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Market Power in Antitrust: Economic Analysis after *Kodak*

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The Eastman Kodak company tied the sale of some of its photocopying and micrographic equipment to the sale of replacement parts and service. In the Kodak *decision, a divided Supreme Court concluded that Kodak's absence of market power in the original equipment market did not necessarily preclude the conclusion that Kodak possessed market power in the aftermarkets for replacement parts and service. In this article, Professor Klein criticizes both the majority's reliance on a theory of "market imperfection" and the dissent's use of the economist's model of "perfect competition." He offers an alternative explanation of Kodak's policy: that the tie was a device for charging different prices to different classes of buyers. The use of such a device, which neither is nor should be illegal, does not imply the existence of market power. Professor Klein concludes by arguing that identifying the degree of a firm's market power with the firm's own elasticity of demand, as most economists do, is an inappropriate guide for antitrust policy. Instead, the courts should determine whether a firm possesses market power by examining the firm's share in a relevant market and its ability to appreciably increase market prices. This approach, which has been applied in the past, is superior to the seemingly more sophisticated economic analysis found in either of the* Kodak *opinions.*

I. Introduction

The Supreme Court's decision in *Eastman Kodak Co. v Image Technical Services, Inc.*,[1] has been described as rejecting economic theory for "the facts." The decision can be described more accurately

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I am grateful to many individuals who patiently discussed the issues in this paper with me, especially Armen Alchian, Aton Arbisser, Harold Demsetz, Kevin Murphy, Steven Salop, Daniel Wall and Gregory Werden.

1 112 S Ct 2072 (1992).

as rejecting a particular economic theory that is inconsistent with the facts, the defendant's economic theory of perfect competition, and accepting an economic theory that appears more plausible, or at least plausible enough to survive a summary judgment motion, namely the plaintiffs' economic theory of "hold-ups." *Kodak*, therefore, can be described as correctly emphasizing an examination of the facts of a situation before accepting an economic theory. However, the particular facts that *Kodak* focuses on—whether a firm could find it profitable to trade-off long-term losses for short-term gains by taking advantage of existing "locked-in" customers—has little to do with market power and therefore has little to do with the law actually at issue in the case.

Three major points are made in the following three sections of this article. First, "hold-up" problems, which are pervasive throughout the economy, do not involve an exercise of monopoly power and, therefore, are problems for contract law, not antitrust law. Second, a "hold-up" is not what was occurring in *Kodak;* it is more likely that Kodak's tie can be explained as a discriminatory marketing arrangement. Such discriminatory marketing arrangements are also present throughout the economy, including in many highly competitive industries. And third, the association of both "hold-ups" and discriminatory marketing arrangements with market power are examples of the more general confusion of identifying market power with the presence of a negatively sloped demand curve. Antitrust market power should be measured not by a firm's own elasticity of demand (i.e., whether a firm can increase its own prices without losing a significant fraction of its sales), but in terms of whether a firm can appreciably increase *market* prices by restricting its sales. This alternative definition of antitrust market power is shown to be broadly consistent with past antitrust case law and to provide a more useful guide for current and future antitrust policy.

The facts of *Kodak* concern the policies adopted by Eastman Kodak in providing service for its high-volume photocopier and micrographics equipment. In the early 1980s, independent service organizations (ISOs) began servicing this equipment in competition with Kodak, often at a price substantially lower than Kodak's service price. There was no systematic evidence that the service supplied by ISOs was of a lower quality than Kodak's service; in fact, some customers testified that ISO service was of a higher quality than Kodak's service. In spite of this, in late 1985 and 1986 Kodak adopted policies to limit the availability to ISOs of replacement parts for Kodak equipment. Kodak had previously sold its replacement parts a) to customers as part of a Kodak service call; b) to customers who did not use Kodak service and either serviced their machines themselves or made the parts available for use by ISOs; and c) to ISOs directly. Now, however, Kodak would sell replacement parts for its high-volume copying and micrographic machines only to customers who used Kodak service or who repaired their own machines. Kodak also pressured Kodak equipment owners and independent parts distributors not to sell parts to ISOs. Unable to obtain parts, many ISOs were forced out of business, and their customers were forced to switch to Kodak service. In 1987, eighteen of these ISOs brought suit against Kodak, claiming an illegal tie of the sale of service to the sale of replacement parts for Kodak machines and the monopolization of the markets for service and parts for Kodak machines.[2]

The primary issue before the Court, at least as it was formulated by the Court, was whether Kodak's absence of market power in the equipment market necessarily precluded as a matter of law an absence of market power in the aftermarkets for replacement parts and service. At the time of the litigation, Kodak had a 23 percent share of the high-volume copier market and less than a 20 percent share of the micrographic equipment market; the ISOs had conceded below that Kodak did not have market power in either market. The ISOs claimed, however, that the tying product was not Kodak equipment but Kodak replacement parts, of which Kodak controlled essentially 100 percent. Kodak is alleged to have used its monopoly power in Kodak parts to gain control of the Kodak service market by means of its illegal tie.

