increased around the times of the price increases then it would not be clear at all whether there was a conspiracy or not.

38. To summarise the discussion in this section, below are four points Werden has identified that focus attention on key issues regarding the use of economic evidence:[35]

- First, "something more than interdependence must be shown before agreement can be inferred." For example, when a competitor raises price in response to a rival raising price such activity may be fully consistent with the each firm's unilateral noncooperative best response given its rivals' responses. If we cannot condemn a firm for lowering its price in response to rivals' lowering their prices then we also cannot do so for price increases. Something more needs to be shown. (This 'extra' is further elaborated in the following text).

- Second, "the existence of an agreement cannot be inferred from actions consistent with Nash, non-cooperative equilibrium in a one shot game." Such behaviour, in fact, is fully consistent with vigorous competition and provides a useful benchmark against which suspicious activity can be gauged.

- Third, actions that are inconsistent with the one-shot Nash non-cooperative equilibrium can be used to infer the existence of an agreement, even if they may be consistent with actions taken in an infinitely repeated game model. Infinitely repeated game models do not provide a useful benchmark to identify action contrary to self interest.

- Fourth, for practical and policy considerations, the "existence of an agreement should not be inferred absent of evidence of communications of some kind among the defendants through which an agreement could have been negotiated." This kind of evidence is a useful indication that the conduct observed in the market place was the result of an unlawful agreement and thus can be an important factor to avoid enforcement action in cases of unilateral or accommodating behaviour.

4. Cases inferring an agreement from circumstantial evidence

39. Cartel cases in which there is no direct evidence of agreement often begin in a familiar way: there is an episode of suspicious parallel pricing or other behaviour that is not readily explained by usual market forces. By definition the competition agency cannot directly prove that the conduct is the result of an agreement. The question presented is, what amount and quality of circumstantial evidence is sufficient for this purpose?

34. American Tobacco Co. v. United States, 328 U.S. 781 (1946).

35. Gregory J. Werden, *supra* note 9, at 779-80.

40. Over the years, courts, competition authorities and competition experts have come to accept that "conscious parallelism," which involves nothing more than identical pricing or other parallel behaviour deriving from independent observation and reaction by rivals in the marketplace, is not unlawful.[36] As explained above, this view is well grounded in economic theory. Economic theory and case law have made it clear that something more than conscious parallelism is required. Defining that "something more" has proved difficult; courts in a few jurisdictions have wrestled with the problem for decades. One formulation, developed in the United States in civil cases (criminal cases are discussed below), requires that there exist certain "plus factors," which prove that agreement is more likely the cause of the parallel conduct than independent action. One U.S. court described the standard in a recent decision as follows:

> . . . [W]e have required that plaintiffs basing a claim of collusion on inferences from consciously parallel behaviour show that certain "plus factors" also exist. Existence of these plus factors tends to ensure that courts punish "concerted action"—an actual agreement—instead of the "unilateral, independent conduct of competitors." In other words, the factors serve as proxies for direct evidence of an agreement.[37]

41. Other jurisdictions do not use the same terminology as U.S. courts, but it seems that the analysis that they apply is similar.[38] This section will first more closely look at how decision makers have used the two factors commonly seen as the most important types of circumstantial evidence: communication or opportunity to communicate; and action against self-interest.

4.1 Communications

42. One important type of plus factor is that which indicates that the parties communicated about prices in a manner that permitted them to reach an agreement, or at least had the opportunity to communicate. The evidence falls short, however, of proving an explicit agreement. The following civil case from the United States highlights the importance of communication evidence.

4.1.1 Flat Glass[39]

43. This case, decided in 2004, is useful because the court considered allegations of price fixing in two separate markets, one for flat glass and one for automotive replacement glass. It concluded that in the former there was sufficient circumstantial evidence of price fixing to support a finding of unlawful agreement, while in the latter the evidence was insufficient.[40] In the flat glass market there had been

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36. See, e.g., 6 Phillip E. Areeda and Herbert Hovenkamp, *Fundamentals of Antitrust Law* (3d ed. 2004), ¶1433a, at 236: "The courts are nearly unanimous in saying that mere interdependent parallelism does not establish the contract, combination or conspiracy required by Sherman Act §1;" Ivo Van Bael & Jean-François Bellis, *Competition Law of the European Community* (4th ed. 2005), at 55: "Parallel behaviour between two or more undertakings as such does not constitute sufficient evidence to establish the existence of a concerted practice. The EC Treaty "does not deprive economic operators of the right to adapt themselves intelligently to the existing and anticipated conduct of their competitors." (quoting from Case 48/69, ICI v. Commission, [1972] ECR 619, para. 118).

