Fixing Price with Your Victim: Efficiency and Collusion with Competitor-Based Formula Pricing Clauses

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A well-settled principle of antitrust law is that competitors cannot make a simple or "naked" agreement among themselves to fix prices\(^1\) without violating section 1 of the Sherman Act.\(^2\) Thus, for example, Boeing and McDonnell Douglas cannot lawfully agree that they will charge the same price for their aircraft. However, what if Boeing agrees with its customers that it will charge the same price that McDonnell Douglas charges? Does this contract clause also vio-

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1. See Arizona v. Maricopa County Medical Soc'y, 457 U.S. 332, 345-48 (1982). It is important for antitrust purposes to distinguish price-fixing agreements adopted in the context of joint ventures or other integration of operations from the same restrictions undertaken in isolation. Where two independent firms agree to fix prices or divide markets without more, no integration of operations occurs, and little opportunity for the expansion of output or the enhancement of efficiency exists. In such cases, the restraints are said to be "naked." Thus, the distinguishing feature of naked price-fixing lies in the absence of any integration of operations; it is this absence that prevents this naked restraint from having any likely output-increasing or efficiency-enhancing qualities and is the reason for holding such restraints illegal \textit{per se}. See Rothery Storage & Van Co. v. Atlas Van Lines, 792 F.2d 210, 215 (D.C. Cir. 1986), \textit{cert. denied}, 479 U.S. 1033 (1987); Polk Bros. v. Forest City Enters., 776 F.2d 185, 188 (7th Cir. 1985); R. Bork, \textit{The Antitrust Paradox} 263-64 (1978); \textit{see also Maricopa County Medical Soc'y}, 457 U.S. at 356-57.

2. 15 U.S.C. § 1 (1982). Section 1 provides that "[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal." \textit{Id.}
late the Sherman Act?

The clause contained in the hypothetical Boeing contract is one example of what can be termed "competitor-based formula pricing clauses." In commercial practice, these clauses appear in quite a variety of forms, and they are used frequently in long-term contracts. Competitor-based pricing clauses, furthermore, can be efficient as well as anticompetitive, depending on the industry structure in which they appear. In unconcentrated industries, these types of contract clauses bring the prevailing forces of the market to bear throughout the life of long-term contracts and can allocate risk efficiently. In oligopolistic (or oligopsonistic) markets characterized by high entry barriers, however, competitor-based formula pricing clauses may facilitate tacit collusion and, therefore, have anticompetitive effects. The clauses can create such effects mainly from their ability to create externalities and alter incentives for price competition.

The clauses and some variants have been discussed in numerous judicial opinions dating back to the Supreme Court's opinions in United States v. Socony-Vacuum Oil Co. and International Salt Co. v. United States. In most cases, the courts have failed to focus on two principal characteristics of these clauses—their incentive al-

3. See infra notes 41-49 and accompanying text (defining competitor-based formula pricing clauses).
4. See Clark, Price-fixing Without Collusion: An Antitrust Analysis of Facilitating Practices After Ethyl Corp., 1983 Wis. L. Rev. 887, 895-99 (discussing structural factors to consider in evaluating facilitating practices, such as competitor-based formula pricing clauses).
5. In unconcentrated markets, "sales are distributed among many sellers and no small number has a significant share." C. Kayser & D. Turner, Antitrust Policy: An Economic and Legal Analysis 25 (1959); see Clark, supra note 4, at 895.
6. Once parties sign a long-term contract, the contract determines the price for the length of that contract and, therefore, exchanges that occur under fixed-price contracts are not significantly influenced by prevailing marketplace conditions. Inclusion of a competitor-based pricing clause, however, still allows prevailing market forces to affect contractual price after the contract is signed.
8. An oligopolistic market is one with few sellers so that each seller's price and output decisions will have a noticeable effect on the other sellers in that market, as well as on the market itself. 6 P. Areeda, Antitrust Law § 1429a, at 175 (1986).
9. See infra, text accompanying notes 110-29.
10. See infra text accompanying notes 29-30 (discussing externalities).
11. See infra notes 38-40 and accompanying text.
12. 310 U.S. 150 (1940).
tering and externality creating properties. Consequently, courts have not properly analyzed the clauses, despite the fact that they may have reached the correct results in some cases. The Federal Trade Commission is the only judicial body to expressly consider these two properties. The Commission’s decision in *In re Ethyl Corp.* considered one type of competitor-based formula pricing clause, the most-favored nation clause (MFN), under section 5 of the Federal Trade Commission Act. In holding MFN clauses illegal, the Commission, although reversed on appeal, generally relied on the incentive altering characteristics of the clauses and noted the existence of externalities in its analysis.

In contrast to the Federal Trade Commission, most courts and scholars refer to these clauses as "price protection" clauses, presumably because they protect the party desiring the clause from unfavorable price changes. This Article will demonstrate, however, that these clauses can have the opposite result. In certain instances, they have a tendency to cause the price change that was sought to be avoided and create the same effect as a horizontal conspiracy to fix price. Thus, the contract with the "victim" can substitute for the horizontal contract or agreement.

This Article considers competitor-based formula pricing clauses in a generic fashion and attempts to determine the general condi-

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16. Most-favored-nation clauses are "contract provisions which require offering the benefits of a lower price to all customers if it is offered to any." *Ethyl Corp.*, 101 F.T.C. at 628. These clauses may also be referred to as "most-favored-customer pricing," *see Cooper, Most-Favored-Customer Pricing and Tacit Collusion*, 17 RAND J. ECON 377 (1986), or "most-favored-buyer clauses," see 6 P. AREEDA, *supra* note 8, ¶ 1435e, at 229-30.


19. 101 F.T.C. at 630-32.


21. A horizontal conspiracy is an agreement among competitors to restrain trade, as opposed to a vertical conspiracy, which is an agreement among members at different levels of production, such as manufacturers and their suppliers. United States v. *Topco Assocs.*, 405 U.S. 596, 609 (1971).
tions under which such pricing schemes create anticompetitive effects. The Article attempts to identify the common features of competitor-based formula pricing clauses that create anticompetitive effects and under what circumstances these effects become pronounced. Finally, the Article analyzes the clauses in the context of section 1 of the Sherman Act, and concludes that in instances where competitor-based formula pricing creates anticompetitive outcomes, this practice can and should be prohibited as contrary to the Sherman Act.

Section I of this Article discusses various economic aspects of long-term contracts. Section II defines competitor-based formula pricing clauses and provides examples of the clauses. Section III presents the efficiencies of the clauses, and a discussion of the anticompetitive effects follows in Section IV. Section V analyzes the clauses in the context of section 1 of the Sherman Act. Finally, Section VI discusses In re Ethyl Corp., the only case to date which properly analyzes the effects of competitor-based formula pricing clauses.

I. ECONOMIC ANALYSIS OF LONG-TERM CONTRACTS

In order to understand how competitor-based formula pricing clauses affect competition, an appreciation of some of the economic principles of long-term contracts is helpful. One of the primary concepts underlying the making of any contract is that a lawful contract embodies a voluntary exchange, which benefits both parties to the exchange. To illustrate, suppose A has goods worth $100 to him, but worth $200 to B. It is economically advantageous to both parties if A exchanges his goods to B at any price between $100 and $200. Assuming both A and B realize their respective positions, it is economically rational that such an exchange occurs. Social welfare will also be increased by the exchange. Assume the sale occurs at $150. Prior to the sale A had $100 worth of goods and B had $150 in cash, for a total value to society of $250. After the sale, A had $150 and B had goods worth $200 to him, for a total value to society of $350. Social

22. See infra notes 29-40 and accompanying text.
23. See infra notes 41-49 and accompanying text.
24. See infra notes 50-57 and accompanying text.
25. See infra notes 58-145 and accompanying text.
26. See infra notes 146-213 and accompanying text.
28. See infra notes 214-32 and accompanying text.
wealth, therefore, has increased from $250 to $350.29

This analysis, however, may be flawed since it does not consider the contract’s effects upon third parties.30 For example, suppose performance of the hypothetical contract between A and B caused pollution to C’s property, which would leave C with $150 in clean-up costs. Although A and B will still desire to go forward with their contract, the costs borne by others may make the agreement socially undesirable. Assume that prior to the contract A’s goods were worth $100 to him, B had $150 in cash, and C had nothing, for a total of $250. After the exchange, A had $150, B had $200, and C lost $150, for a social aggregate of $200—a loss of $50. The effect of A’s and B’s contract on C is termed an externality. That is, the agreement between A and B has effects, or externalities, on individuals who are not parties to the contract. Thus, voluntary exchanges will increase societal welfare only in the absence of externalities.

Many competitor-based formula pricing clauses are embedded in long-term contracts.31 One might ask why parties would adopt a long-term contract rather than a series of short-term agreements. First, and most obvious, is the concern with transactions costs.32 It can be significantly less time consuming and costly to negotiate one contract covering, for example, ten years, than to negotiate ten individual one-year contracts. Second, depending on one’s degree of risk aversion, the ability to assure oneself of a steady source of supply or the continued existence of a buyer may prove valuable.33 Third, the long-term contract allows the parties to allocate the risk of price and cost changes in an efficient way.34 Finally, long-term contracts help to avoid the problem of opportunism.35 Opportunism includes the

30. See id. at 2 (noting that this example ignores third parties).
32. Id. at 5.
33. See id. This factor is important in cases which require large initial outlays of capital and a long run flow of revenue to make the investment economically feasible. In gas production, for example, the sizeable costs of drilling, equipping, and connecting a gas well to a pipeline system are mostly fixed and must be incurred before a well can be brought into production. Id. at 5-6.
ability of one party to take advantage of another party after they have entered into a contractual relationship. For example, a party may seek to rent an asset which is very expensive to remove once it is installed, such as a pipeline. If the parties agree only to a one-year contract, the buyer will have substantially more bargaining leverage when the parties sit down to negotiate the second one-year contract *ex post*, than the buyer did when negotiating the initial contract *ex ante*. The buyer knows that, at possible subsequent transactions, the seller intends to deal with him above all other buyers because of the great expense involved in removing the asset. The buyer, therefore, would be able to extort a lower price through his opportunistic behavior. A long-term contract avoids the possibility of such *ex post* conduct by requiring all of the bargaining to occur *ex ante*. That is, all of the negotiation occurs before the asset becomes specialized to a particular buyer and, therefore, all buyers compete equally.

As mentioned above, the parties to a long-term contract have a mutual economic interest in efficiently allocating the risk of future market price changes that occur during the term of the contract. Of even greater significance, however, is that the manner in which risk is allocated, and to whom it is allocated, can alter the incentives of the parties and result in more or less efficient outcomes. Indeed, alternative contractual structures dealing with price changes may be characterized by their risk allocation and incentive creating properties.