After limited discovery, the district court granted summary judgment for Kodak, accepting Kodak's theoretical argument that competition in the equipment market makes it impossible for Kodak to harm

[2] These and other facts of the case are taken primarily from the Supreme Court's opinion. Because of the limited discovery in the case and because I have not conducted an independent investigation of the industry, I assume for the purposes of my analysis that these facts are a complete and correct representation of the situation.

purchasers in the service market. That equipment market competition necessarily prevents the exercise of market power in aftermarkets is the "economic theory," since identified pejoratively by commentators as an example of "Chicago economic theory,"[3] at issue in the case. The Ninth Circuit reversed the district court's grant of summary judgment, stating that there was an issue of material fact whether competition in the equipment market prevented Kodak from exercising market power in the Kodak parts market. The Ninth Circuit noted, in language similar to that adopted by the Supreme Court in affirming the reversal, that "market imperfections can keep economic theories about how consumers will act from mirroring reality."[4] Whether an economic theory is correct, the Supreme Court claimed, is an empirical issue that must be determined at trial by an examination of "actual market realities," not solely by resort to theoretical arguments as to what does and does not make "economic sense."[5]

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[3] Steven C. Salop, Kodak *As Post-Chicago Law and Economics* (unpublished manuscript, 12/13/92) (presented at the ALI-ABA Course, *New Directions in Antitrust Law* (January 21–22, 1993)) ("Salop, *Post-Chicago*"). Justice Scalia's *Kodak* dissent (which was joined by Justices O'Connor and Thomas) accepts this "Chicago" economic theory, arguing that if the market is competitive, any increase in aftermarket service prices would have to be offset by a decrease in equipment prices in order for Kodak to avoid losing significant sales.

[4] *Image Technical Services, Inc. v Eastman Kodak Co.*, 903 F2d 612, 617 (9th Cir 1990).

[5] 112 S Ct at 2082. The Court also explicitly rejected Kodak's claim that the case can be analogized to *Matsushita Electric Industrial Co. v Zenith Radio Corp.*, 475 US 574 (1986). In *Matsushita*, Japanese consumer electronics manufacturers were alleged to have been engaged for more than twenty years in a conspiracy to price below cost. It was held in the grant of summary judgement, after several years of extensive discovery, that it did not make economic sense to claim that the Japanese manufacturers underpriced and incurred losses for twenty years with the hope that sometime in the future, after all other actual and potential manufacturers were driven out, they would be able to increase prices so as "to recoup . . . losses and to harvest some additional gain." Id at 589. The Court held that such an implausible theory could not be accepted by a reasonable jury as the motivation for the Japanese manufacturers' actions. In *Kodak* a jury would have been asked not to evaluate an anticompetitive economic theory that predicted the likelihood of higher prices in the future, as in *Matsushita*, but to evaluate an anticompetitive economic theory that explained what appeared to be higher service prices in the

II. THE "HOLD-UP" POTENTIAL AND MARKET POWER

Kodak's contention that if market power is absent in the equipment market, market power must also be absent in the parts and service aftermarkets is based upon the economic theory of perfect competition. In the perfectly competitive model, every firm in the market is assumed to sell identical products to fully informed consumers. Every firm operating in such an environment faces a perfectly elastic demand curve. If an individual firm raises its price above the market price by even a trivially small amount, its demand will go to zero. This is because no knowledgeable buyer will voluntarily pay more for an identical product it can get elsewhere at a lower price. Similarly, if we assume in the Kodak marketplace that all firms are selling identical products and that buyers are fully informed and consider the price of the entire package-equipment, parts and service-when making their purchasing decisions, then a perfectly competitive firm in this market does not have the ability to increase the package price of the product it is selling, or the power by means of a tie to increase any element of the package price. As the Court correctly notes, this is essentially the economic theory upon which Kodak relies. The theory assumes that "[i]f Kodak raised its parts or service prices above competitive levels, potential customers would simply stop buying Kodak equipment."[6]

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present. Moreover, the economic theory used to explain higher service prices is not inconsistent with basic economic common sense, as the plaintiffs' economic theory was in *Matsushita*. Although I argue in this article that the plaintiffs' economic theory in *Kodak* is not properly understood as a theory of anticompetitive behavior, the plaintiffs' theory is not implausible. (The theory is implausible only under the assumptions of the defendants' economic theory of perfect competition.) Therefore, *Kodak* may not have altered substantially the standard for summary judgment established in *Matsushita*.

[6] Brief for Petitioner at 12 (quoted, 112 S Ct at 2084). Salop correctly claims that this theory of perfect competition is associated with "Chicago economics." See Salop, *Post-Chicago* (cited in note 3). However, what is perhaps more closely associated with "Chicago economics" in the area of tying is the proposition that a firm with market power at one stage of production, say equipment, has no incentive to "extend" that power by a tie to another stage of production, such as replacement parts or service. See Aaron Director and Edward H. Levi, *Law and the Future: Trade Regulation*, 51 Nw U L Rev 281

To determine whether Kodak's theory is correct, the Court claims, one must measure the cross elasticity of demand, i.e., how much an increase in the price of service will decrease the demand for equipment. It is true that "Kodak cannot set service or parts prices without regard to the impact on the market for equipment," as the issue is formulated in the Department of Justice Amicus Brief.[7] However, the Court forcefully argues: "The fact that the cross-elasticity of demand is not zero proves nothing; the disputed issue is how much of an impact an increase in parts and service prices has on equipment sales and on Kodak profits."[8] Kodak is merely assuming "that higher service prices will lead to a disastrous drop in equipment sales."[9]

The Court criticizes the validity of Kodak's assumption of perfect competition by pointing to the fact that Kodak used its tie to increase the price of service and to drive out ISO service competitors without a dramatic loss of equipment sales. The discrepancy between reality and theory can be eliminated, the Court maintains, by modifying Kodak's theory of perfect competition with the inclusion of "market imperfections," namely by recognizing the presence of information and switching costs. The Court concludes that a cursory empirical examination of the market in which Kodak operates indicates that these "market imperfections" may permit Kodak to exercise market power in the parts and service market, despite the absence of market power in the equipment market, by taking advantage of imperfectly informed consumers that become "locked-in" to their existing Kodak equipment.