37. In re Flat Glass Antitrust Litigation, 385 F 3d 350, 359-60 (3d Cir. 2004).

38. For discussions of the EU jurisprudence on the topic of circumstantial evidence in cartel cases, see, e.g., Mark Jephcott, *Horizontal Agreements and EU Competition Law* (2005); Sigrid Stroux, *US and EC Oligopoly Control* (2004); Lennart Ritter and David Braun, *European Competition Law: A Practitioner's Guide*, 100-110 (3d ed. 2004) ; Richard Whish, *Competition Law*, 514-16 (5th ed. 2003).

39. In re Flat Glass Litigation, *supra* note 37.

40. Most of the recent U.S. civil cases dealing with this topic have been presented to U.S. appellate courts upon appeal from a dismissal of the case by the trial court before a complete factual record had been made.

significant episodes of parallel pricing by the defendants. Several times in the relevant period they raised their list prices by identical amounts and within close time frames. The market structure was consistent with possible collusion. There was high concentration, featuring just a few sellers. The product was relatively homogeneous, where price was the most important distinguishing feature. There were high fixed costs; there was a substantial amount of excess capacity in the industry; and demand was static. The industry was, in the words of the court, "a text book example of an industry susceptible to efforts to maintain supracompetitive prices."[41]

44. There was also evidence that the price increases implemented by the defendants were not consistent with actions which would occur in a competitive market. The increases were not prompted by any change in costs or demand, and their result was to attract a new entrant. They were, concluded the court, actions "contrary to the self interest" of the defendants unless there existed a collusive agreement (that concept is discussed further below). But the court said that while this evidence was important, it was not sufficient in this case: "The most important evidence will generally be non-economic evidence 'that there was an actual, manifest agreement not to compete.' "[42] There was also ample evidence of this kind. There had been a series of meetings and communications in which prices were discussed. Internal records of the participants indicated that they typically had knowledge of one another's pricing policies that they could not have acquired by public means. The court held that in its totality the circumstantial evidence was sufficient to support the finding of an unlawful agreement.

45. In contrast, in the automotive replacement glass market the circumstantial evidence relating to communications between the defendants was much more sparse. The conduct that formed the principle basis for the allegation of price fixing was a practice by which the industry members provided certain pricing information to a third party trade association, which then published it in a form that permitted the participants to calculate one another's prices. The court found this evidence, standing alone, to be insufficient. Publication of pricing information, it noted "can have a procompetitive effect." It declined to "rest on [an] inference of collusion from this ambiguous, or even procompetitive, fact."

4.2 Economic evidence

46. Communication evidence is undeniably important – many would say critical in a circumstantial case. Certain economic evidence, however, also can play an important role in these cases. The following decision, written by the influential American jurist and scholar, Richard A. Posner, is a good example of how to analyze circumstantial economic evidence.

Under U.S. "summary judgment" procedures the court can grant judgment in advance of a full trial if the moving party can show that all necessary factual issues are settled or so one-sided they need not be tried. A different, more lenient (to the proponent) legal standard applies to summary judgment motions than to a final judgment. In these cases the appellate court is not deciding finally whether an agreement has been proved, but only whether there is sufficient evidence of agreement to permit that question to be submitted to the fact finder (judge or jury). Nevertheless, these cases are instructive on the issue of proof of agreement in horizontal cases.

41. *Id.*, at 361.

42. Ibid, quoting from an opinion by Judge Richard Posner in In re High Fructose Corn Syrup Antitrust Litig., 295 F.3d 651 (7th Cir. 2002).

4.2.1 High Fructose Corn Syrup[43]

47. The four principal manufacturers of high fructose corn syrup (HFCS), a sweetener made from corn, were alleged in a private civil damages case to have conspired to fix the price of their product during the period 1988-95. The trial court dismissed the case, but the appeals court reversed, sending the case back for trial.

48. Judge Posner succinctly classified the types of evidence relevant to proof of agreement under the Sherman Act:

> The evidence upon which a plaintiff will rely will usually be and in this case is of two types—economic evidence suggesting that the defendants were not in fact competing, and noneconomic evidence suggesting that they were not competing because they had agreed not to compete. The economic evidence will in turn generally be of two types, and is in this case: evidence that the structure of the market was such as to make secret price fixing feasible (almost any market can be cartelised if the law permits sellers to establish formal, overt mechanisms for colluding, such as exclusive sales agencies); and evidence that the market behaved in a noncompetitive manner.[44]

49. The court noted various elements of economic evidence in the case that were consistent with an agreement: high concentration on the selling side, a "highly standardised" product; a lack of close substitutes for HFCS, a significant amount of excess capacity maintained by the defendants, market-wide price discrimination.[45] The court then turned to (economic) conduct evidence that suggested an agreement. It described a change to a pricing formula that was not based on cost. It also pointed to a change in the length of contracts imposed by the defendants and to a suspicious pattern among defendants of buying and selling from one another. It also noted an unusual stability of market shares in the industry, under circumstances in which one would expect more volatility. And the court gave some credibility to expert testimony showing that the prices for HFCS were higher during the period of the alleged conspiracy than they were before or after.