Two common contract provisions are fixed-price and cost-plus price setting clauses. The fixed-price contract, however, offers superior incentive properties since it increases the seller's incentive to efficiently minimize costs. This incentive arises because the seller absorbs the entire effect of cost increases and enjoys all the benefits of cost reductions. In contrast, a cost-plus contract compromises the seller's incentives to minimize costs because he receives no benefit

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36. Opportunism is behavior driven by self-interest that is a form of reneging on a contract. *Id.* at 298. Regardless of how carefully contracts are drawn to consider all contingencies, the risk of opportunistic behavior (i.e. the contract not being honored in some manner) is present. *Id.* at 297-98; see also O. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS 26 (1975) (noting that "[o]ppportunism extends the conventional assumption that economic agents are guided by considerations of self-interest to make allowance for strategic behavior." (emphasis in original)); see also H. KRONMAN & R. POSNER, supra note 29, at 4 (discussing the need for sanctions under contract law where extended exchanges create "strategic opportunities that parties might try to exploit").

37. For a more detailed analysis of opportunism, see O. WILLIAMSON, supra note 36, at 26-30; Klein, Crawford & Alchian, supra note 35, at 298 (exploring the threat of post-contractual opportunistic behavior as it occurs with regard to rental arrangements).
from reducing costs. Economists label such a disincentive to reduce costs "a moral hazard." Only the buyer gains from cost-reducing measures in the cost-plus contract. Therefore, the fixed-price contract can be characterized as allocating risk of future market price increases to the seller, thereby maintaining its incentives to reduce cost. The cost-plus contract, on the other hand, can be characterized as allocating the risk of price increases to the buyer, thereby reducing the seller's incentives to minimize costs.

To summarize, the basic economic contract principles important to this analysis are that contracts: (1) result from voluntary exchanges that maximize social welfare in the absence of externalities, (2) can alter incentives of the parties, and (3) can be more or less efficient depending on their structure and the manner in which they shift risk. These basic contract principles provide the necessary foundation to fully understand the effects of competitor-based formula pricing clauses on competition.

II. COMPETITOR-BASED FORMULA PRICING CLAUSES DEFINED

Competitor-based formula pricing clauses peg the contract price to the prices charged or paid by the competitors of one or both of the parties to the contract. They are generally designed to bring the pre-

38. See O. Williamson, supra note 36, at 84-85 (discussing risk-bearing and incentives, and noting that risk can be shifted by use of a cost-plus contract). A price determined by the seller's costs is a good proxy for the market price if the market is competitive and the seller is efficient. It is not a perfect proxy, however, because demand effects are not taken into account.

39. See id. at 13-16. Professor Williamson defines the insurance industry "moral hazard" problem as the circumstance in which insureds with post-control knowledge of costs (their own risk aversion practices) exploit that information opportunistically, while the insurer could obtain the same information only by bearing a much greater cost. Id. The insurance industry provides an example of measures taken to minimize the "moral hazard" problem by the use of deductibles. Id. If the insured suffers no monetary injury from getting into an automobile accident, he or she is less likely to drive carefully, so that allocating cost to the insured by means of a deductible avoids the "moral hazard" problem by giving the insured an incentive to drive carefully. See id.

40. Id. This shortcoming can be combated more efficiently through a price escalator provision to be triggered by a cost index that is not under the seller's control, yet is highly correlated with the market price. For example, if in a long-term contract for the purchase of airplanes, production of one plane consisted solely of 1 ton of aluminum, 100 worker hours, and 50 kilowatt hours of electricity, then the price might be escalated by a formula that weights the wholesale price index for aluminum sheet, the average hourly wage of skilled workers, and the wholesale price index of electricity. Such indexed contracts are more efficient because they allow the contracting parties to allocate the risk of price changes to the buyer and, at the same time, maintain the seller's incentive to minimize costs. In addition, cost-plus contracts are more difficult to monitor since it is difficult to verify the seller's costs to ensure that they are not being overstated. A cost-index, on the other hand, is easily verified since it is likely to be derived from publicly accessible information.
vailing forces of the market to bear throughout the life of long-term contracts.\textsuperscript{41} For example, if the parties sign a long-term contract with a set price, exchanges occurring under that contract are taken out of the “spot” market of short-term exchanges or contracts. Inclusion of a competitor-based formula pricing clause would represent an attempt to allow those market forces to continue to affect the contract price even after the contract is signed. Adjusting the price in a long-term contract to reflect current market prices gives the parties the proper short-run price signals.\textsuperscript{42}

Perhaps the most obvious way to bring these market forces to bear on the contract price, \textit{ex post}, is by setting the contract price equal to the spot market price.\textsuperscript{43} Thus, even though a contract may be in its twentieth year, the buyer would pay the current spot market price. The parties in \textit{United States v. Socony-Vacuum Oil Co.}\textsuperscript{44} used a similar arrangement.\textsuperscript{45} In \textit{Socony-Vacuum Oil Co.}, the defendants maintained long-term contracts with some jobbers (distributors) and pegged the price of any particular oil shipment to the spot market prices appearing in a specified trade journal on the day of shipment.\textsuperscript{46}

In industries where transaction prices are not routinely reported, however, other proxies for the market price must be found. In competitive industries, the recent prices charged to other buyers by the seller or the seller’s competitors may suffice. Alternatively, the recent prices paid by the contracting buyer or other buyers can be used. Thus, for example, in a contract with a “most-favored nation clause” (MFN), the contract price is tied to the price offered to other parties by either the contracting seller or the contracting buyer.\textsuperscript{47} A “meet-

\begin{itemize}
\item[41.] See Mulherin, \textit{supra} note 34, at 111 (noting that in the natural gas industry, “[t]hese adjustment provisions have been structured to allow price response to new information within an otherwise long-term agreement . . .”).
\item[43.] See infra note 46 (discussing “spot market” pricing).
\item[44.] 310 U.S. 150 (1940).
\item[45.] \textit{Id.} at 166.
\item[46.] \textit{Id.} at 192-94. There was, however, no central exchange or market price for spot market transactions. Each sale was the result of individual negotiations between a refiner and its customers for delivery in the immediate future. \textit{Id.} at 193. The trade journal reported the range of these transactions daily and the journal quotations were known as the “spot market” price. \textit{Id.} The shipments occurring under the long-term contracts were in turn determined by these spot prices. \textit{Id.}
\item[47.] See Salop, \textit{supra} note 7, at 273-78 (discussing examples of MFNs). MFN clauses are contract provisions which require the seller to offer the benefit of a lower price given to one customer to all customers if the lower price is offered to any. \textit{In re} Ethyl Corp., 101 F.T.C.
ing competition clause” (MCC), on the other hand, ties the contract price to prices offered by other buyers or sellers and puts the burden of searching out such prices on one of the contracting parties. Numerous other variations and combinations of these provisions are also possible.

In unconcentrated markets, competitor-based formula pricing clauses are better reflectors of market forces than clauses that index the contract price only to costs, because competitor-based formula pricing clauses take into account changes in demand as well as changes in cost or supply. The clauses do so by pegging the contract price to the spot market or competitor prices which are determined jointly by supply and demand factors. Since index based clauses only take account of costs, the influence of demand factors is ignored.

III. EFFICIENCIES OF COMPETITOR-BASED FORMULA PRICING CLAUSES

In addition to bringing the prevailing market forces to bear throughout the life of long-term contracts, competitor-based formula pricing clauses are efficient in several other aspects as well. As the next Section demonstrates, however, the characteristics of the clauses may be adversely affected in concentrated markets. The discussion here, therefore, analyzes the clauses in the context of unconcentrated markets. The additional benefits provided by these clauses fall basically into the following categories: (1) allocation of risk; (2) insurance against competitive disadvantage; (3) maintenance of incentives to minimize costs; and (4) earlier consummation of transactions.

A. Allocation of Risk

In a long-term contract, both parties face the risk that the market price will change at some point during the contract term. Indeed, the competitor-based formula pricing clause is designed specifically in contemplation of such changes. As noted above, the parties have a mutual interest in efficiently allocating the risk of future price

425, 470 (1983), rev'd sub nom. E.I. DuPont De Nemours & Co. v. FTC, 729 F.2d 128, 134 (2d Cir. 1984). MFN clauses in sales contracts provide “the buyer with insurance protection against the contingency that the seller may offer a lower price to another customer.” Salop, supra note 7, at 273.

48. See Salop, supra note 7, at 279. The MCC provides the buyer with insurance against lost opportunity in the situation where the buyer would have been offered a better price by the seller's competitor. Id.

49. See id. at 274-79, 280-82.
changes that occur during the contract term. If both the buyer and the seller are risk neutral, they will be indifferent to shifting risk.\textsuperscript{50}

Competitor-based formula pricing clauses can accommodate risk shifting quite easily. In \textit{Socony-Vacuum Oil Co.}, for example, the contract price was determined by the spot market price for gasoline as published in a trade journal.\textsuperscript{51} If the buyers of the gasoline had been risk averse and wanted to avoid the effects of unfavorable price increases, the contract could have been written to reflect their desire; the parties could have pegged the contract price to the existing spot price with a proviso that, should the spot price rise, the contract price would remain constant. Thus, if the spot price fell, the contract price would have also fallen, but if the spot price rose, the contract price would not have risen correspondingly. Obviously, the buyer would have to pay a premium for this insurance protection.

MCCs and MFNs can also be designed to shift risk. Indeed, both types of clauses are structured in most cases to accomplish risk shifting. For example, an MFN clause shifts the risk of a price increase to the seller by providing as follows: “If at any time before buyer takes delivery of said generator, seller offers a lower price for a comparable size and quality generator to any other purchaser, seller will also offer the lower price to buyer.”\textsuperscript{52}

By using the contracting seller’s price as a proxy for the market price, the MFN clause allows the buyer to enjoy the benefits of a price decline, but not to suffer the harm of a price increase. The seller absorbs that risk and, therefore, this type of clause is termed an MFN on the seller’s side.

MFNs are also common on the buyer’s side.\textsuperscript{53} These clauses tie

\textsuperscript{50} That is, either party would be willing to bear the risk in exchange for an actuarially equivalent price premium. In other instances, however, both parties will benefit by shifting risk. In such cases, the cost to one party of absorbing risk is less than the benefit conferred on the other party from avoiding the risk. Therefore, there is room for a deal.

\textsuperscript{51} 310 U.S. 150, 193 (1940).

\textsuperscript{52} Clauses of this type were used by General Electric and Westinghouse during the 1960’s and were the subject of a consent decree with the Justice Department in 1977. \textit{See United States v. General Elec. Co.}, 1977-2 Trade Cas. (CCH) \# 61,659, at 72,716 (E.D. Pa. 1977).

\textsuperscript{53} MFNs on the buyer’s side are used widely throughout the oil and gas industry. \textit{See U.S. Dep’t of Energy, Energy Information Admin., Natural Gas Producer/Purchaser Contracts and Their Potential Impacts on the Natural Gas Market, and Analysis of the Natural Gas Policy Act and Several Alternatives (pt. II) (1982)} [hereinafter \textit{Natural Gas Producer/Purchaser Contracts}] (reporting studies that show an increase in the use of buyer protection clauses, which allow the buyer to refuse to purchase gas or to reduce the price because of adverse market conditions); Hughes, \textit{Indefinite Escalators: 1985, Does FERC Have a “Stairway” Down?}, 4 \textit{Energy L.J.} 189 (1983) (discussing
the contract price to prices paid by the buyer to other sellers and shift the risk of price decreases to the buyer. They require the buyer to pay the contracting seller a higher price if he offers a higher price to another seller. The following is an example of an MFN on the buyer's side:

If at any time or times after the date of this Agreement Buyer . . . shall purchase from any other seller gas from [wells within specified counties], at a price per one thousand (1,000) cubic feet higher than the price at the time payable hereunder, the price payable to seller . . . for gas hereunder shall be immediately increased to equal such higher price paid to such other seller.  