(1956), for the original statement of this view. (Director and Levi claim that if a tie is used as a way to price discriminate it should be "considered more an enjoyment of the original power than an extension of it.") Recent economic theory recognizes that it is possible for vertical arrangements to be used to solidify a monopoly at one stage of production-for example, by requiring two stage entry. However, this theory cannot be an explanation for Kodak's tie because the ease of entry of ISOs implies that firms would be available to service the products of any new entrant into equipment manufacturing.

[7] Brief for United States as Amicus Curiae at 20 (quoted, 112 S Ct at 2084 n 17).

[8] 112 S Ct at 2084 n 17.

[9] Id at 2085.

The Court is correct in noting that market "imperfections," in the sense of deviations from the assumptions of the perfectly competitive model, exist in the market for high speed photocopiers and micrographics equipment. In this market, as in all markets, buyers are not aware of all current and future prices. In particular, buyers may not know at the time they make their equipment purchases the exact package price of what they are buying, namely the price of the equipment they are purchasing together with the prices of the parts and service that will be required for this equipment over time. The perfectly competitive model, on the other hand, assumes that buyers possess complete knowledge of all current and future prices, i.e., the model assumes that buyers are omniscient. Labeling deviations from this full information assumption as "market imperfections" is misleading because such "imperfections" are pervasive in every real world market. Even Kodak does not know at the time it sells equipment what it will be charging for parts and aftermarket services over the complete life of the equipment.

Given "imperfect" information on the part of buyers, the Court then focuses upon "switching costs" that make it difficult for consumers to switch to a competing product once they find out that service prices are high. Because purchasers of high-volume photocopier and micrographics equipment generally make product-specific investments, including investments by employees in learning how to use the machines and the software, it is costly for a buyer to switch to another brand of equipment after a particular brand is purchased and used for a time. In addition, the Court claims that this equipment depreciates rapidly in the second-hand market. Low salvage values and high specific investments imply that purchasers are "locked-in" to some extent after their initial equipment purchase. It also implies that a seller could take advantage of this condition by increasing the price it charges for service above the level anticipated by buyers at the time of their original equipment purchases. Therefore, the Court claims that buyers who have already purchased their equipment will tolerate some increases in service prices before changing equipment brands, even if the equipment market in which the original purchase was made was competitive.

Whether a firm such as Kodak can profitably charge "supracompetitive prices" in the aftermarket, the Court emphasizes, is an empirical question that involves the firm "trading-off" increased short-run profit against reduced long-run sales and profit. Such a trade-off is more likely to be profitable, the Court claims, when switching costs are high relative to the increase in service prices and when the number of "locked-in" customers is high relative to the number of new customers, conditions that may very likely be present in *Kodak*.[10] Over the last fifteen years, a great deal has been written, some by me, about this "lock-in" problem, often referred to as the potential "hold-up" problem.[11] One general conclusion that has been reached is that buyers entering into a situation where they know they face the possibility of a "hold-up" because of the presence of high switching costs will make arrangements to protect themselves against this possibility. While Kodak's customers were not omniscient, as customers are assumed to be in the perfectly competitive model, they generally were sufficiently knowledgeable to have been aware at the time they made their equipment purchases that they would be making firm-specific investments that would place them in a position where they could be "held-up." Buyers aware of a "hold-up" potential will protect themselves either by dealing with sellers that possess sufficiently large reputations for fair dealing and, therefore, who have more to lose than they could gain by a

[10] Id at 2087. The Court also claims that such a strategy is even more likely to be profitable if the seller can price discriminate between its "locked-in" customers and its new customers since the seller need not trade-off any long-term profits from new customer sales for the higher short-term profits from "locked-in" customers. Id. In fact, a firm engaging in a "hold-up" policy may appear to be able to insulate new customers completely from a service price increase by simultaneously decreasing the price of equipment, thereby keeping package prices to new customers unchanged. However, such a policy is likely to have some effects on new equipment sales because Kodak's reputation for fair dealing will depreciate as new customers change their expectations that they also will be taken advantage of in the future. A complete trade-off analysis must explicitly model these reputation effects.

[11] See, for example, Benjamin Klein, Robert Crawford and Armen A. Alchian, *Vertical Integration, Appropriable Rents and the Competitive Contracting Process*, 21 J L & Econ 297 (1978); Oliver E. Williamson, *Transaction Cost Economics: The Government of Contractual Relations*, 22 J L & Econ 233 (1979). Oliver E. Williamson, *The Economic Institutions of Capitalism* (Free Press, 1985) contains a bibliography and summary of the literature. Salop, *Post-Chicago* (cited in note 3), refers to this problem as "installed base opportunism."

"hold-up" policy[12] or they will write contract terms that prevent "hold-ups" by limiting what the seller can do.[13]

In the particular situation described in *Kodak* simple contract terms that would limit a "hold-up" potential include contractually fixing aftermarket prices or using a "most favored purchaser" clause on equipment sales. Fixing aftermarket prices far in advance may be difficult because one does not know what changes in technology and relative prices will occur over time. However, a "most favored purchaser" clause does not require such knowledge. It merely prevents discriminatory pricing against old purchasers and thereby raises the cost to a firm of engaging in a "hold-up."

An alternative way a seller such as Kodak could contractually solve the potential "hold-up" problem is by lowering its equipment price below the market price by the amount of a buyer's switching costs. This would eliminate any possibility the seller could increase the package price above competitive levels with its tie. However, this contractual solution distorts the relative prices of equipment and aftermarket services, leading customers to inefficiently economize on service. All contractual solutions to potential "hold-up" problems entail some costs of this nature.[14] But if the switching costs and the potential "hold-up" were as large as the Court maintains, we would expect to see some of these obvious contractual protections against

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[12] This is the private (non-governmental) reputational enforcement mechanism presented in Benjamin Klein and Keith Leffler, *The Role of Market Forces in Assuring Contractual Performance,* 89 J Pol Econ 615 (1981). In this model a firm's reputation is thought of as an asset that serves as a form of collateral. Since the firm can expect to earn a future return on this asset if it performs properly, the threatened loss of this future return can motivate the firm to perform properly.