50. The court also found that there was communication evidence in the record that supported such a conclusion. It consisted of documents and other statements by officers of the defendants that referred obliquely to agreements and understandings, and gave indications that they had non-public information about their rivals' pricing decisions. The court held that the evidence in its entirety was sufficient for a trier of fact to conclude that there had been agreement.

4.2.2 "Action against self interest"

51. This is a concept employed in U.S. courts in recent years. As explained in greater detail in the economics section, it is a critical step in the evaluation of economic evidence.[46]

52. An action against self interest is one that would be against the self interest of the actor in the absence of agreement. The firm would not have acted as it did if it had been acting unilaterally. An action against self interest might take the form of a refusal to deal with a customer or supplier, when there appear

43. In re High Fructose Corn Syrup Antitrust Litig., *supra* note 42.

44. *Id.*, at 655.

45. Price discrimination is not always anticompetitive, and the existence of it does not always indicate collusion. Judge Posner discusses at some length in the decision why it is relevant in this case. *Id.* at 658.

46. *See supra*, at page 11.

to be no economic reasons why the party would refuse such a business opportunity.[47] It could involve a pattern of information exchanges – cost information, for example, or information about transaction prices – that businesses normally consider to be confidential, and which rivals in a competitive market could use to their advantage. It could involve a pricing structure that bears no relation to cost, or that otherwise seems to have no market-based justification.

53. A case in which this concept was important was *Blomkest Fertilizer*.[48] It involved allegations by fertilizer manufacturers that eight potash producers, six of them Canadian, had conspired to fix the price of potash between 1987 and 1994 (potash is an important input into fertilizer). The plaintiffs' case consisted mostly of economic evidence, which included evidence of a pattern of price verifications by the defendants, a form of economic "conduct" evidence described above in Part II.

54. The case was heard by all of the eleven judges on the appeals court, a rarity in U.S. practice.[49] The eleven judges split six to five in favour of the defendants, affirming the decision of the trial court to dismiss the case The majority found the price verification evidence unpersuasive, first because it occurred only as to past transactions, and as such would have minimal implications for future pricing, and second, because in the court's words:

> The price verifications relied upon were sporadic and testimony suggests that price verifications were not always given. The fact that there were several dozen communications is not so significant considering the communications occurred over at least a seven-year period in which there would have been tens of thousands of transactions. Furthermore, one would expect companies to verify prices considering that this is an oligopolistic industry and accounts are often very large. We find the evidence falls far short of excluding the possibility of independent action.[50]

55. The minority argued persuasively that such conduct would not have been in the defendants' interest if they had not been participating in a cartel:

> . . . if there were no reciprocal agreement to share prices (and the producers certainly do not argue that there was), an individual seller who revealed to his competitors the amount of his privately negotiated discounts would have been shooting himself in the foot. On the other hand, if there were a cartel, it would be crucial for the cartel members to cooperate in telling each other about actual prices charged in order to prevent the sort of widespread discounting that would eventually sink the cartel.[51]

56. As noted above, however, this view did not prevail in the case.

57. A good illustration of use of the "action against self interest" concept to determine whether parallel conduct should be regarded as indirect evidence of an agreement is the appeals court opinion in *Brand Name Prescription Drugs*.[52] There, a class of customers brought a case against drug manufacturers alleging that their uniform practice of price-discriminating among groups of customers, as a result of which the plaintiffs were forced to pay higher prices, should be viewed as (indirect) evidence that the defendants

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47. See Petruzzi's IGA v. Darling-Deleware, 998 F.2d 1224, 1243-45 (3d Cir. 1993)

48. Blomkest Fertilzer v. Potash Corp. of Sask., 203 F. 3d 1028 (8th Cir. 2000) (en banc).

49. Most appeal cases in the U.S. Federal system are heard by a panel of only three judges, chosen at random.

50. *Id.*, at 1034-35.

51. *Id.,* at 1047.

52. *In re* Brand name Prescription Drugs Antitrust Litig., 186 F3rd 781 (7th Cir. 1999).

had entered into a cartel agreement. The court rejected the plaintiffs' argument, however. It reasoned that as each defendant drug manufacturer had market power as a result of the patent protection of its drugs, it was consistent with each manufacturer's self interest to exercise that market power and price discriminate among groups of customers, depending on their willingness to pay. The fact that all defendants had adopted similar price discrimination strategies therefore was consistent with action in each defendant's self interest and could note be viewed as evidence of an agreement among them.