MCCs that shift risk to the seller generally provide that if another seller offers a lower price during the term of the contract, the buyer will get the benefit of the lower price.

B. Insurance Against Competitive Disadvantage

One aspect of the risk allocation function of competitor-based formula pricing clauses is that it can offer insurance against competitive disadvantage where competitors also buy the input. Competitor-

FERC power to curtail use of MFNs in the natural gas industry); H. Broadman & M. Toman, supra note 31, at 15.


55. MCCs also are widely used in the oil and gas industry. See Natural Gas Producers/Purchaser Contracts, supra note 53, at 62. MCCs, however, are often referred to in this industry as “third-party most favored nation clauses,” whereas MFN’s are often referred to in the oil and gas industry as “two-party most favored nation clauses.” Generically, they are both part of what the industry terms “indefinite escalator clauses.” See id.; H. Broadman & M. Toman, supra note 31, at 12.

A common variant of the MCC is the “meet or release clause” (MOR). This clause is basically identical to the meeting competition clause except that the seller is not obligated to lower its price. The clause provides that the seller has the option of reducing its price to meet the lower price and if it does not reduce the price, the buyer is released from the contract. The following is an example of an MOR:

If at any time during the term of this [contract] a general reduction in [the] price of . . . salt . . . shall be made, said [buyer] shall give [the seller] an opportunity to provide . . . salt at any such competitive price quoted, and in case [the seller] shall fail or be unable to do so, [the buyer] . . . shall have the privilege of . . . [purchasing] salt in the open market until such time as the [seller] shall furnish . . . salt at the said competitive price.


MCCs, like MFNs, see supra note 53 and accompanying text, can also occur on the buyer's side. Such MCCs would simply provide that if the buyer received a better price from another seller, the contracting seller would have to match the lower price or, under the MOR clause, release the buyer from the contract.
based formula pricing clauses accomplish this by insuring that the firm using the clause pays no more for the input than its competitors. With regard to the MFN, for example, if the contracting seller gives the competitor a lower price, it must give the same low price to the contracting buyer as well. With the MCC, if other sellers are giving lower prices, the contracting buyer will not be disadvantaged vis-a-vis its competitors who buy from those other sellers. The contracting seller must give it the same lower price its competitors are getting.

C. Maintenance of Incentives to Minimize Cost

Assuming two parties enter into a long-term contract and want to shift the risk of either a price increase or decrease, competitor-based formula pricing clauses may efficiently accomplish the parties’ goals. There are several ways to shift the risk of price increases, and some ways are more efficient than others. For example, price escalator clauses based on the wholesale price index of various inputs are more efficient than cost-plus contracts, since the latter reduce incentives of the seller to minimize cost, whereas the former retain those incentives.66

Competitor-based formula pricing clauses can also shift risk while maintaining the desired incentives to minimize costs. In essence, they function just like the price escalator clauses based on a wholesale price index. That is, they use a proxy for the market price that is not within the seller's control, but which still highly correlates to the market price. Indeed, competitor-based formula pricing clauses can be more efficient than clauses based on wholesale indices.

If the seller's actions do not affect the price, its incentive to behave efficiently and minimize cost will be maintained. In a competitive market, all firms are price takers and, therefore, not even a seller's own price is within its control. The spot market price is certainly not within the control of any one firm in a competitive market. As discussed above, competitor-based formula pricing clauses provide better proxies for the market price than prices based on a wholesale index because the latter does not account for shifts in demand, which can affect the market price. Thus, competitor-based formula pricing clauses can shift risk more efficiently because they do so while maintaining the seller's incentives to minimize cost and providing better proxies for the market price.

56. See supra notes 38-40 and accompanying text.
D. *Earlier Consummation of Transactions due to Elimination of Risk of Price Change*

Competitor-based formula pricing clauses on the seller's side may convince customers to make purchases sooner than they would in the absence of the clauses. In a volatile market, the buyer may be reluctant to buy earlier rather than later because it may expect a price decline in the contract period and may be delaying its purchase in anticipation that the purchase price reflects that decline. The clause should reduce the reluctance to buy early on in the contract term because if the market price falls, the buyer gets the benefit of the lower price. Thus, the clause encourages the buyer to purchase earlier than it otherwise would.  

IV. *ANTICOMPETITIVE EFFECTS OF COMPETITOR-BASED FORMULA PRICING CLAUSES*

This Section examines the anticompetitive effects of competitor-based formula pricing clauses, beginning with a review of cartel theory and a discussion of the conditions under which firms may become interdependent. The discussion of cartel theory sets up the subsequent analysis of the theory of facilitating practices. Cartel and facilitating practice theories are then applied to competitor-based formula pricing clauses.

A. *Cartel Theory*

A cartel arises when the individual firms in an industry join together to reduce the industry's output and increase prices in the same fashion as a monopolist. Thus, a successful cartel is able to achieve the same results as a monopoly—setting price above marginal cost.  

Cartels, however, are inherently unstable for several reasons. First, the parties to a conspiracy may have different ideas about the appropriate price levels and market shares. Such differences may make it difficult to reach an agreement all of the members will re-

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57. While theoretically plausible, there is no known empirical validation of the significance of this factor.
58. The simplest cartel is an agreement among competing sellers to sell all their output at the same price. H. HOVENKAMP, ECONOMICS AND FEDERAL ANTITRUST LAW 83 (1985).
59. See id. at 84 (comparing a cartel's determination of the profit-maximizing price with the single-firm monopoly's determination).
60. See F. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 171 (2d ed. 1980); O. WILLIAMSON, supra note 36, at 241; Salop, supra note 7, at 266.
Furthermore, if the products are significantly differentiated, the cartel members will have to agree on a method to account for the differences.\textsuperscript{62}

Second, the cartel members must devise a way to increase price from the competitive level to the monopoly price.\textsuperscript{63} No member will want to be the first to raise price, since it would lose customers and goodwill during the time it had a higher price.\textsuperscript{64} Both of the above-mentioned difficulties will be recurring concerns. The cartel will have to set new prices periodically due to changes in cost and market conditions. Each time a price increase is in order, the members will have to agree upon a price and devise a means to attain it.\textsuperscript{65}

Third, once the cartel members have agreed on price and have attained that price, there is the problem of maintaining the price.\textsuperscript{66} Each cartel member has an incentive to cheat or shade the cartel price.\textsuperscript{67} By lowering price, an individual firm will increase its sales and make greater profits because the cartel price is above marginal cost.\textsuperscript{68}

An additional problem with maintaining the cartel exists. If the cartel accomplishes its goal of high profits for its members, firms outside the industry will be induced to enter to obtain the high profits themselves.\textsuperscript{69} Unless barriers to entry are present, the cartel will have to admit the new entrants or it will not be able to maintain the supracompetitive price.\textsuperscript{70} Otherwise, the entrants will undercut the

\textsuperscript{61} See F. Scherer, supra note 60, at 171; Salop, supra note 7, at 266.
\textsuperscript{62} See F. Scherer, supra note 60, at 200-01; Salop, supra note 7, at 266. Scherer outlines four broad differences among apparently similar products. First, stable interfirm differences in product quality may exist, which requires coordinating both the general price level and the differential between the products. Id. at 201. Second, when sellers are located at varying distances from buyers and transportation costs are relatively high, a very complex price structure may be required to assure that the sellers' prices will be the same to each buyer. Id. Third, product qualities may be dynamically unstable, as in the fashion goods industry, which would probably require frequent changes and thus an increased number of agreements on price. Id. Fourth, complex products are often sold on a custom-made basis where no two orders are identical, making agreement extremely difficult. Id.
\textsuperscript{63} See Salop, supra note 7, at 266.
\textsuperscript{64} See id. at 268.
\textsuperscript{65} See id. at 266-68.
\textsuperscript{66} See id.
\textsuperscript{67} See id. at 269.
\textsuperscript{69} See Posner, Oligopoly and the Antitrust Laws: A Suggested Approach, 21 Stan. L. Rev. 1562, 1569 (1969) (discussing the need to create barriers to the entrance of new firms into the market to protect the cartel).
\textsuperscript{70} Id.
cartel price and take away the cartel’s customers. If the entrants are admitted, however, the monopoly profits will have to be spread more thinly.\textsuperscript{71} Furthermore, if the cartel eventually breaks down, the market will have too many firms which will result in “ruinous” competition and numerous failed firms.\textsuperscript{72} Thus, even if firms in an industry can agree on a price level as well as how to attain and maintain the price, their efforts will be wasted unless barriers to entry exist. Accordingly, a cartel is less likely to exist without entry barriers.

The problems discussed above are exacerbated when the Sherman Act\textsuperscript{73} is considered. The Act prohibits contracts, combination, and conspiracies in restraint of trade, such as cartel agreements.\textsuperscript{74} Even where cartels are legal, the difficulties of maintaining them are substantial.\textsuperscript{75} It is difficult enough to agree on a price where the parties are able to meet and negotiate openly. The Sherman Act makes it necessary for the parties to meet or correspond secretly,\textsuperscript{76} thus creating a higher degree of distrust and uncertainty. A court will not enforce these secret agreements and their stability is often uncertain.\textsuperscript{77}

As the prior discussion indicates, however, the firms in a cartel should realize that cheating will lead to the collapse of the cartel and lower profits for all. Nevertheless, strong reasons for cheating remain. First, it may be possible to cheat secretly and, as a result, prevent retaliation long enough to make cheating worthwhile.\textsuperscript{78} Second, a firm might cheat because it lacks confidence that the cartel will endure and sees no advantage in foregoing the short-term gains

\textsuperscript{71} Id.
\textsuperscript{72} Id. The possibility of a breakdown of the cartel, which would result in “ruinous” competition, can itself deter entry. However, potential entrants would be deterred only if they first recognized that a cartel was in operation as opposed to attributing high profits to a temporary disequilibrium. Moreover, individual potential entrants could enter and exist under the pricing umbrella of the cartel without causing a breakdown, provided that their capacity was sufficiently small. Small potential entrants may thus enter in the hope that a sufficient number of other potential entrants will refrain from entry. See C. Kayser & D. Turner, \textit{supra} note 5, at 195-96.
\textsuperscript{73} 15 U.S.C. §§ 1-7 (1982).
\textsuperscript{74} Id. § 1.
\textsuperscript{75} See Rattner, \textit{Oil Price Pact Called Unlikely}, N.Y. Times, May 11, 1981, at D1, col. 3 (noting that OPEC had difficulty agreeing on price).
\textsuperscript{76} See Posner, \textit{supra} note 69, at 1570 (noting that cartel participants are limited to clandestine methods).
\textsuperscript{77} See H. Hovenkamp, \textit{supra} note 58, at 83 (commenting on the instability of cartel agreements).
\textsuperscript{78} See O. Williamson, \textit{supra} note 36, at 242; Salop, \textit{supra} note 7, at 269; Posner, \textit{supra} note 69, at 1570.
for the long-term gains it considers unlikely. Additionally, a firm may cheat deliberately because it thinks that other firms in the cartel are cheating.