[13] Many contract terms that otherwise may appear anticompetitive or unconscionable can be explained in this way as preventing "hold-ups." See Benjamin Klein, *The Borderlines of Law and Economic Theory: Transaction Cost Determinants of 'Unfair' Contractual Arrangements,* 70 Am Econ Rev 356 (1980).

[14] See Benjamin Klein, *Contracts and Incentives: The Role of Contract Terms in Assuring Performance,* in Lars Werin and Hans Wijkander, eds, *Contract Economics* (Blackwell, 1992) ("Klein, *Contracts and Incentives*") (outlining the costs associated with attempts to solve the "hold-up" problem with explicit contract terms).

potential "hold-ups" employed by the transactors. The fact that we do not observe such contractual protection is evidence that either the "hold-up" potential is not as large as the Court believed or that buyers of Kodak equipment were relying on the more flexible reputational enforcement mechanism to prevent "hold-ups."

The important general point that can be made from what we know about "hold-up" problems is that, contrary to the Court's analysis, buyers need not be fully knowledgeable, and, in particular, need not know all future aftermarket prices at the time they make their equipment purchase, in order to avoid a "hold-up." Buyers need only know that switching costs are present and, therefore, that a "hold-up" potential exists. This will motivate buyers, certainly buyers as sophisticated as the business firms and agencies purchasing Kodak equipment, to take the relevant precautions, namely demanding sufficient reputation capital and/or contract protection.

This does not mean that "hold-ups" cannot occur. "Hold-ups" do occur from time to time, but only as a short-run phenomenon and only when an unanticipated event leads to a situation where agreed upon contract protection and reputation capital is inadequate.[15] Moreover, when "hold-ups" do occur they will be limited by the fact that buyers will learn to take account of what has occurred and will not make any new reliance investments without taking the necessary precautions, i.e., demanding sufficient reputational or contractual protection. That is, even if Kodak "held-up" their "locked-in" buyers in 1985, Kodak could not be "holding-up" new buyers that purchased their equipment after 1985.[16]

If the tie and increased price of service were, instead, anticipated, the tie is just the form in which Kodak is collecting the total price. For example, one would not want to claim that consumers are "held-up" when they purchase popcorn at a "high" price at a movie theater. The

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[15] In economic terms, "hold-ups" occur only when an unanticipated event places the transactional relationship outside what I have referred to as "the self-enforcing range." See Klein, *Contracts and Incentives* (cited in note 14).

[16] The fact that no evidence was presented that buyers of Kodak equipment after 1985 insisted upon contractual terms that were significantly different from terms agreed upon before 1985 suggests that a "hold-up" did not occur in 1985.

movie exhibitor is not taking advantage of the fact that consumers have purchased their non-refundable tickets to impose an unanticipated increase in popcorn prices. Consumers know in advance that they will pay a high price for the popcorn and of the exhibitor's "tie-in requirement" that prohibits consumers from bringing into the theater their own popcorn or of purchasing popcorn from competing suppliers while they wait in line.

When a tie is anticipated and, therefore, a "hold-up" is not occurring, it is clear that the level of competition should be measured before the buyer makes any specific investments. If the market at this point in time is competitive, then the tie is merely part of the total freely negotiated competitive price. This reasoning is consistent with much established tying law. For example, in *Mozart v Mercedes,*[17] where dealers were required to purchase replacement parts from Mercedes, the Court correctly emphasized that Mercedes had no market power at the point in time when individuals were deciding whether to become Mercedes dealers.[18] Presumably, the individuals who decided to become Mercedes dealers accepted the parts tie as an element of a freely negotiated, competitive contractual arrangement.[19]

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[17] *Mozart Co. v Mercedes-Benz of North America,* 833 F2d 1342 (9th Cir 1987).

[18] Id at 1346–1347. Similar reasoning can be found in *Grappone, Inc. v Subaru of New England, Inc.,* 858 F2d 792, 798 (1st Cir 1988); *A.I. Root Co. v Computer/Dynamics, Inc.,* 806 F2d 673, 676 (6th Cir 1986); *Will v Comprehensive Accounting Corp.,* 776 F2d 665, 673 n 4 (7th Cir 1985); *General Business Systems v North American Phillips Corp.,* 699 F2d 965, 977 (9th Cir 1983); *Allen-Myland, Inc. v IBM,* 693 F Supp 262, 281 n 42 (ED Pa 1988); and *Tominaga v Shepard,* 682 F Supp 1489, 1495 (CD Cal 1988). Some tying decisions are inconsistent with this reasoning. For example, *Metrix Warehouse, Inc. v Daimler-Benz Aktiengesellschaft,* 828 F2d 1033 (4th Cir 1987), concerns the same business practice challenged in *Mozart,* but reaches a contrary result. However, *Metrix Warehouse* ignores the question of market power and concentrates solely on the validity of Mercedes' business justification for the parts tie.