4.3 Holistic v. item-by-item approaches to circumstantial evidence

58. One important issue that affects how courts evaluate circumstantial evidence is whether the court is willing to consider all evidence that is proffered as a whole, giving it cumulative effect, or whether it requires that each item unequivocally support the hypothesis of agreement. In *High Fructose Corn Syrup* Judge Posner strongly adopted the holistic approach. The trial judge in the case had refused to consider the communication evidence that was offered

> … because he thought its character was such as to "require that a substantial inference be drawn in order to have evidentiary significance." This is correct in the sense that no single piece of the [communication] evidence . . . is sufficient in itself to prove a price-fixing conspiracy. But that is not the question. The question is simply whether this evidence, considered as a whole and in combination with the economic evidence, is sufficient to defeat summary judgment.[53]

59. Judge Posner noted that a "trap" that confronts the court in these cases is to suppose that if no single item of evidence presented by the plaintiff points unequivocally to conspiracy, the evidence as a whole cannot defeat summary judgment. It is true that zero plus zero equals zero. But evidence can be susceptible of different interpretations, only one of which supports the party sponsoring it, without being wholly devoid of probative value for that party. Otherwise what need would there ever be for a trial? The question for the jury in a case such as this would simply be whether, when the evidence was considered as a whole, it was more likely that the defendants had conspired to fix prices than that they had not conspired to fix prices.[54]

60. It should be noted, however, that there are different views even within the United States. Other federal appeals courts have examined each item of circumstantial evidence independently as to whether it tended to exclude independent, unilateral action of competitors.[55]

61. It appears that in *Wood Pulp*, an important European Union case dealing with circumstantial evidence in a price fixing case, the European Court of Justice court took a similarly strict approach on this issue of evaluating individual items of evidence.

4.3.1 Wood Pulp[56]

62. The European Commission had declared that more than 40 producers of wood pulp and three associations of producers had engaged in concertation during two periods between 1975 and 1981, in which their announced prices were nearly identical. It was the practice in the industry for buyers and sellers to enter into long term contracts, which gave buyers the right to purchase a minimum quantity of wood pulp at prices no higher than announced prices. The producers announced their prices each quarter,

53. *Id*., at 661.

54. *Id*., at 655-56.

55. *See* Williamson Oil Co. v. Philip Morris USA, 346 F.3rd 1287 11th Cir. 2003).

56. Cases C-89/85 etc., Ahlstrom Oy v. Commission, [1992] ECR I-1307.

at virtually the same time. The Commission produced a substantial quantity of economic evidence, in addition to the parallel pricing conduct, in support of its decision: a large number of sellers, who differed significantly from one another in terms of national origin (they were from Finland, Sweden, Spain, Portugal, the U.S. and Canada); varying cost structures; differing freight costs; variation in national markets across the Community; announced prices significantly above spot market prices; apparent breakdowns in price discipline twice during the period; prices published in the trade press; prices announced in advance of their application; all prices quoted in U.S. dollars.

63. The Commission also adduced communication evidence supporting concertation, consisting of documents and telexes from the files of the parties showing that they had attended meetings at which prices were discussed. However, the ECJ required the Commission to link each document to concertation between specific producers and for specific periods. The Commission took the position that it need not do so, that the evidence was relevant generally to the alleged concertation. The ECJ did not accept the Commission's view, however, and excluded the documents from consideration.

64. The court then turned to whether the economic evidence alone was sufficient to establish concertation. The standard that it applied to this inquiry was whether "concertation constitutes the only plausible explanation for such conduct." It concluded that there were valid business reasons for the long term relationships and the pricing practices that had evolved in the industry. The court had employed two experts, who did not rule out concertation but who also found legitimate reasons for the conduct under consideration. The simultaneity and parallelism of announced prices could be explained by the "very high degree of transparency that existed in the market."[57]

65. The strict standard adopted by the court for evaluating the economic evidence in the case – that concertation constitutes the only plausible explanation for such conduct – may have been the principal reason for reversing the Commission decision, but it is likely that the ECJ's unwillingness to consider in a holistic fashion the communication evidence that was proffered also contributed substantially to the result. In subsequent cases decided by the Commission and EU courts, however, it does not appear that the authorities have adopted such a strict approach.[58]

66. It is inevitable under such an "itemised" approach that each item of circumstantial evidence will almost always be ambiguous if analysed in isolation. If the evidence is cumulative, on the other hand, the overall ambiguity may be ameliorated. It would seem that the better approach, as articulated by the court in *High Fructose Corn Syrup,* would be to be consider the available evidence as a whole and evaluate whether all evidence in its entirety can be sufficient under the applicable standards of proof.

5. Cartels and circumstantial evidence – the national experience

67. Circumstantial evidence is treated differently in different countries.[59] The law regarding the use of circumstantial evidence in cartel cases will undoubtedly develop according to these national norms. Other factors will also dictate how these cases evolve across countries, notably whether cartels are administrative or civil violations, or whether they are prosecuted as crimes. Further, countries are at different places in the development of their anti-cartel programmes. Some countries have been prosecuting

57. Id. at para. 81. See also, Suiker Unie v. Commission (*Sugar Cartel)*, OJ [1973] L 140/17.

58. *See, e.g.*, *PVC II*: OJ [1994] 239/14, substantially upheld on appeal, Cases T-305/94 etc., Limburgse Vinyl Maatschappij v. Commission [1999] ECR II-931 (CFI confirming that "…items of evidence should be regarded not in isolation but in their entirety […] and individual items of evidence cannot be divorced from their context"); *Plasterboard*, OJ [2005] L. 166/8.