Once a cartel is formed, the cartel price is attained, and a barrier to entry is in place, the basic ingredient to successful maintenance is to create the belief that any cheating will be met with swift retaliation. Of course, the best way to create such a belief is to make it a reality. Indeed, the reality may be required if cheating can occur inadvertently. This will require methods to detect cheaters and guarantee that at least some members will retaliate quickly enough so that the cheater will not significantly increase its market share and profits. The existence of the Sherman Act usually makes the ability to create the requisite certainty difficult or impossible.

It is possible in some instances, however, that such certainty can exist purely as the result of interdependence among participating firms. That is, the responses and conduct among firms in an industry are so clear to each other that each takes into account the expected price decisions of its rivals and decides to charge a noncompetitive price, making formal agreement between the firms is unnecessary. Such a situation could arise in a market characterized by many of the following conditions: (1) few firms, (2) a relatively homogeneous product, (3) frequent small sales, (4) few big buy-

79. Posner, supra note 69, at 1570.
80. Clark, supra note 4, at 892.
82. Cf. Posner, supra note 69, at 1570 (stating that “[a] seller might cheat inadvertently because of a mistake in computation or a failure of communication of the agreed price.”).
84. Experimental evidence indicates that such interdependence is especially likely to result where firms must continually interact with each other and where the last interaction is unknown. See R. AXELROD, THE EVOLUTION OF COOPERATION 125-32 (1984) (discussing the improvement of cooperation based on experiments involving the Prisoner’s Dilemma).
85. Interdependence can exist only where few firms are present because as the number of firms gets larger, it gets increasingly more difficult to calculate and keep track of each firm’s activities. See Clark, supra note 4, at 895.
86. A relatively homogeneous product is helpful because the converse, differentiated products, would require each firm to make additional calculations and predictions of rivals’ actions. Firms would have to reach a consensus on price spreads between differentiated products. See id. at 896.
87. Frequent small sales enable firms to establish credibility of retaliation easily by repeatedly matching lower prices. Sales of small dollar amounts aid in creating interdependence by decreasing the gains to be made from cheating. A firm would have to cheat on a large
ers,\(^8\) (5) good information concerning rivals' prices (e.g. posted prices, availability of price, or quantity information through reporting services),\(^9\) (6) a single delivered price,\(^0\) (7) barriers to entry,\(^1\) and (8) firms competing in multiple product or geographic markets.\(^2\) Not all of these conditions must be present for collusion, tacit or overt, to occur. Indeed, tacit collusion appears to have occurred in an industry with a highly customized product, very infrequent large sales, and mostly large buyers.\(^3\)

In order to consider how the theory of interdependence fits into cartel theory, it is helpful to conceptualize both theories in the following manner. Assume that a market with interdependent firms is at one end of the spectrum and a competitive market is at the other end. In between, markets may contain some of the necessary conditions for interdependence to exist. It would be easier for firms to form an overt cartel in these intermediate markets than in a competitive market. The Sherman Act prohibits such an agreement, however, and as a result, the degree of certainty of rivals' actions necessary to attain a noncompetitive price is not present. Although the portion of sales to make cheating profitable, thereby increasing the chance of detection. See Clark, supra note 4, at 898-99.

88. Big buyers may have power of their own and may be able to pay off suppliers to keep prices down.

89. Good information concerning competitors' actions allows oligopolists to insure that cheaters can be retaliated against rapidly. See Clark, supra note 4, at 900-01.

90. The single delivered price contributes to interdependence because where f.o.b. prices and delivered prices exist simultaneously, firms may be able to hide price cuts by giving discounts on transportation. See Shenefield, Antitrust Division Memorandum on Identification and Challenge of Parallel Pricing Practices in Concentrated Industries, Antitrust & Trade Reg. Rep. (BNA) No. 874, at F-2 (July 27, 1978) (citing examples of cases dealing with price standardization such as “delivered price systems” and “standard freight rates”).

91. Barriers to entry must be present to prevent more firms from entering the industry, and thereby destroying the conditions necessary for interdependence to exist. See Clark, supra note 4, at 899.

92. When firms compete in multiple product or geographic markets, they are better able to establish reputations which makes signaling more understandable and reciprocity more likely. Where the number of interactions between firms is large, it is easier for cooperative, noncompetitive outcomes to emerge. See R. Axelrod, supra note 84, at 129-32 (discussing the enhancement of cooperation through increased interaction); see also Posner, supra note 69, at 1574 (suggesting that interdependent pricing could result without collusion where only three producers are selling a completely standardized product to a multitude of small buyers); MERGER GUIDELINES, supra note 20, at 20,563 (noting that factors which tend to increase chances of tacit or overt collusion are high market concentration and entry barriers, homogeneous products, good price information flow, and frequent sales in which dollar amounts are small).

law clearly forbids contracts expressly creating cartels, contracts as well as other devices, may be used, either consciously or inadvertently, to create the sufficient certainty necessary to transform an intermediate market into a market with interdependence. These contracts and other devices are termed facilitating practices, and are discussed in detail in the next section.

B. Theory of Facilitating Practices

Certain practices can move oligopoly markets with barriers to entry closer to interdependence. These practices are often called "facilitating practices," and move oligopoly markets closer to a condition of interdependence by producing one of two effects—information exchange or incentive management. Although particular practices often combine elements of both information exchange and incentive management, it is useful to distinguish between them.

Information exchange facilitates both explicit and tacit coordination by oligopolists through eliminating uncertainty about competitors' actions. Examples of information exchanges include interseller price verification of price quotations and advance notice of price changes. An example of interseller price verification of price quotations occurred in United States v. Container Corp. of America, where the Court inferred an agreement by manufacturers to inform competitors, if asked, of price quotes made to particular customers. An example of advance notice of price changes occurred in In re Ethyl Corp., where defendants announced price increases through the newspaper. In the situations of both interseller price verification and advance notice, the exchange of information elimi-

94. See Salop, supra note 7, at 265. Facilitating practices also assist parties in agreeing to and reaching the cartel price. See id. at 271-73 (discussing facilitating practices).
95. Facilitating practices are those business practices which companies can adopt unilaterally, and which can increase the likelihood of anticompetitive results. 6 P. Areeda, supra note 8, ¶ 1436a, at 237; see also Salop, supra note 7, at 271-273 (defining "facilitating practices" as conscious or fortuitous means to implement restructured pay-offs that facilitate the achievement and maintenance of the cooperative result).
96. Salop, supra note 7, at 271.
97. Id.
98. Id.
99. Id.
101. Id. at 336-37.
103. 101 F.T.C. at 626-28.
nates lags in the detection of cheating and allows cartel members to react more rapidly.\textsuperscript{104} By allowing faster reaction, the information exchange makes cheating less profitable, and, therefore, makes it easier to achieve and maintain the cartel price.\textsuperscript{105} Additionally, the advance notification of price changes eliminates the risk that the price leader will lose profits while it is ahead of the pack.\textsuperscript{106}

In oligopoly markets, the incentive management role of facilitating practices is to directly alter incentives, which can be accomplished in two ways.\textsuperscript{107} A facilitating practice may be adopted because it alters the payoffs to competitors of various types of conduct.\textsuperscript{108} Similarly, a firm may change its own incentives from matching price changes to initiating such changes. The best example of the incentive management device would be a penalty for discounts.\textsuperscript{109} For example, suppose manufacturers have contracts with buyers which require a specific payment to those buyers if the manufacturer offers discounts to other buyers on subsequent sales. That penalty payment makes it more expensive for the manufacturers to cut price, and, therefore, alters the incentives to offer those discounts.

C. Competitor-based Formula Pricing Clauses as Facilitating Devices

Competitor-based formula pricing clauses are capable of facilitating collusion between sellers as well as buyers. They do so by exerting both information exchange and incentive management effects in a variety of ways depending upon the type of clause in question. The clauses, however, are able to exert such effects only in instances where they alter the incentives of buyers or sellers in price setting. For example, in a competitive market, where buyers and sellers are price takers, an individual firm or a small group of firms cannot affect price and the clauses can have no anticompetitive effect. In oligopoly markets with barriers to entry, on the other hand, when an individual seller or a small group of sellers can cause prices to rise by restricting output or where an individual buyer or a small group of buyers can cause prices to fall by restricting purchases, the

\textsuperscript{104} Salop, supra note 7, at 271.
\textsuperscript{105} Id. at 271-72.
\textsuperscript{106} See id.
\textsuperscript{107} Id. at 272.
\textsuperscript{108} Id.
\textsuperscript{109} Id.
clauses can have an anticompetitive effect. Accordingly, it is under these conditions that the competitor-based formula pricing clauses will be analyzed.\textsuperscript{110} Although there are numerous variants, only two types of clauses will be analyzed: (1) clauses that peg the contract price to the spot market, and (2) most-favored-nation clauses (MFNs).\textsuperscript{111} This analysis is followed by a discussion describing some formal economic models and experiments concerning various competitor-based formula pricing clauses.

1. Spot Market Price Clauses.— In industries that have spot markets, or some type of central market exchange, long-term contract prices may be tied to spot market prices. Such arrangements can permit market forces to influence the non-market transactions occurring under long-term contracts, and simultaneously to maintain the parties’ incentives to behave efficiently.\textsuperscript{112} Where, however, one of the parties to the contract can affect price through individual action, moral hazard problems arise.\textsuperscript{113} The facts of \textit{United States v. Socony-Vacuum Oil Co.}\textsuperscript{114} illustrate this phenomenon.

In \textit{Socony-Vacuum Oil Co.}, the defendant major oil companies (the “Majors”) maintained long-term supply contracts with wholesalers, which pegged the price of any particular oil shipment to the prevailing spot market price.\textsuperscript{115} The Majors also sold gasoline on a

\begin{itemize}
\item 110. The use of these clauses by a monopolist is beyond the scope of this Article.
\item 111. The framework for analyzing other competitor-based formula pricing clauses should be identical, although working through the details of the analysis for some could be much more intricate than the examples which follow in the text. A skeletal outline of the difficulties in analyzing meeting competition clauses should confirm this conclusion.
\item In many industries where MCCs are pervasive, it is common for buyers to deal with multiple suppliers, and it is usually the case that suppliers deal with numerous buyers. Additionally, buyers often have MFNs as well as MCCs. Under these circumstances, if one seller offers a lower price to a particular customer (i.e. not to all of its customers), that customer will then demand a lower price under the MCCs it has with other suppliers. If another buyer has an MFN in its contract with one of those other suppliers, that supplier will then have to lower its price to the second customer. And if that customer has an MCC with the first supplier, that supplier will then have to lower its price to this customer as well. Evidently, the exact incentives created by these contract clauses vary greatly depending on who has which kinds of clauses and which customers deal with which suppliers. In general, however, a selective price cut can come back to haunt a supplier under these circumstances. The fact that a selective price cut to one customer may require similar cuts to some or all of the firm’s remaining customers increases incentives not to make the price reductions in the first place.
\item 112. \textit{See supra} note 56 and accompanying text.
\item 113. \textit{See supra} note 39 and accompanying text.
\item 114. 310 U.S. 150 (1940).
\item 115. \textit{Id.} at 193-94. To be precise, no central exchange existed. Rather, the spot price was defined based on an average quote appearing in a trade journal. \textit{Id.} This distinction, however, is insignificant for the purposes of this Article.
\end{itemize}
spot basis, although most of the spot sales were made by independent refiners. In the early 1930's, the supply of oil was so great that market prices were less than the out-of-pocket cost of production. Yet production could not be abandoned because, once production ceased, surface changes would have made it difficult or impossible to bring wells back into production. Since the refiners did not have regular outlets for their gasoline, they had to sell on the spot market at "distress" prices, which brought spot prices to extremely low levels. As a result, the Majors received low prices for their gasoline sold under long-term contracts as well as for that gasoline sold on a spot basis.