[19] Even when market power is determined to be present at the point in time before contracts have been signed and specific investments have been made, courts have looked at the anticipated tie as an element in the competitively negotiated bargain when determining damages. For example, in *Siegel v Chicken Delight, Inc.,* 311 F Supp 847 (ND Cal 1970), aff'd in part, 448 F2d 43 (9th Cir 1971), a franchiser required its franchisees to purchase paper

The idea that when a tie is anticipated by buyers one should measure the level of competition before the buyers make specific investments also is consistent with the underlying economic logic of *Jefferson Parish.*[20] The Court in *Kodak* cites *Jefferson Parish* for the proposition that the relevant antitrust product market should be determined by the choices available to Kodak equipment owners.[21] However, choices available at what point in time? *Jefferson Parish* cannot be read to claim that one should consider the choices available to buyers after they have made specific investments and are "locked-in." The Court in *Jefferson Parish* recognized that meaningful competition existed at the point in time when the consumer was choosing a hospital. If a hospital contracts exclusively with a particular group of anesthesiologists, it makes no sense

products from them. Although it was found that Chicken Delight's trademark, the tying good, conveyed market power and that the paper products tie was a per se illegal offense, the Ninth Circuit ruled that in assessing damages, the trial court should have permitted expert testimony that compared the "upcharge" above the "competitive" price charged by Chicken Delight on its paper products with what was at the time a "normal" franchise fee as a percentage of sales. (Chicken Delight did not have such a fee in their contract and the excluded expert testimony concluded that the paper products "upcharge" amounted to less, as a percentage of sales, than was currently being charged in the franchising market.)

Many similar franchise tying cases since *Chicken Delight,* where the franchisee has a small share in the (pre-specific investment) franchising market, hold that an illegal tie does not exist because the franchiser's trademark is not separate and independent of the tied product. See, for example, *Krehl v Baskin-Robbins,* 664 F2d 1348 (9th Cir 1982), where the trademark was held to be a representation of the source or origin of the tied ice cream, and *Principe v McDonald's Corp.,* 631 F2d 303 (4th Cir 1980), where a lease was held to be an integral element of the general business arrangement. Benjamin Klein and Lester F. Saft, *The Law and Economics of Franchise Tying Contracts,* 28 J L & Econ 345 (1985), show that the legal distinction between "rent-a-name" and "source-of-origin" uses for trademarks is economically perverse in terms of the likelihood the tie is being used for quality control. It is argued that the courts may make what to economists appear to be artificial distinctions in determining whether separate products exist in these tying cases only after they have analyzed the economic costs and benefits of the particular contractual arrangement, i.e., that the legal standard has become de facto the rule of reason.

[20] *Jefferson Parish Hospital District No. 2 v Hyde,* 466 US 2 (1984).

[21] 112 S Ct at 2090 (citing 466 US at 19).

to assert as a patient is being wheeled into the operating room that the patient has no choice regarding an anesthesiologist and that the hospital is illegally tying anesthesiologist services to its hospital services.[22]

This economic reasoning—that when a tie pre-exists and, therefore, is anticipated by buyers, competition should be determined at the point in time before buyers make any specific investments—is not disturbed by *Kodak*. The Court appears to recognize that "hold-ups" are, by necessity, unanticipated and emphasizes throughout that what is at issue is the legality of the *change* Kodak made in its marketing policy in 1985, after ISOs were established and servicing Kodak equipment. Moreover, the Court conveniently ignores the somewhat ambiguous record evidence regarding the nature of the change that occurred in 1985. In fact, Kodak made an obvious effort to make the tie-in change only prospective, instituting its restrictive parts policy in 1985 only for new purchases of micrographic equipment and continuing to supply parts to ISOs to service pre-1985 models of micrographic equipment.[23] Kodak claimed that its restrictive parts policy for copier equipment, on the other hand, had always existed since Kodak established a parts tie at the time it entered the copier business in 1975.[24] However, it is unclear whether buyers of Kodak equipment fully anticipated the tie-in arrangement. Some ISOs claimed they openly purchased copier parts directly from Kodak before 1985 and it appears the ISOs freely serviced Kodak equipment.[25] Customers may have known about the copier

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[22] The facts in *Jefferson Parish* are actually not as favorable to the defendant on this issue of market power as the facts in *Kodak* because there are some hospital visits that are emergencies where consumers face limited ex ante choice. Moreover, the 30 percent market share of East Jefferson Hospital, which the Court found insufficient to prove market power, is higher than Kodak's product market shares. *Jefferson Parish*, 466 US at 26–29.

[23] One may argue that buyers purchasing micrographic equipment after 1985 who had previously purchased Kodak micrographic equipment could not "freely" make a choice between competing brands. Although buyers had knowledge of the tie, they were also are "locked-in" to some extent by previous Kodak-specific investments, for example, in worker training and manuals, and therefore likely equipment migration, to post-1985 equipment.

[24] Brief for Petitioner at 6 n 2. See also 112 S Ct at 2095–2096 (Scalia dissenting).

[25] Brief in Opposition to Petition for Certiorari at 3 n 3.

tie but also knew it was unenforced. Therefore, Kodak may very well have changed de facto the enforcement of their copier policy in 1985 and the Kodak policy announcement with regard to the tie in this sense may have been an unanticipated event to existing "locked-in" buyers.

The closest the Court comes to explicitly discussing this issue is in its response to the dissent's claim that a tie between equipment and service should be treated identically to a tie between parts and service if buyers are aware before they make their equipment purchases of the restrictive parts policy. The Court responds by asserting that the dissent admits that "concrete evidence" is lacking that Kodak's restrictive parts policy was generally known.[26] Unfortunately, however, the Court then incorrectly describes this crucial missing evidence regarding the state of consumer knowledge of Kodak's tie as the answer to the empirical question of "whether [competition] in the equipment market prevents the exertion of market power in the parts market."[27] The empirical question the Court is asking here is whether a "hold-up" could be profitable or whether the long-term losses in the equipment market would make it unprofitable. This question is not the same as whether buyers of Kodak equipment were aware of the restrictive parts policy before they purchased their equipment. Buyers may have been fully aware of the restrictive parts policy at the time they made their equipment purchases, but this would not imply that Kodak would never find it profitable to unanticipatedly increase its parts or service prices.