59. Although, as suggested above, there might be differences even within one and the same country.

cartels for decades, others for only a short time. Some have highly effective leniency programs; others have only recently introduced one. The impact of these factors on prosecuting cartels with circumstantial evidence is explored further below.

5.1 Prosecuting cartels as administrative or civil violations

68. In the majority of countries cartels are prosecuted administratively or civilly (in most of these the process is administrative; that term will be employed exclusively from here on out in this section). The trend in OECD countries that treat cartels as administrative violations is toward developing direct evidence. Thus, virtually all cartel cases prosecuted by the European Commission since 2001 or so have generated direct evidence.[60] Further, the Third Report by the OECD Competition Committee on hard core cartels[61] describes several recent cartel cases originating in OECD countries and a few non-Member observer countries. Almost all of these, it seems, employed direct evidence.[62] There may be at least two reasons for this trend, and they are related: Leniency programmes, which bring a greater number of cartels to the authorities' attention and generate at least some direct evidence, are becoming ever more effective. And countries are increasingly imposing very large fines for cartel conduct. Severe sanctions make leniency programmes more effective. Independently, it is easier to justify the imposition of large fines if one has direct evidence of the violation, including, if possible, evidence of knowing, intentional wrongdoing.[63] Finally, countries have strengthened their investigatory techniques, including dawn raids.

69. There is another, important benefit from cases built on strong direct evidence: they can lead to more plea bargains and fewer appeals. In some jurisdictions, the parties in these cases usually consent to a finding of a violation and to the imposition of strong sanctions. This has significant resource implications; litigation can take a great deal of time and consume enforcement resources that could otherwise be employed in generating more cases.

70. Still, when only circumstantial evidence is available and it is strong, countries with a longer enforcement record continue to be willing to bring cases based on it. One example is the Italian *Baby Milk* case, discussed earlier. Another recent case is the French decision concerning a mobile phone operators cartel.

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60. Based upon a review of Commission press releases during the period, available on the Commission's website.

61. OECD, *Implementation of the Council Recommendation Concerning Effective Action Against Hard Core Cartels: Third Report by the Competition* Committee (2005), available on the OECD web site at www.oecd.org/competition.

62. Of course, in many of these cases there was circumstantial evidence as well. As noted above, the different types of evidence may be used together in a case.

63. For example, between 2001 and 2005 the European Commission imposed fines totaling almost €4 billion for cartel conduct in violation of Article 81. See, speech by European Commissioner Neelie Kroes before the International Forum on Competition Law, April 7, 2005, available on the European Commission website, at http://europa.eu.int/comm/competition. As noted above, all of these cases apparently were based, at least in part, on direct evidence.

5.1.1 France – Mobile Telephones[64]

71. On 1 December 2005 the Conseil de la concurrence announced that it had fined three mobile telephone providers a total of €534 million for collusive activity. There are two parts to the case. The first is a course of dealing between 1997 and 2003 by which the respondents exchanged detailed and confidential information on the numbers of new customers signed up the previous month, and the numbers of people who opted to cancel their subscriptions. This conduct was deemed to have anticompetitive effects apart from any direct effect on prices.

72. More relevant to this discussion, the Conseil also found that between 2000 and 2002 the three operators had entered into a market sharing agreement centered on stabilizing their market shares. The Conseil stated that it had

> . . . uncovered a number of pieces of serious, specific and corroborating evidence pointing to the existence of such an agreement. These included handwritten documents with explicit references to an "*agreement*" between the three operators, the "*pacification of the market*" and the "*Yalta of market share*".

73. The Conseil pointed to certain market practices that the respondents had simultaneously adopted in 2000, including "a hike in prices and the adoption of measures such as giving priority to contracts with commitments over pay-as-you-go cards, or the introduction of billing per 30-second increments after a minimum first minute." The Conseil appeared to evaluate these actions in the context of the "against self interest" standard discussed above:

> These measures . . . could clearly have led to a drop in sales (and therefore market share) for any operator who took the step of introducing them unilaterally. The collusion was therefore intended to make it easier for the operators to introduce this strategy, by enabling them to ensure that they all adopted the same policy simultaneously, and that their market shares would consequently remain stable.

5.1.2 Brazil – Steel

74. In 1999, CADE, the Brazilian competition tribunal, concluded what many considered to be the first cartel case under its current competition law, which was enacted in 1988. The case involved an alleged agreement in 1996 to increase the prices of certain flat rolled steel products. There were only three domestic producers of those products, two of which were linked by a 50% cross-ownership. In July of 1996 representatives of the Brazilian Steel Institute met with officials of Brazil's Secretariat for Economic Monitoring (SEAE) and informed them that its members intended to increase their prices on these products by certain specified amounts on a specific day. The background to this meeting is that until 1992 these products were subject to price controls, which were administered in part by SEAE. Producers were required to submit proposed price increases to SEAE. There were no such controls in 1996, however.