To remedy the situation, the Majors conspired with each other to purchase gasoline from the independent refiners at the "fair going market price." Each of the Majors was assigned a "dancing partner," an independent refiner or group of independents from which to purchase distress gasoline. Through these purchases, the Majors succeeded in raising the spot market prices and, as a result, the prices they received from their wholesalers under the long-term contracts also increased.

The Majors had to conspire in order to raise the spot market price. The spot market was most likely relatively competitive as there were many sellers and buyers, none individually constituting a substantial share of the market. Accordingly, no one refiner or small group of refiners could significantly influence the prevailing price and a conspiracy to manipulate prices was necessary to bring about the desired effect. Under such circumstances, the competitor-based formula pricing clauses alone would not have been anticompetitive. It was the conspiracy among the competing oil companies, not the clauses in those companies' customer contracts, that was the predominant cause of the increase in prices.

Suppose the facts were slightly altered. Assume the Majors accounted for a significant percentage, for example, ninety percent, of

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116. Id. at 194 n.39.
117. Id. at 171.
118. Id. at 170.
119. Id. at 171-74.
120. See id.
121. Id. at 180.
122. Id. at 179-81.
123. Id. at 195-97.
124. Id. at 198-200.
125. See id. at 169.
sales made on a spot basis, and that there were only three major oil companies, each with thirty percent of the market. Assume further that barriers to the entry of new competitors were high. Under such circumstances, the spot market would come close to approaching the conditions necessary for interdependence: few firms would control most of the production of a relatively homogeneous product, and transaction prices would be widely and rapidly known within the industry. Under such conditions, each of the major oil companies might be able to raise the market price by restricting its output because each firm accounts for a large percentage of total market production. In addition, cheating would be relatively easy to detect because the product is homogeneous, and increases in output would cause an immediate and obvious price decrease. These conditions, however, might not be sufficient to permit pricing at supracompetitive levels because the incentives to cheat could still be too great.

Next, consider the sales occurring under long-term contracts containing competitor-based formula pricing clauses that peg the contract price to spot market sales. Each major oil company would have a significant amount of sales taking place pursuant to these contracts in which the price is governed by the spot market price. Thus, if the spot price were to rise, the Majors would stand to benefit substantially because contract prices would also rise. In essence, the presence of these clauses adds to the previously existing incentive of the Majors to restrict output in the spot market. Any benefit that previously accrued from restricting output in the spot market would be now increased, by a factor representing the additional gain resulting from the increased long-term contract prices. In addition, the gains from cheating would be lessened. A company that expands output will cause spot prices to drop and, as a result, the company will receive lower prices from its wholesalers who are already under contract.

Therefore, competitor-based formula pricing clauses would create both incentive management and information exchange effects. Incentive management effects would occur because the clauses directly alter the payoff to each of the Majors from restricting or expanding output. Information exchange effects would be present because each seller knows its rivals are less likely to cheat as a result of the clauses. Depending on the market structure and the strength

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126. See Salop, supra note 7, at 271-72. To the extent that each company realizes that the incentives of its rivals are altered, the incentive to restrict output is even greater because it is more likely that rivals will follow suit. Id.
of the incentives, supracompetitive pricing may be achieved without the need for any overt collusion. The clauses are able to have such an effect because the competitor-based formula pricing clause relies on an index, namely, the spot market price, to determine the contract price. This index can be influenced by the action of individual or small groups of sellers. Since the spot market price index is under the control of the sellers, a moral hazard problem is created and the sellers' incentives are improperly altered.

Whether supracompetitive pricing results depends on the extent to which an individual producer or group of producers can affect price and on the magnitude of the incentive to restrict output caused by clauses. Both of these factors are interrelated. For firms that are almost interdependent, incentives must only be slightly altered. The further firms are from interdependence, however, the more incentives must be altered to permit interdependent pricing. Thus, there can be no hard and fast rules to determine when the clauses will produce an anticompetitive effect.

2. Most-Favored-Nation Clauses.— In industries where no central exchange or spot market is available, prices paid to the seller or prices paid by the buyer may suffice as a proxy for the market price. This method is manifested in the use of most-favored-nation clauses. Generally, these clauses only allow the contract price to fluctuate in one direction because the shifting of risk is usually involved. For ease of exposition, however, this Article first considers the case where the price for any shipment under the contract is the most recent price offered by the seller to another buyer. That is, price can fluctuate either upward or downward depending on prices offered by the seller to other buyers.

Once again, the Socony-Vacuum Oil Co. hypothetical proves helpful. Assume a market where some sales are made on a spot basis, but no central exchange exists and transactions prices are not readily available. All other sales are made under long-term contracts

127. See Boise Cascade Corp., 91 F.T.C. 1 (1978), rev'd on other grounds, Boise Cascade Corp. v. FTC, 637 F.2d 573 (9th Cir. 1980). It should be noted that anticompetitive effects are possible where less than all firms use the clauses. Depending on the degree of interdependence already existing in the market, anticompetitive effects should be theoretically possible where 50% or less of the market is subject to the clauses. Boise Cascade, for example, involved plywood manufacturers who accounted for approximately 50% of southern plywood production. Id at 14. Nonetheless, they adopted a freight pricing scheme which resulted in anticompetitive pricing behavior. Id. at 73-76.

128. Generally, when a firm’s market share is great and the elasticity of demand for its product is small, the firm has an enhanced ability to affect price by altering its output.
which tie the contract price to the most recent spot price paid by the seller. As previously assumed, there are three large sellers, each with thirty percent of all wholesale gasoline revenues.

The long-term contract price is again based on an index over which the seller maintains some control. Accordingly, moral hazard problems arise here as well. Since the long-term contract price depends on those sales made on a spot basis, the seller has an added incentive to restrict production in spot sales. In addition, since increased sales on a spot basis can cause lower prices under both those transactions and the long-term contracts, the seller has an added incentive not to increase sales made on a spot basis. In essence, the effect on seller incentives is the same under this scenario as under the example in which the contract price is tied to the spot market.

Next, consider the more typical MFN clauses where risk shifting occurs. Assume that the wholesalers are risk averse and want to avoid future price increases, but still desire the benefits of future decreases. Under such an arrangement, an initial contract price is agreed upon and, in addition, the seller promises to lower the contract price should he offer a lower price to a subsequent buyer.

As with the previous example, the seller maintains control over the index upon which the contract price is based and similar moral hazard problems result. In this example, however, the long-term contract price can fluctuate only in one direction, downward. That is, when the seller restricts output and the prevailing price rises, there is no concurrent effect on buyers who are already bound by long-term contracts. Thus, this MFN provides no additional incentives to restrict output. However, since the lowering of initial prices to new long-term purchasers or the lowering of prices to short-term purchasers will simultaneously result in lower prices for those buyers who are already subject to long-term contracts, the increased incentive not to lower price and expand output remains. Thus, this MFN provides additional incentives to resist an expansion of output, but not direct incentives to contract output from the current level.

Therefore, supracompetitive prices generally could result from this type of MFN where costs decline or if another mechanism facilitates a price increase. It is possible, however, that the existence of MFNs will also make firms more likely to raise prices above competitive levels. If MFNs increase the likelihood that a price increase will

129. Risk shifting can similarly occur under contracts pegging the contract price to the spot market. The analysis is generally the same as for MFNs. See supra note 111.
be followed, then firms may be more likely to attempt price increases in the presence of MFNs. The MFN’s ability to raise prices to, or maintain prices at, supracompetitive levels will depend on the two interrelated factors: (1) the magnitude of the incentive not to cut prices caused by the MFN, and (2) the level of interdependence inherent in the existing market structure.

3. Formal Economic Models and Experiments.— Even though the use of competitor-based formula pricing clauses is widespread, there has been little economic research on their effects. The little work that has been done in this area unanimously indicates that the clauses can facilitate coordinated pricing above competitive levels. I am aware of two papers establishing formal economic models within which to analyze most-favored-nation clauses, and one paper establishing a formal model for meeting competition clauses. In addition, some experimental research has been done which reaches similar conclusions.

Professors Holt and Scheffman have created a model based on the Ethyl case. Their model provides for a homogeneous product, most-favored-nation clauses, meet or release clauses, and advance price announcements. They conclude that the use of these competitor-based formula pricing clauses in this context can result in list and transactions prices that are significantly above the competitive level.

Professor Cooper models a duopoly with differentiated products. He demonstrates in this context that MFNs, even if adopted by only one firm, can raise price above the competitive level and generate monopoly profits for both firms.

Terrence Belton examines MCCs and, more generally, competitor-based formula pricing clauses. He also models a duopoly with differentiated products and concludes that the use of these clauses by only one firm can raise price above competitive levels under certain

133. See Holt & Scheffman, supra note 130, at 188.
134. Id.
135. Id. at 195-96.
137. Id. at 387.
138. Belton, supra note 131.
Professors Grether and Plott conducted laboratory experiments using students and businessmen to simulate buyers and sellers in a market similar to that present in *In re Ethyl Corp.* In their experiments, buyers and sellers were constrained by most-favored-nation clauses and other market characteristics of the anti-knock compound industry. The experiments yielded results showing prices significantly above the competitive level and much higher than prices occurring under control conditions. Under control treatment, MFNs, delivered pricing, and advance announcement were eliminated and prices remained very close to the competitive levels.

Thus, there is support in economic theory and through economic laboratory experiments for the conclusion that competitor-based formula pricing clauses can facilitate pricing above competitive levels. The work done to date indicates that the clauses are capable of having anticompetitive effects in duopolies or oligopolies, which is consistent with the present analysis.

4. Externalities: Why Buyers Desire Competitor-based Formula Pricing Clauses.—The previous section concluded that under certain conditions competitor-based formula pricing clauses can have significant anticompetitive effects. If buyers are aware of these possible effects, then why do they consent to the clauses? The answer lies in the fact that the clauses create externalities. In other words, the clauses impose a cost on third parties that the contracting parties do not fully consider when executing their contract.

Each individual buyer may desire the clauses for several possible reasons—risk sharing, delay of consumer search, and protection against competitive disadvantage. Consumers will desire the clauses

139. Id. at 29-30.
142. Id.
143. Id.
144. At least one empirical study of most-favored nation clauses has been done suggesting that, *on balance*, the clauses are efficiency enhancing. See Mulherin, *supra* note 34, at 113-15. Mulherin hypothesizes that the larger the number of pipelines, the more difficult it is to collude and the more facilitating practices are necessary for collusive pricing to result. *Id.* at 113. Mulherin then suggests that the most-favored-nation clauses would appear more often in less concentrated markets if market power were the primary explanation for their existence. He ultimately rejects that conclusion, however, since the clauses are more prevalent in markets with higher concentration. *Id.*
145. *See supra* notes 130-44 and accompanying text.
for these reasons even in light of the fact that industry-wide use of the clauses has the effect of raising prices. The reason that buyers consent to or even pay for the clauses, in spite of the anticompetitive effect, is that the individual contracting buyer feels only a small part of that cost. When a buyer adopts the clause, he insures himself against price reduction and prevents competitors from obtaining better prices.