For example, take the case of the fully anticipated and freely negotiated contractual arrangement that includes a tie in *Mozart v Mercedes.* Conditions could develop in such a way that the future expected demand for Mercedes' product would be significantly lower so that it would then pay Mercedes to "hold-up" existing dealers and consumers by increasing their parts prices. That is, conditions could develop in which the short-run increase in profits from such a policy outweigh the long-run losses in the new dealer franchise and automobile markets. An extreme example of this phenomenon would arise if Mercedes anticipated going out of business in the near future. In such a case,

[26] 112 S Ct at 2087 n 24.

[27] Id.

Mercedes may find it profitable to engage in a short-term "hold-up" because its short-term gains from taking advantage of its "locked-in" customers may then be greater than the long-term losses from such a policy.[28]

However, such a "hold-up" would have nothing to do with "the exertion of market power." When Mercedes' dealers negotiated the tie-in arrangement Mercedes had no market power in the tying good. Mercedes dealers knew by accepting the tie-in terms they were placing themselves at risk of a "hold-up" and they presumably assured themselves that the reputational capital of Mercedes and other contractual terms minimized the risk. Moreover, because Mercedes offered and dealers accepted these terms in a competitive market, the dealers were presumably adequately compensated for the residual risk they voluntarily assumed in the contractual arrangement.

The Court appears to believe that by determining whether a seller's short-run gains from a policy of taking advantage of its "locked-in" buyers of equipment more than outweigh the long-term losses from reduced demand for equipment in the future, i.e., whether a profitable "hold-up" is occurring, one can determine whether the situation is one where "market power" now exists—in spite of the fact that the tie may have been anticipated and agreed to when there was no market power present. On one level, the Court's calculation is irrelevant. If a seller is engaging in a "hold-up" policy, we can expect the seller to have made rational calculations and, therefore, for such a policy to be profitable. If a seller makes a mistake and we determine that the policy is likely to be unprofitable, do we declare that the firm has no "market power"? More generally, whether the "hold-up" is expected to be profitable or not, determination of whether a "hold-up" is occurring has nothing to do with whether market power existed and an antitrust violation

[28] Such a "last period" problem may explain what occurred in *Virtual Maintenance, Inc. v Prime Computer Inc.*, 957 F2d 1318 (6th Cir 1992), judgment vacated and case remanded for reconsideration in light of *Kodak*, 113 S Ct 314 (1992). Prime Computer (the defendant) argued that it could not take advantage of "locked-in" buyers by tying the purchase of hardware maintenance to its software support and software upgrades because of competition for new equipment sales. However, Prime Computer has now liquidated its equipment manufacturing operations and has reorganized itself under the name Computervision. These facts clearly do not fit *Kodak*.

occurred at the point in time when the tie-in contract was signed. If we wish to determine whether a seller illegally extended or abused its market power by "forcing" buyers to accept a tie, the seller's market power must be determined at the point in time when the tie-in contract was agreed to, not at the time when a "hold-up" is occurring.

To illustrate that the existence of a "hold-up" does not imply that a seller is "exerting" market power and that relevant market power should always be measured before buyers have made their seller specific investments, consider the case of a "hold-up" that occurs when a competitively negotiated, voluntarily agreed-to contract contains no tie-in clause. For example, consider the case of a law firm signing a contract to rent office space. Before the law firm signs the lease, competition among potential lessors of office space prevents anyone from exercising any significant market power in setting lease terms. Although no two buildings are identical, many close substitutes exist for any building the law firm is considering. Once the law firm signs the contract and makes specific (nonsalvageable) investments in the particular space it rents, the landlord may possess some "hold-up" power. This "hold-up" power will be largely controlled by the contract terms in the long-term lease agreement the firm signs and by the landlord's fear of loss of future business (from the law firm once its lease expires and from other participants in the market that become informed of the landlord's actions). However, since all contracts are by economic necessity incomplete and reputation capital is limited, conditions may develop in which the landlord attempts to take advantage of some conditions not controlled by the lease, such as increasing the price of parking in the building's garage.[29]

Assume, for example, that the landlord learns that the building is expected to be condemned in the near future for the construction of a baseball stadium. Because of this unanticipated event the landlord decides it has become wealth maximizing to attempt to appropriate the returns from the specific investments the law firm has made in its leased office space by raising the law firm's parking fees. (Assume that the landlord has no other buildings it is leasing under its name and,

[29] I use this as a hypothetical example. Although it is not a standard lease term, it is not uncommon for building leases to set limits on parking rate increases.

therefore, does not fear any adverse effects on its reputation). The landlord's decision to engage in such a short-run "hold-up" has nothing to do with the creation or exercise of market power. In particular, it does not make economic sense to define the relevant product market so narrowly as to encompass solely the law firm's office and to refer to the landlord as a "monopolist." When it turns out ex post that lessees are not sufficiently protected and a temporary "hold-up" occurs, this "hold-up" has nothing to do with market or monopoly power. One must, in general, still measure competition at the point in time before buyers make specific investments that "lock" themselves in to a particular firm. If at that point in time many alternatives exist, market power is absent. The law firm's dispute with its landlord is a business dispute to be handled by contract law or business tort law; it is not the concern of the antitrust laws. The fact that the law firm has made reliance investments may be a relevant legal consideration in the contract dispute but it does not make the landlord a monopolist or the dispute an antitrust case.

To distinguish in general terms a "hold-up" problem such as this lessor- lessee disagreement from a monopoly problem, one should note that the existence of a "hold-up" problem requires a) that the transactors have made specific investments; b) that there are gaps in the contractual arrangement covering the transactors' relationship; and c) that there is imperfect information or an unanticipated event that places the relationship outside a "self- enforcing range" given by the transactors' reputational capital and the agreed-upon contract terms. None of these conditions, on the other hand, are necessary for a monopoly problem to occur. For example, if there is only one potential lessor of office space in a city, then that lessor will be able to charge a monopoly price for office space. If the lease contract is complete or if office-specific investments are not made by lessees, the monopoly lessor will not be able to "hold-up" the lessee at all. If specific investments were made and the lease contract were incomplete, a "hold-up" potential would exist, but this would necessarily be a temporary phenomenon. A monopoly, on the other hand, need not be a short-term phenomenon and the present discounted value of the lessor's monopoly profits could be greater than or less than the temporary "hold-up" potential. Clearly the concepts are distinct.