75. On the day after the meeting SEAE informed the Institute by fax that such an agreement was a violation of the competition law and illegal. Nevertheless, the three producers each implemented price increases on these products in early August of that year. The increases were approximately the same as those given to SEAE by the Steel Institute. They were not identical across the three companies, but in

64. The press release by the Conseil de la concurrence is available on the Conseil's website at http://www.conseil-concurrence.fr/user/standard.php?id_rub=149&id_article=501. The complete decision is available at http://www.conseil-concurrence.fr/user/avis.php?avis=05-D-65. The defendants have announced their intention to appeal the decision.

most cases they did not vary by more than .5%. About one year later the companies implemented another, similar increase, though there was no preliminary notice given to SEAE.

76. The defendants denied that they had formed an agreement. They admitted that prior to the meeting with SEAE the top executives of the firms had met, but they denied that an agreement had been reached. The Brazilian competition agencies were not able to develop direct evidence of an agreement. They were unable to question executives of the three firms directly about the matter. The agencies concluded, however, that there was sufficient circumstantial evidence of agreement. That evidence included the executives' meeting prior to the SEAE meeting, the statement of intent to increase prices at the SEAE meeting, the nearly identical, nearly simultaneous increases in August of 1996, and the lack of evidence otherwise supporting independent decisions by the steel companies to increase prices at that time. CADE concluded that the 1996 conduct was unlawful. It did not include the 1997 increase as a part of the violation, however, as there was no evidence of a meeting or communications among the firms prior to that increase.

77. The tribunal imposed the minimum fine under the law of 1% of the previous year's gross turnover of each firm, which amounted to about R$51 million (then the equivalent of about USD48 million).[65] The defendants appealed the decision and the fines, and some aspects of the case, unfortunately, are still not resolved. More recently, the Brazilian competition agencies have become more aggressive in their anti-cartel effort and have perfected their use of dawn raids and other specialised investigative techniques. They have created a leniency programme, which has generated some cases.[66]

5.1.3 Latvia – Hens' Eggs

78. This case is a good example of the use of different types of circumstantial evidence:

- communication evidence, including evidence of meetings of competitors through an industry trade association, and documents evidencing that prices were discussed at these gatherings;

- economic evidence showing an increase in prices after the relevant meetings, and evidence rebutting the claim by the respondents that their pricing was the result of market forces.

79. The case is also relevant because it occurred in the agricultural products sector, where it seems that many cartels exist in countries beginning anti-cartel enforcement.

80. In 2003 The Latvian Competition Council initiated an inquiry into possible price fixing by producers of hens' eggs upon reading in the local press an announcement by the leading producer that it intended to raise its prices. The article also stated that the Latvian Association of Egg Producers had recommended that its members raise their prices. The Competition Council then lacked mandatory inspection powers, but its investigators appeared simultaneously at the offices of three producers to conduct voluntary interviews. Later the investigators interviewed other producers.

81. The investigation developed the following evidence: There were 12 members of the Producers' Association. The Latvian market was dominated by one producer, which had a market share of 50%. Three others each had shares of 8-11%. In the interviews, the investigators were told that there had been

65. For further discussion of this case, see, Paulo Corrêa and Frederico G. de Aguier, *Circumstantial Evidence and Plus Factors in Cartel Cases*, available on the SEAE website, at http://www.fazenda.gov.br/seae/english/index_english.html.

66. See, OECD, *Competition Law and Policy in Brazil: A Peer Review*, at 50-54 (2005), available at the OECD website, at http://www.oecd.org/dataoecd/12/45/35445196.pdf.

discussions about raising prices at association meetings in two periods, July – August 2002 and March – April 2003. The investigators obtained a copy of a fax sent to association members by the dominant firm prior to a meeting in March 2003. The fax stated that the agenda of the meeting would include the topic of "price policy (the increase of prices is planned starting from April 1, 2003)." The fax also stated that the dominant firm would not respond to proposals from retailers for special low price promotions for the upcoming Easter season, and it concluded: "Therefore, in order to ensure successful trade in Easter we invite you not to support the actions of retailers of above-mentioned nature."

82. The Council also developed economic evidence in support of its case. It analysed egg prices during the relevant periods and found that prices did indeed raise after the association meetings. Moreover, it seemed that the increases could not be justified either by higher costs or by supply and demand considerations. Indeed, the producers produced a surplus of eggs during the relevant periods.

83. The Competition Council concluded that the producers had engaged in price fixing activity in violation of the Latvian competition law, and fined the respondents. The case is currently on appeal.

5.1.4 Chinese Taipei – petrol and diesel fuel

84. This case is useful because it occurred in a sector in which many countries initiate cartel investigations – retail sales of petrol. It is also notable because it contains no communication evidence – only economic evidence. The competition authority apparently employed a form of economic analysis like that discussed above in Part III, but it is not clear why the agency rejected the hypothesis of unilateral noncooperative best response – in particular the dominant-firm price leadership model.