At the same time, adopting the clause hurts the contracting buyer by putting the industry on the road to market-wide adoption of the clauses and high prices. That harm, however, is mostly an external cost—it affects the market as a whole and is spread over all buyers. The buyer adopting the clause only incurs a small part of the cost and receives all of the benefits from risk sharing and protection from competitive disadvantage.

Moreover, the clauses only have an anticompetitive effect when a sufficient number of buyers and sellers adopt the clauses. Thus, for the buyers who enter into contracts containing the clauses early on, the possibility of an anticompetitive effect is remote while the benefits from the clauses are immediate. For buyers adopting the clauses where they are already in use by a significant percentage of the market, the need to insure against paying higher prices than their competitors, who are already afforded the protection by the clauses, may compel these subsequent buyers to adopt the clauses for insurance against competitive disadvantage, in spite of the anticompetitive effect. Additionally, it is difficult for individual buyers to determine the number of buyers who must adopt the clauses in order to create the necessary degree of interdependence.

The problem could be resolved if the buyers could get together and agree to refrain from entering into contracts with competitor-based formula pricing clauses. However, transaction costs and the presence of free-rider problems prevent the viability of such agreements. The buyers may feel that competitor-based formula pricing clauses, absent anticompetitive effects, provide the best method to achieve the desired goals, and since it is not necessary for every buyer to join the agreement in order to prevent an anticompetitive result, each buyer will have an incentive to adopt the clause and let every other buyer refrain from adopting the clause. That is, each buyer has an incentive to “free-ride” on the other buyers. Thus, the individual contracting buyer will adopt the clause since the benefits to him exceed the costs.
This Section discusses whether contracts containing competitor based formula pricing clauses unreasonably restrain trade in violation of section 1 of the Sherman Act.\footnote{146} To prove a violation of the Sherman Act, the plaintiff must demonstrate the existence of an agreement\footnote{147} and that the anticompetitive effects of that agreement outweigh the procompetitive effects.\footnote{148} The agreement requirement can be satisfied by proving a horizontal agreement between competitors.\footnote{149} In some cases, the existence of a vertical contract will suffice.\footnote{150}

As a general matter, it is not possible to prove a horizontal agreement with respect to the use of competitor-based formula pricing clauses, since the clauses facilitate collusion and create efficiencies at the same time.\footnote{151} The vertical contract between the buyer and seller, however, should meet the agreement requirement, although some may argue that a horizontal contract or conspiracy is necessary.\footnote{152} In addition, the possibility of deeming interdependent pricing itself as the agreement, a suggestion made by Judge Posner\footnote{153} and Professor Turner,\footnote{154} is examined.\footnote{155} The analysis then proceeds to the rule of reason, concluding that under certain conditions the

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\footnote{146}{15 U.S.C. § 1 (1982).}
\footnote{147}{E.g. United States v. Container Corp. of America, 393 U.S. 333, 335 (1969).}
\footnote{148}{National Soc'y of Professional Eng'rs v. United States, 435 U.S. 679, 688-89 (1978); United States v. Realty Multi-List, Inc., 629 F.2d 1351, 1370 (5th Cir. 1980). The requirements outlined in the text compose what is known as the rule of reason analysis. See id. In contrast to that approach, the courts have determined that some business relationships are \textit{per se} violations of the Sherman Act and do not require a consideration of their procompetitive and anticompetitive effects. See, e.g., United States v. Topco Assocs., 405 U.S. 596, 607 (1972). The rationale for the \textit{per se} rule is that certain agreements have severe anticompetitive effects and little or no redeeming value. Thus, rather than waste the court's resources with consideration of costs and benefits of the agreements, they are conclusively presumed to be unreasonable restraints. \textit{Id.} It is, however, only after considerable experience with a type of agreement that courts classify them as \textit{per se} violations. See \textit{Id.} at 607-08. Courts should be expected to use the rule of reason analysis and not classify agreements as \textit{per se} violations, since courts have not had significant exposure to competitor-based formula pricing clauses and the clauses generally have redeeming value. Additionally, the clauses provide efficiencies in many cases and should not automatically be presumed to be anticompetitive.}
\footnote{149}{See Topco Assocs., 405 U.S. at 609.}
\footnote{150}{See FTC v. Motion Picture Advertising Serv. Co., 344 U.S. 392, 395 (1953).}
\footnote{151}{See infra notes 158-68 and accompanying text.}
\footnote{152}{See infra notes 175-205 and accompanying text.}
\footnote{153}{See Posner, supra note 69, at 1575, 1605.}
\footnote{154}{See Turner, supra note 83, at 667.}
\footnote{155}{See infra notes 169-74 and accompanying text.}
PRICING CLAUSES

clauses do violate the Sherman Act.\textsuperscript{156}

A. Agreement Requirement

Assuming there is no direct evidence of a horizontal agreement between sellers (to assume otherwise would be to assume away the problem), a plaintiff must prove a horizontal agreement by inference,\textsuperscript{157} or by demonstrating that the vertical contract between the buyer and the seller is sufficient for Sherman Act purposes. The case of horizontal agreement is addressed first.

1. Horizontal Agreement.— A strong inference of horizontal conspiracy is created where parallel conduct (the adoption of the clauses in this case) is contrary to the independent self-interest of those engaging in the parallel conduct.\textsuperscript{158} Indeed, some courts have held that this factor alone is sufficient to survive a motion for directed verdict.\textsuperscript{159} Other courts have required a showing that the parallel action is contrary to independent self-interest and, in addition, that a motivation to enter the agreement be present.\textsuperscript{160} Other factors, termed "plus factors," may add to the inference of an agreement.\textsuperscript{161} These include the presence of a highly concentrated market,\textsuperscript{162} meetings between industry leaders,\textsuperscript{163} certain types of price information exchanges,\textsuperscript{164} raising price when surplus exists,\textsuperscript{165} identi-

\textsuperscript{156} See infra notes 206-13 and accompanying text.
\textsuperscript{157} See United States v. Container Corp. of America, 393 U.S. 333, 335 (1969); id. at 340 (Marshall, J., dissenting); American Tobacco Co. v. United States, 328 U.S. 781, 808-10 (1946).
\textsuperscript{158} Milgram v. Loew's, Inc., 192 F.2d 579, 583 (3d Cir. 1951), cert. denied, 343 U.S. 929 (1952).
\textsuperscript{161} E.I. DuPont De Nemours & Co. v. FTC, 729 F.2d 128, 139 n.10 (2d Cir. 1984); Wilcox Development Co. v. First Interstate Bank, 1985-1 Trade Cas. (CCH) ¶ 66,412, at 65,059 (D. Or. 1985).
\textsuperscript{162} See Morton Salt Co. v. United States, 235 F.2d 573, 577 (10th Cir. 1956). The Tenth Circuit observed that "the presence of only a few friendly sellers and the stable demand for the product present a great opportunity and temptation to combine to maintain prices at an artificially high level profitable to all." Id.
\textsuperscript{164} See United States v. United States Gypsum Co., 438 U.S. 422, 441 n.16 (1978). In markets with many sellers, the exchange of price information may reduce the dispersion of
cal price responses to increased and decreased competition, and artificially standardizing the product. For purposes of this analysis, however, no “plus factors” other than the existence of the clauses are assumed. Thus, a plaintiff would have to demonstrate that use of the clauses is contrary to each firm’s independent self-interest. In some cases, claims that the firm adopted the clause because of legitimate business reasons may not be possible. In such instances, the use of the clauses would be deemed by the courts contrary to independent self-interest and a conspiracy would be inferred. However, since there are generally several substantial and legitimate business reasons for adopting the clauses, the mere fact that the clauses exist in a contract is not sufficient evidence by which one could infer that a horizontal agreement exists. Due to the presence of the externality, it is in the self-interest of both buyers and sellers to adopt the clauses despite their anticompetitive effects. Thus, the plaintiff would not be able to show that adoption of the clauses alone is contrary to independent self-interest.

2. Interdependence as Horizontal Agreement.— Two prominent

prices caused by inadequate knowledge, and, therefore, improve competition. Where there are few sellers, however, it is easier to keep tabs on the pricing of rivals, lessening the problem of inadequate knowledge. Therefore, the inference that the exchange of price information is sought to facilitate collusion is stronger in markets with few sellers. R. Posner, Antitrust Law: An Economic Perspective 65-66 (1976).

165. See C-0 Two Fire Equipment Co. v. United States, 197 F.2d 489, 497 (9th Cir.), cert. denied, 344 U.S. 892 (1952). General microeconomic theory dictates that in competitive markets, prices should decline in the presence of a surplus. Thus, a price rise when a surplus exists may imply manipulation of normal market forces.

166. See American Tobacco Co. v. United States, 328 U.S. 781, 805-07 (1946). A note of caution is appropriate here. Economists generally expect firms to respond to short-run excess capacity by lowering price to short-run marginal cost. Thus, it may be a legitimate competitive response to lower price when new or existing competitors expand their output and create excess capacity. Moreover, when excess capacity is reduced through exit or a reduction in output, price would be expected to move back toward average total cost. Thus, unless the price cuts persist into the long run, this behavior may be entirely legitimate business conduct. Although short-run marginal cost may be greater than long-run marginal cost under some circumstances, this is usually not the case where excess capacity exists. Capital must be replaced in the long run, even if it is costless in the short run due to the existence of excess capacity. Short-run considerations, on the other hand, generally involve only variable costs.

167. R. Posner, supra note 164, at 59-60. It is easier to agree on price for homogeneous products. If products in a particular market differ greatly—custom made items, for example—it will be impossible to agree on a single price that would apply to all orders. The sellers would have to agree on a complex formula to account for the differences, which is difficult to do without overt agreement. Id. Additionally, cartel members would have problems detecting cheaters because of the uncertainty of the proper cartel price. Id. at 60. As a result, artificial standardization may indicate an attempt to form cartels. Id.

antitrust scholars, Judge Posner and Professor Donald Turner, have approached the question of horizontal agreement from a slightly different perspective. Judge Posner argues that interdependent pricing is itself an agreement for Sherman Act purposes. He observes:

It must be emphasized that tacit collusion is not an unconscious state. If the firm’s sales manager recommends that the firm offer a wider variety of products in order to exploit consumer demand more effectively, and the financial vice president recommends against that course on the ground that it will make it more difficult for the industry to maintain ‘healthy’ prices, the president can be in no doubt of the significance of his actions if he adopts the financial vice president’s recommendation.¹⁶⁹

Judge Posner concludes that this approach is consistent with precedent since evidence of high profits and market power should merely be used as plus factors to infer a conspiracy.¹⁷⁰

Professor Turner also concludes that interdependent pricing constitutes an agreement, but he would not deem the agreement unlawful.¹⁷¹ He argues that interdependent pricing cannot practically be enjoined,¹⁷² and concludes that the only adequate relief is structural reformation of the industry, which indicates that the conduct of the firms was not at fault, but rather the industry structure itself.¹⁷³ He agrees, however, that interdependent pricing, accompanied by facilitating practices, should be unlawful and the facilitating practices should be enjoined.¹⁷⁴

Although an unlawful agreement could be inferred from interdependence accompanied by facilitating practices under these approaches, neither is completely satisfactory. Professor Turner suggests that an agreement may be inferred from interdependent pricing whenever it is accompanied by a facilitating practice that could be enjoined. However, where there is no agreement to engage in such practices, there seems to be no rational basis to conclude that there is an agreement among competitors distinct from the interdependent pricing itself.