Steven Salop attempts to distinguish standard "hold-up" cases, such as a lessor-lessee dispute, from cases of genuine antitrust concern by noting that in standard "hold-up" cases tie-in terms are not present and prices are merely increased. Therefore, in such cases "the only prospective remedy is ongoing price regulation, a task that antitrust courts shun."[30] Although it may be true that antitrust courts may not be adept at determining when prices have been unfairly raised and what the "correct" or "fair" or "competitive" price should be, identical regulatory problems exist in cases where tie-in terms are present, such as in our hypothetical Mercedes parts increase example discussed above. Salop attempts to avoid these analogous regulatory problems by limiting application of the antitrust laws to "hold-up" cases where a tie has been imposed unanticipatedly, after buyers have made their specific investments.[31] In such cases, Salop claims, merely enjoining the tie can provide an effective remedy.

However, Salop's proposed policy would focus judicial attention on only a subset of a much larger class of very similar cases. In all cases of a "hold-up," it is a price that is unexpectedly increased. In some cases, a tie may have to be imposed to accomplish the price increase, in other cases a tie may not be necessary because of poor substitutes for the good that is increased in price, and in still other cases the tie may already exist as part of the contractual arrangement. If "hold-ups" are something that deserve antitrust attention, why focus on one subset of "hold-ups" based upon the particular form in which the "hold-up" occurs?

Moreover, Salop's claim that such a limited antitrust policy would avoid detailed regulation of the contractual arrangement is misleading. While the remedy to enjoin the unanticipatedly imposed tie may seem obvious and simple, in practice such a policy may be difficult to administer. The discussion above about whether the Kodak tie was in fact

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30 Salop, *Post-Chicago* at 17 (cited in note 3).

31 Salop states: "[I]f Kodak had announced its policy in advance and applied it prospectively only to new purchasers, then the installed base opportunism theory would not apply. Its policy would have been simple bundling of service and equipment by a firm without market power." Id at 16. This is an incredible statement given the facts that Kodak's tie-in policy change may very well have been purely prospective and that Professor Salop served as an expert for the plaintiff ISOs.

anticipated by buyers at the time the buyers purchased their equipment is illustrative of the problems involved. Do we examine a company's enforcement policy? Do we survey buyer attitudes? In addition, even after it is determined that a tie has been imposed unanticipatedly, we still must determine whether a "hold-up" has occurred based on the parties' anticipated payoffs at the time of their initial contracting. Merely looking at changes in contract terms is insufficient to determine whether a "hold-up" has occurred because transactors often renegotiate and "voluntarily" change the terms of their contractual relationship over time as unanticipated events occur.[32]

Of course, when a "hold-up" occurs, parties are injured. "Locked-in" buyers may be forced to pay higher prices for parts or service (or for parking) and, if a tie is instituted in order to accomplish this unanticipated price increase, suppliers of competing parts or service may go out of business and take a capital loss on any firm-specific reliance investments they may have made. However, even if competing suppliers are driven out of business, it is not necessarily a monopoly problem. Would we want to say that an individual movie theater that begins to enforce a restrictive popcorn purchasing policy—driving out of business competing popcorn sellers that sold popcorn to movie ticket purchasers that were waiting on line—is abusing its "market power" and

32 *Data General,* perhaps the most explicit previous legal statement of the existence of "ex post market power," or market power created after a buyer makes firm-specific investments, is a good example of the problems involved. See *Digidyne Corp. v Data General Corp.,* 734 F2d 1336 (9th Cir 1984). Customers alleged to be "locked-in" to the Data General copyrighted operating system were required to purchase Data General hardware, putting competing hardware suppliers out of business. Although the tie was a clear change in Data General's policy, it does not appear to be a "hold-up," but merely a response by Data General to the unexpected entry of "emulators" because of Data General's inability to enforce patents on their equipment (as their competitors in the minicomputer market were able to do). Therefore, the tie does not appear to involve an unexpected increase in Data General package prices. (Also see discussion in note 46 below.) It should be noted that the Supreme Court's analysis in *Kodak* appears to go further than the Ninth Circuit did in *Data General* because the *Data General* court noted that a "lock-in" merely "enhanced" pre-existing market power that was already present on a copyrighted operating system software program; it did not claim that a "lock-in" created new market power. 734 F2d at 1342.

engaging in an illegal tie? Are we prepared to define a relevant antitrust product market to include only one movie theater?

Instead of finding "monopolies" everywhere, "hold-up" problems should be left to contract law. Antitrust law should not be used to prevent transactors from voluntarily making specific investments and writing contracts by which they knowingly put themselves in a position where they may face a "hold-up" in the future, including a "hold-up" that may entail a tie-in term.[33] Transactors know they cannot eliminate such "hold-up" risks and, instead, voluntarily decide to adopt contractual arrangements they believe optimally protect themselves against the risk of a "hold-up." By not interfering with this contracting process, we are permitting transactors to assume the risk of "hold-ups" in the way that they decide seems best for them. Contract law sometimes is used to solve "hold-up" problems that arise among transactors, but contract law inherently recognizes the pervasiveness of transactor-specific investments and generally deals with "hold-up" problems in a subtle way, not by attempting to eliminate every perceived "hold-up" that may arise.[34] Contract law generally recognizes that one transacting party may have voluntarily agreed to put itself in a position where a "hold-up" potential is created and that the party has been fully compensated for this risk. Contract law also generally recognizes the importance to commerce of a legal system that generally enforces agreements, however "imperfect," "unfair," or "unusual" they may appear to be.[35] Antitrust law, on the other hand, is a blunt instrument.