85. At the time the investigation began in 2003, the refined petroleum sector in the Chinese Taipei market for petrol and diesel fuel was a duopoly. The leader, with a market share of 70%, had been a monopolist until the entry of another firm in 2000. A third firm, a large American company, had entered in 2002 but subsequently withdrew.

86. For two years the prices charged by these two suppliers to retail petrol stations had moved in parallel fashion. There were at least 20 instances of simultaneous and nearly identical price adjustments. In each instance, one of the parties announced new prices publicly, to take effect in the future. The other party would then react, also announcing its new prices publicly. If on occasion the second party did not follow the prices announced by the first, the initiating party would either withdraw its changes or amend them to conform to those announced by the other.

87. There was no direct evidence of agreement. The Chinese Taipei Fair Trade Commission concluded that the duopolists had reached a "meeting of the minds," however. It considered the following factors in making that judgment:

- the parallel conduct of the two parties, covering many price adjustments over a period of years;
- the fact that the price changes were announced publicly, and in advance;
- the fact that retail petrol station operators reacted quickly to the price changes by posting new prices; these announcements served as a monitoring mechanism for the two suppliers;
- an in-depth analysis of the cost structures of the two firms, showing significant differences between them in terms of sources of imports, refinery costs, transportation costs, capacity utilisation, and others.

88. The FTC also apparently employed game theory in its analysis of the conduct, concluding that the results were consistent with a form of agreement.[67]

89. The Commission concluded that the conduct constituted a violation of Chinese Taipei's Fair Trade Law, and it fined each of the two respondents NT$6,500,000 (about USD200,000).

5.2 Cartels as crimes

90. A minority – but a growing one – of countries prosecute cartels as crimes. The standard of proof in criminal cases is the highest, and this would translate into stricter standards for the use of circumstantial evidence. Still, such evidence can be used in these cases. The experience in two countries where cartel conduct is a crime is described below.

5.2.1 United States

91. The U.S. has a relatively long history in prosecuting cartels as crimes.[68] There were some early criminal cases under the Sherman Act that were built on circumstantial evidence.[69] In the past several years, however, all criminal convictions under the Sherman Act have been based on direct evidence. Since the mid-1990s, the U.S.' leniency programme has become its most important tool in its anti-cartel arsenal, and most cases result from an application under the programme. Most are also resolved without trial, on the basis of guilty pleas.

92. Of course, circumstantial evidence can also be useful and important. The *Art Auctions* case noted in the introduction above was one case in which it was. The case involved an agreement between the two leading art auction houses, Sotheby's and Christie's, fixing their commission rates. The trial involved Sotheby's Chairman, A. Alfred Taubman; the other parties had either pled guilty or were not prosecuted because they had entered the U.S.' leniency programme. There was direct evidence resulting from the leniency application proving the existence of the cartel agreement. The evidence linking Taubman to the agreement was more tenuous, however. It consisted of communication evidence, much of it written, showing that Taubman had met with his counterpart at Christie's and discussed prices, and that he had

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67. A more complete description of this case is available on the APEC website, at http://www.apeccp.org.tw/doc/Taipei/Case/D094q108.htm.

68. The Sherman Act provides for both criminal and civil sanctions, but for many years after its enactment in 1890 most of the cases brought under it were civil. Also, for many years, a Sherman Act violation was classified as a misdemeanor – a lesser crime. In the 1970s, however, the act was amended to make a violation of it a felony, and the maximum penalties were increased. There were further increases in the maximum penalties, so that today a corporation can be sentenced to pay a fine of up to $100 million (and even more, pursuant to an alternative sentencing provision in U.S. law), and a natural person can be sentenced to a jail term of up to 10 years and a fine of up to $1 million. Sentences actually imposed have kept pace with the increasing authorisations; corporations have paid fines of hundreds of millions of dollars, and individuals are regularly sentenced to jail terms of three years or more. *See*, Scott D. Hammond, "An Overview Of Recent Developments In The Antitrust Division's Criminal Enforcement Program," speech before the America Bar Ass'n, January 10, 2005, available at http://www.usdoj.gov/atr/public/speeches/207226.htm.

69. One of these was *American Tobacco*, *supra* note 34, decided in 1946. It was an appeal from a criminal conviction of three leading tobacco companies and some of their executives. Each defendant was convicted on three counts of violating the act and each was fined a total of $15,000, which was then the maximum fine. There was apparently no direct evidence of an agreement between the defendants, but as outlined in Part III above, the Supreme Court upheld the convictions on the basis of patterns of price changes, which it found to be "circumstantial evidence of the existence of a conspiracy."

supervised discussions between his subordinate and a Christie's executive on the subject.[70] The jury convicted Taubman on the basis of this evidence, and he was sentenced to one year and a day in jail and a fine of $7.5 million.