Judge Posner’s approach is also unsatisfactory because interdependent pricing alone should be tolerated for the same reason that

¹⁶⁹. R. POSNER, supra note 164, at 74-75.
¹⁷⁰. Id. at 71-74.
¹⁷¹. See Turner, supra note 83, at 671-72.
¹⁷². Id. at 670.
¹⁷³. Id. at 669-71.
¹⁷⁴. Id. at 673.
monopoly pricing is tolerated by lawful monopolists. That is, since firms are encouraged to engage in competition so that only the efficient firms will survive and flourish, consumers will be able to purchase products at the lowest prices and best quality. If one firm is much more efficient than others in its production of goods, that firm should not be penalized for its success. Such a penalty would be a deterrent to competition generally, which is motivated by the possibility of obtaining high profits through production of better products. This policy should be no different if three firms, rather than one, achieve a higher level of efficiency and success in a particular market.

It is unwise, therefore, to infer that an agreement exists which violates the Sherman Act based on interdependent pricing alone. Furthermore, there does not appear to be a logical way to infer an agreement merely from unilaterally initiated practices that simultaneously generate efficiencies and offsetting anticompetitive effects.

3. The Vertical Contract as an Agreement.—Section 1 of the Sherman Act speaks explicitly to "contracts". It does not limit or qualify that term to mean only horizontal relationships. Many antitrust lawyers and scholars, however, associate the term "contract" in section 1 primarily with horizontal contracts or conspiracies. There is no apparent rational basis to limit application of the term in such a way, and, therefore, vertical contracts should meet the agreement requirement of section 1 as well.

Generally, vertical restraint cases under section 1 involve either some type of horizontal conspiracy or a monopoly. Usually either a conspiracy exists between two parties at the same level of production, or one of the parties is a monopolist or exercises market power. Most vertical restraint cases thus involve one of the two following scenarios: (1) a vertical contract which, in structural terms, resembles a hub with two or more spokes emanating from it, or (2) a vertical agreement where one of the parties exercises

175. 15 U.S.C. § 1 (1982); see supra note 2 (setting forth § 1 of the Sherman Act).
177. This possibility is suggested by Professor Areeda. See id. ¶ 1435 at 231-34.
178. See 7 P. AREEDA, supra note 8, ¶ 1437, at 3-6.
179. Id.
180. See Continental T.V., Inc. v. GTE Sylvania, Inc., 433 U.S. 36 (1977) (manufacturer imposed non-price territorial restrictions on dealers); Dr. Miles Medical Co. v. John D. Park & Sons Co., 220 U.S. 373 (1911) (manufacturer had resale price maintenance agreements with retailers); see also 6 P. AREEDA, supra note 8, ¶ 1402b4, at 15-16 (noting that
market power or where a combination of competitors monopolizes or exercises market power over a product.\textsuperscript{181} In the first scenario, the cases normally involve a horizontal conspiracy between companies at the ends of the spokes—for example, two distributors using the manufacturer to set retail prices. The second scenario involves monopoly power. This is not to say, however, that vertical arrangements, absent horizontal conspiracy or monopoly power in one of the parties, cannot unreasonably restrain trade in the same manner as horizontal combinations. Additionally, it cannot be assumed that a horizontal combination or monopoly is necessary to meet the agreement requirement of section 1.

Theoretically, it should make no difference whether one of the parties is a monopolist, whether two or more parties are on the same level of production, or whether neither is true. Rather, the significant fact is the existence of a contract creating anticompetitive effects. Furthermore, whether a particular contract causes anticompetitive results must be analyzed with the other conditions of the market as a constant or given. The Supreme Court’s most widely quoted formulation of the rule of reason provides:

\begin{quote}
Every agreement concerning trade, every regulation of trade, restrains. To bind, to restrain, is of their very essence. The true test of legality is whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition. To determine that question the court must ordinarily consider the facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable.\textsuperscript{182}
\end{quote}

Courts, therefore, should ask whether a contract is anticompetitive given the other conditions in the market. This should include the existence of similar contracts made by competitors with their own customers or suppliers.\textsuperscript{183}


\textsuperscript{182} Id. (emphasis added).

\textsuperscript{183} I am aware of no policy basis for limiting agreements for Sherman Act purposes only to horizontal relationships. Although arguments have been made in favor of the agreement requirement itself, see E.I. Dupont De Nemours & Co. v. FTC, 729 F.2d 128, 140-41 (2d Cir. 1984); 6 P. AREEDA, supra note 8, ¶ 1402a, at 9-12, those arguments are equally...
Two Supreme Court cases are particularly instructive. In *FTC v. Motion Picture Advertising Serv. Co.*,\(^{184}\) the defendant produced and distributed advertisement films to be shown in movie theaters in twenty-seven states.\(^{185}\) Defendant had contracts with the theater owners that ran for up to five years, and many contracts prohibited the contracting theater from displaying any other advertising films.\(^{186}\) The defendant’s exclusive contracts tied up forty percent of the market; the contracts of other distributors foreclosed another thirty-five percent of the market.\(^{187}\) The Court found that the industry-wide practice of exclusive contracts that had “sewed up a market so tightly for the benefit of a few falls within the prohibitions of the Sherman Act” and was therefore a violation of the Federal Trade Commission Act.\(^{188}\) The Court did not mention conspiracy between the purchasers of the films. The Court, in finding illegality, relied on the existence of similar contracts which foreclosed an additional thirty-five percent of the market.\(^{189}\) Without this additional foreclosure, the defendant’s contracts would not have had a sufficient effect to constitute a violation of the Sherman Act.

In *Standard Oil Co. v. United States*,\(^{190}\) Standard Oil, the largest seller of gasoline in the western United States, maintained exclusive dealing contracts with independent service stations requiring them to exclusively sell Standard Oil’s gasoline.\(^{191}\) These contracts tied up only sixteen percent of retail outlets in the market.\(^{192}\) However, other producers, as well as company-owned service stations, were parties to similar exclusive dealing contracts.\(^{193}\) As a result, only 1.6 percent of the retail outlets were “split pump.”\(^{194}\) The Court found that Standard Oil’s contracts violated section 3 of the Clayton

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applicable to vertical contracts.

185. *Id.* at 393.
186. *Id.*
187. *Id.*
188. *Id.* at 395. Although the majority opinion clearly found no need for a horizontal conspiracy to support the § 1 violation, Justice Frankfurter, in his dissent, argued that the vertical contracts were not sufficient and that a horizontal conspiracy among the film distributors was necessary. *Id.* at 399-400 (Frankfurter, J., dissenting). It should be noted that although the case was brought under the FTC Act, the Court found illegality based on a violation of the Sherman Act. See *id.* at 395.
189. *Id.* at 393.
190. 337 U.S. 293 (1949).
191. *Id.* at 295-96.
192. *Id.* at 295.
193. *Id.*
194. *Id.*
Act and emphasized the importance of similar contracts by Standard Oil's competitors:

When it is remembered that all the other major suppliers have also been using requirements contracts, and when it is noted that the relative share of the business which fell to each has remained about the same during the period of their use, it would not be farfetched to infer that their effect has been to enable the established suppliers individually to maintain their own standing and at the same time collectively, even though not collusively, to prevent a late arrival from wrestling away more than an insignificant portion of the market.196

Although this case involved the Clayton Act, one can see that the analysis is identical to that of *Motion Picture Advertising* which found a section 1 violation for a similar type of conduct.197

In addition, it is axiomatic that vertical agreements may be struck down because of their horizontal effect, as established by the Supreme Court in *Dr. Miles Medical Co. v. John D. Park & Sons Co.*198 The Dr. Miles Company manufactured a proprietary medicine and fixed the wholesale and retail prices to prevent department stores from selling the product at discount prices.199 The company did so through its contracts with wholesalers, and through wholesalers' contracts with retailers.200 The cut-rate prices allegedly confused customers and injured Dr. Miles' reputation.201 The Court struck down Dr. Miles' system of contracts and noted that since these vertical contracts with wholesale and retail dealers established a horizontally fixed price, Dr. Miles could have fared no better with its plan of identical contracts than the dealers themselves would have had they formed a combination and endeavored to establish the same restrictions—all to achieve the same price-fixing results by agreements with each other.202

195.  *Id.* at 309 (footnote omitted).
196.  344 U.S. 392 (1953); *see supra* notes 184-89 and accompanying text (discussing the case).
197.  *See* 2 P. Areeda & D. Turner, Antitrust Law ¶ 304a, at 6-7 (1978) (arguing that there should be no distinction between § 1 of the Sherman Act and § 3 of the Clayton Act); Twin City Sportservice, Inc. v. Charles O. Finley & Co., 676 F.2d 1291, 1303 (9th Cir.), *cert. denied*, 459 U.S. 1009 (1982).
198.  220 U.S. 373 (1911).
199.  *Id.* at 394.
200.  *Id.* at 396.
201.  *Id.* at 375.
202.  *Id.* at 407-08.
The difference between the contracts in *Dr. Miles Medical Co.* and contracts with a competitor-based formula pricing clause is that the latter may affect price at the manufacturer level, while the *Dr. Miles Medical Co.* contracts fixed price at the retail level. There is no reason, however, why this distinction should be material for purposes of this Article.

The *Dr. Miles Medical Co. per se* ban on resale price maintenance has been continually upheld.\(^\text{203}\) The cases have not questioned the concept that vertical contracts producing horizontal effects are within the reach of the Sherman Act. Nonprice vertical contracts have also been struck down,\(^\text{204}\) but are judged under the rule of reason approach.\(^\text{205}\) Thus, vertical contracts having horizontal effects in either the upstream or downstream market should meet the agreement requirement of section 1 of the Sherman Act.

**B. Rule of Reason Analysis**

The rule of reason requires us to examine the procompetitive and anticompetitive effects of the clauses to determine if they unreasonably restrain trade.\(^\text{206}\) Anticompetitive and procompetitive effects, however, are not always capable of being precisely identified and quantified. As a result, the courts apply appropriate economic theory to the evidence presented in order to reach a conclusion as to the likely actual effects in the case before them.\(^\text{207}\)

The clauses unreasonably restrain trade if their anticompetitive effects outweigh their procompetitive effects, and, therefore, the rule

\(^{203}\) See, e.g., California Retail Liquor Dealers Ass'n v. Mideal Aluminum, Inc., 445 U.S. 97, 102-03 (1980) (observing that "[t]his Court has ruled consistently that resale price maintenance illegally restrains trade . . . "); Continental T.V., Inc. v. GTE Sylvania, Inc., 433 U.S. 36, 51 n.18 (1977) (citing judicial and congressional approval of *per se* analysis in cases of vertical price restoration).

\(^{204}\) See Eiberger v. Sony Corp., 622 F.2d 1068, 1081 (2d Cir. 1980).

\(^{205}\) See *Continental T.V.*, 433 U.S. at 57-59; *Eiberger*, 622 F.2d at 1075.

\(^{206}\) See supra note 148 and accompanying text.

\(^{207}\) See United States v. Container Corp. of America, 393 U.S. 333, 337 (1969). In *Container Corp.*, the Court applied economic oligopoly pricing theory to the record to infer anticompetitive effects of interseller price verification. *Id.* at 335-38. The defendants agreed to tell competitors, if asked, price quotes made to particular customers. *Id.* at 336-37. The Court concluded that since this information exchange occurred in a highly concentrated market with homogeneous product and inelastic demand, "[t]he inferences are irresistible that the exchange of price information has had an anticompetitive effect in the industry, chilling the vigor of price competition." *Id.* at 337. The probability that the exchange of price information led to an unlawful effect on prices was adequately supported by the record. *Id.* at 339 (Fortas, J., concurring).
of reason requires a balancing of the clauses' effects.\footnote{United States v. Realty Multi-List, Inc., 629 F.2d 1351, 1374-75 (5th Cir. 1980).} Under this analysis, the benefits obtained from the clauses by buyers, sellers, and the economic advantages enjoyed by society as a whole must be considered. In contrast, when attempting to infer a horizontal agreement through an analysis of whether adoption of the clauses was contrary to independent action of the sellers, a consideration of the benefits to the seller was the only relevant concern.

In a competitive market that is not protected by entry barriers, competitor-based formula pricing clauses can have desirable efficiencies: (1) bringing the market forces to bear in nonmarket place transactions, (2) risk sharing, (3) maintenances of incentives to minimize cost, and (4) encouragement of earlier purchase due to elimination of the risk of price change. The spot market price and the prices charged by competitors provide an index that enables current market forces to influence prices set under long-term contracts, while still maintaining the proper economic incentives. The externalities created by the clauses have, at most, only a minor effect in such cases.

In contrast, in an oligopolistic market protected by entry barriers, the externalities may become significant when a substantial portion of the market becomes subject to these clauses. Under such circumstances, the economic properties of the clauses may change. If the clauses become widespread and the index comes under the control of one or a small group of parties, the externality may create a moral hazard problem which adversely alters the incentives for price competition. Since the competitor-based formula pricing clauses are designed to make long-term contract prices reflect the current competitive market place, that purpose would be frustrated in an oligopolistic market. If competition is not intense, the main purpose of the clauses would be frustrated because the index used to determine the contract price would not reflect a competitive market. Rather, the clauses would facilitate coordinated pricing without the necessity of a "smoke-filled room" conspiracy. Thus, the anticompetitive effects would nullify this justification for entering into the clauses.

Further, the value of other efficiencies produced by the clauses under competitive market conditions would be lessened in an oligopolistic market. Buyers, for example, may desire a meeting competition clause to protect against the possibility that prices will decline after the contract is executed. Since these clauses not only facilitate
maintenance of the current price level but also facilitate the achievement and maintenance of even higher price levels, the probability of a price decline would be decreased. Consequently, insurance against such price declines would be worth less.

With respect to the provision of insurance against competitive disadvantage, the value of the clauses would also be reduced in an oligopolistic market. Although competitors would each pay the same price for the product, they would pay a higher price than they otherwise would in the absence of the clauses. This increase in cost would be absorbed by the buyers themselves if they could not pass the cost increase to their customers. Alternatively, if the buyers raise prices, sales would decline unless demand for their product was perfectly inelastic.

When balancing pro and anticompetitive effects under the rule of reason, it is also appropriate to consider whether there are available alternative clauses that would exert a lesser restraint on competition. Indeed, there is a line of cases, beginning with United States v. Addyston Pipe & Steel Co., that suggests a restriction on competition can be upheld under the rule of reason only when it is reasonably necessary to the accomplishment of legitimate business goals. If less restrictive alternatives are available to satisfactorily accomplish the legitimate business goals at issue, it would seem that the restraint in question cannot be "reasonably necessary," and should be struck down. Other cases, however, suggest that use of the least restrictive alternative is not necessary to avoid condemnation under the Sherman Act, suggesting that the clauses would be lawful if they were "fairly necessary."

In the instant case, the same goals sought to be achieved by competitor-based formula pricing clauses—risk sharing, maintenance of incentives to minimize cost, and encouragement of earlier purchases—can be achieved through the use of a cost index clause, even in oligopolistic industries. The cost index clause, as discussed

209. 85 F. 271 (6th Cir. 1898), aff'd, 175 U.S. 211 (1899).
211. See Copper Liquor, Inc. v. Adolph Coors Co., 506 F.2d 934, 945-46 & n.6 (5th Cir. 1975); Siegel v. Chicken Delight, Inc., 448 F.2d 43, 51 (9th Cir. 1971), cert. denied, 405 U.S. 955 (1972).
212. See, e.g., American Motor Inns, Inc. v. Holiday Inns, Inc., 521 F.2d 1230, 1248-49 (3d Cir. 1975) (quoting Anderson v. American Automobile Ass'n, 454 F.2d 1240, 1246 (9th Cir. 1972)).
above, involves a price escalator provision which is triggered by a cost index that is not under the seller’s control, yet is highly correlated with the seller’s costs. These clauses are efficient since they allow the contracting parties, using cost as a proxy for price, to allocate the risk of price changes to the buyer and, simultaneously, maintain the seller’s incentive to minimize costs.

Although competitor-based formula pricing clauses take demand factors into account and accordingly provide a better proxy for the competitive market price in an unconcentrated industry, this distinction disappears in situations where the clauses facilitate supracompetitive pricing. The clauses do not properly account for demand factors in such situations because the creation of interdependence permits the sellers to raise price above the point at which demand equals marginal cost. As a result, competitor-based formula pricing clauses do not provide better proxies for the competitive market price than clauses based on cost indices in instances where supracompetitive pricing results.

In contrast to competitor-based pricing clauses, however, the economic properties of the cost index clause do not change in oligopolistic markets. The purpose of this clause is not frustrated. In oligopolistic markets the cost index escalator has superior properties since the index is not under the seller’s control and thus no adverse incentives are created. The seller, therefore, has a greater incentive to compete effectively. The cost index clause does not facilitate collusion, yet it provides the same benefits associated with competitor-based formula pricing clauses. In such case, competition-based formula pricing clauses cannot be deemed even “fairly necessary.” Accordingly, where competitor-based formula pricing clauses exert anticompetitive effects, those effects should swamp any procompetitive effects and the clauses should be struck down.\(^\text{213}\)

VI. THE ETHYL CASE

The only judicial body to correctly analyze competitor-based formula pricing clauses has been the Federal Trade Commission (FTC), with its treatment of MFNs in the *In re Ethyl Corp.*\(^\text{214}\) Al-
though the FTC evaluated *Ethyl* under the Federal Trade Commission Act and not the Sherman Act, its examination conforms to rule of reason analysis.216 Aside from the agreement requirement issue, the FTC's treatment of MFNs in *Ethyl* is consistent with the analysis proposed here.

In *Ethyl*, the FTC concluded that MFNs, when coupled with other facilitating practices, enabled producers of anti-knock compound to raise the prices above the competitive level.217 The FTC held that the use of the clauses in conjunction with delivered pricing and the advance announcement of price increases constituted a violation of section 5 of the Federal Trade Commission Act,218 and therefore enjoined the defendants from pursuing these practices.219 As discussed above, the FTC found a violation without ever attempting to argue that an agreement, in any form, existed between defendants.220

The FTC concluded that most-favored-nation clauses were shown to affect pricing behavior, as evidenced by the producer's use of the clauses as a rationale given to buyers for not offering lower prices.221 Moreover, internal company documents and testimony showed that DuPont and Ethyl, who accounted for seventy percent of industry sales, were each influenced in pricing behavior by the knowledge that the other used the clauses.222 Thus, the FTC found recorded evidence demonstrating that the MFNs exerted both incen-

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215. See *id.* at 593-94. In *Ethyl*, the FTC attempted to broaden its authority under § 5 of the Federal Trade Commission Act, 15 U.S.C. § 45 (1982 & Supp. V 1987). It had already been well settled that § 5 encompasses acts and practices that also violate the Sherman Act, and there was also considerable dictum that § 5 covers acts and practices not reachable under the Sherman Act. See *id.* at 593-99. The FTC attempted to make illegal under § 5 practices that restrain trade without even alleging the existence of an appropriate contract, combination, or conspiracy. See E.I. DuPont DeNemours & Co. v. FTC, 729 F.2d 128, 140 (2d Cir. 1984). The Second Circuit, in a less than compelling opinion, reversed the Commission primarily because there was no showing of an appropriate contract or agreement, or lessening of competition. *Id.* at 142.

This Article analyzes competitor-based formula pricing clauses generally in the context of the Sherman Act. Accordingly, the Article directly addresses the agreement requirement of § 1 of the Sherman Act and does not concern itself with the vagaries of the Federal Trade Commission Act. For the most part, the Second Circuit's opinion in *Ethyl* is not relevant to this discussion.

216. 101 F.T.C. at 639-40.
219. See supra note 215 and accompanying text.
221. *Id.* at 630-31.
tive management and information exchange effects. The FTC also relied on the structure and performance of the industry in concluding the clauses were effective in facilitating coordinated pricing.

With respect to efficiencies of MFNs, the FTC recognized the existence of externalities and their relationship to efficiencies. Customers desired the MFNs primarily because they did not wish to be at a price disadvantage in relation to their competitors. Thus, the FTC observed that "this is a particularly good example of a practice which may be desired by individual customers, viewed from their limited perspective, while proving harmful to customers as a class." Given the existence of competitors with MFNs, individual buyers desired the clause. However, given a choice, each buyer would have preferred that no one use the clauses.

In declaring the MFNs and the other practices illegal, the FTC applied a standard as stringent, if not more stringent, than that applied by courts in rule of reason cases under the Sherman Act. The FTC first looked to market structure and found high concentration, a homogeneous product, delivered pricing, and high barriers to entry. It then assessed industry performance, finding excess profits and prices above marginal cost. Finally, evidence of an actual effect on competition was present and there were no offsetting efficiencies.

CONCLUSION

Competitor-based formula pricing clauses are in widespread use in a variety of forms. In most cases, the clauses are efficient and provide significant benefits to both buyers and sellers. In oligopolistic markets with high entry barriers, however, the externalities inherent in competitor-based formula pricing clauses can become significant and adversely alter incentives for price competition. Where the clauses have this effect of facilitating collusive pricing, they should

222. Id. at 630.
223. Id. at 631.
224. Id. at 631-32.
225. Id. at 632.
226. Id.
227. Id.
228. Id.
229. Id. at 608-11.
230. Id. at 608-09.
231. Id. at 610-11.
232. Id. at 651.
be struck down as violative of section 1 of the Sherman Act.