5.2.2 Canada

93. Canada has also long classified cartels as crimes. Like the U.S., there were some early cases in which convictions were based only on circumstantial evidence, and in which the sanctions – fines – were minimal.[71] In 1980 an important case in the evolution of the use of circumstantial evidence in criminal cases was decided by the Supreme Court of Canada.

5.2.3 Atlantic Sugar[72]

94. The defendants, three sugar refiners, were accused of, among other things, entering into an agreement to maintain traditional market shares over a period of several years. There was no evidence of communication between the defendants on this subject, however. The evidence, as characterised by the court, was entirely "circumstantial." It included the rigid stability of the defendants' shares over a long period and at least one facilitating practice – basing point pricing. In addition, there was documentary evidence showing that the defendants deliberately – but apparently independently – chose not to initiate price cuts that would destabilise this environment.

95. The trial judge concluded that the circumstances were "the result of a tacit agreement between the accused," brought about by the desire of each defendant to avoid a destructive price war.[73] The judge held, however, that such conduct did not constitute a violation of the applicable criminal law. The Supreme Court upheld the trial court (an intermediate appellate court had overturned it). It emphasised the apparent lack of communication between the defendants on this point. Then:

> In those circumstances did the "tacit agreement" resulting from the expected adoption by the competitors amount to a conspiracy? I have great difficulty agreeing that it did because the author of Redpath's [the pricing leader] policy was conscious that its competitors would inevitably after some time become aware of it in a general way and also expected them to adopt a similar policy which would also become apparent.[74]

96. The *Atlantic Sugar* decision engendered concern that "tacit agreements" were no longer subject to the criminal conspiracy provisions of the Competition Act. The Act was amended in 1986, adding (among other things) the following provision:

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70. There was also oral testimony offered by Taubman's subordinate, however, which the U.S. government considered to be direct evidence. A good description of the evidence introduced by the government can be found in a government filing in the appeal from the conviction (which was upheld), available at http://www.usdoj.gov/atr/cases/f11300/11329.htm.

71. One of these was *McGavin Bakeries*, a case decided in 1951 by the Supreme Court of Alberta. Rex v. McGavin Bakeries, Ltd., 3 W.W.R. (N.S.) 289, at p. 10 (1951). The court noted that ". . . the crown's case here is based almost entirely on circumstantial evidence," but it concluded that the "massive amount of factual material" relating to conduct over a 17 year period by bakers in three western provinces resulted in the "inescapable inference . . . that there was the conspiracy charged." The maximum fine that could be applied to the conduct, however, was CAD10,000. Six defendants were fined a total of CAD30,000.

72. Atl. Sugar Refineries Co. v. A.G.Can.., [1980], 2 S.C.R.644.

73. *Id.*, at p. 7.

74. *Id.*, at p. 15.

> **Evidence of conspiracy** – In a prosecution under subsection (1), the court may infer the existence of a conspiracy, combination, agreement or arrangement from circumstantial evidence, with or without direct evidence of communication between or among the alleged parties thereto, but for greater certainty, the conspiracy, combination, agreement or arrangement must be proved beyond a reasonable doubt.[75]

97. The following interpretation of the amendment is provided in a comment to the law:

> The new subsection makes clear that tacit agreements, in the sense of agreements proved by circumstantial evidence alone, fall within the scope of s. 45(2.1). However, the section does nothing to clarify the more difficult questions of what in law constitutes an agreement, what sort of communication among the alleged conspirators is necessary and how to distinguish agreements from mere "conscious parallelism."[76]

98. In any case, it seems that the trend in Canada, like that in the U.S., is toward an increasing number of cartel cases generated by its immunity programme.

6. Conclusion

99. In prosecuting cartel cases, competition officials prefer to have direct evidence of the cartel agreement, and they are getting better at acquiring it. Circumstantial evidence continues to play an important role in cartel cases, however, either alone or, more commonly, together with direct evidence. Circumstantial evidence may be relatively more important in early cartel cases in countries just beginning an anti-cartel effort, as those new agencies may not have perfected their ability to develop direct evidence.

100. There are various types of circumstantial evidence, and it is difficult to generalise about them, because each case is highly fact specific. However, communication evidence and conduct evidence that tend to show that the parties' actions were not consistent with each party's unilateral self-interest are widely considered most important. Other economic evidence typically will be relevant as well to establish a persuasive case.

101. The great challenge in establishing a circumstantial evidence case is that such evidence typically is ambiguous and subject to more than one interpretation. There is a risk that enforcers will too readily condemn parallel conduct even though it is simply the result of independent action by market participants, each acting according to its own judgment as to its best interests. As demonstrated above, application of sound economic principles plays an important role in interpreting the conduct of firms to distinguish lawful, unilateral acts from joint action that results from an unlawful agreement.

75. Competition Act, §45(2.1).

76. Robert S. Nozick, *The 2004 Annotated Competition Act* (Toronto: Thomson Carswell, 2004), at 87.