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[33] Richard Craswell, *Tying Requirements in Competitive Markets: The Consumer Protection Issues,* 62 BU L Rev 661 (1982) ("Craswell, *Tying Requirements*"), which is cited by the Court in *Kodak* for the proposition that consumers are unlikely to have complete life-cycle pricing information, explicitly notes that the opportunism problems that may result from such imperfect buyer information have nothing to do with market power. Craswell, therefore, advocates removal of tie-in cases from antitrust consideration. Individual cases of fraud or opportunism, he believes, should be left up to common law courts to handle on a case-by-case basis and that optimum disclosure rules should be left up to the legislature or administrative agencies.

[34] See Tim Muris, *Opportunistic Behavior and the Law of Contracts,* 65 Minn L Rev 521 (1981).

[35] Some contract terms that may appear to be "hold-ups" (for example, franchise termination provisions) may merely be elements of efficient contract enforcement mechanisms. See Benjamin Klein, *The Borderlines of Law*

If interpreted as broadly as a liberal reading of Kodak would imply, antitrust law would invalidate many contractual arrangements that transactors have voluntarily entered into under competitive conditions.

III. The Business Rationale for Kodak's Tie

While it is unlikely that the purpose of Kodak's tie was to "hold-up" "locked-in" customers, the three alternative explanations that Kodak presents as business rationales for their tie are also unconvincing.[36] Kodak's first explanation, that the tie permitted it to compete by committing to high quality service, is inconsistent with the supposed evidence of equal or superior ISO service. More importantly, independent of the quality level of service provided by ISOs, this explanation assumes that buyers cannot judge service quality for themselves. While it is true that Kodak may have wanted to avoid being blamed for a breakdown "when the problem is the result of improper diagnosis, maintenance or repair by an ISO,"[37] why not leave the choice of whether to rely on a single vendor or not up to buyers? Paternalism is a weak economic rationale for outlawing any business practice, certainly one where the buyers were as knowledgeable as they apparently were in this case.

Kodak's second explanation, that a tie was necessary in order to control inventory costs, also is weak. Kodak presents no evidence that without a tie the computation of optimal inventory levels for their parts would be more difficult. If Kodak was concerned that ISOs were relying on Kodak's parts inventory, this could have been included in Kodak's parts prices. There is a potential problem that some low turn-

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and Economic Theory: Transaction Cost Determinants of 'Unfair' Contractual Arrangements, 70 Am Econ Rev 356 (1980).

[36] It is not surprising that Kodak may not know the purpose a particular business practice it has adopted is serving. The most profitable business practices will survive in a competitive marketplace independent of the validity of the business firm beliefs regarding the practice. Frank Easterbrook correctly states that the failure of a firm to present the true economic motivation for a marketing arrangement in court should not be held against the firm in determining liability: "To award victory to the plaintiff because the defendant has failed to justify the conduct properly is to turn ignorance . . . into prohibition." Frank Easterbrook, *On Identifying Exclusionary Conduct,* 61 Notre Dame L Rev 972, 975 (1986).

[37] 112 S Ct at 2091 (quoting Brief for Petitioner at 6–7).

over parts may have to be priced at what appears to be extremely high levels, leading customers requiring those parts to incorrectly perceive a "hold-up." But Kodak does not focus on this problem, perhaps because the problem is not empirically relevant. And, finally, Kodak's third explanation, that a tie was necessary to prevent ISOs from "free riding" on Kodak's capital and R&D investments, also does not appear to make any economic sense. No reason is presented why Kodak could not have collected for their capital and R&D investments in the prices they set for their equipment and parts.[38]

[38] There is some evidence that the ISOs may have been "free riding" in a sense on Kodak's human capital investments. The ISOs consisted of people who were trained by Kodak and then left to go into competition with Kodak, taking not only their Kodak-supplied human capital but Kodak manuals as well. (See, for example, Declaration of Paul Hernandez, App. vol. 2, p. 412.) Such "free riding" could not be prevented with limited duration non-competition clauses in the Kodak employment contracts because such clauses are unenforceable in many states, such as California. It is likely that this evidence was not mentioned by Kodak in its brief because it would not have legally justified the use of its tie.

The Court's skeptical examination of Kodak's "free riding" business justification counters a trend where "free riding" justifications were increasingly accepted without careful analysis and convincing proof. See Herbert Hovenkamp, *Rhetoric and Skepticism in Antitrust Argument,* 84 Mich L Rev 1721 (1986). Moreover, even when "free riding" is present, courts have often erred by referring exclusively to the "free riding" originally discussed by Lester G. Telser in *Why Should Manufacturers Want Fair Trade?,* 3 J L & Econ 86 (1960), where consumers obtain services (such as a demonstration) from a full service retailer before purchasing the product at a low service discount retailer. For example, the Court in *Monsanto Co. v Spray-Rite Service Corp.,* 465 US 752 (1984) mistakenly refers to this type of "free riding." While it is true that Spray-Rite "was terminated because of its failure to hire trained salesmen and promote sales to dealers adequately," id at 757, Spray-Rite did not sell to individuals who first obtained the promotional services from another distributor. Instead, Spray-Rite sold at a discount primarily to knowledgeable, large volume customers who did not require the promotional services. Spray-Rite was "free riding" on a marketing arrangement where an "extra margin" was guaranteed by Monsanto on sales to these large volume, knowledgeable customers in order to pay distributors to supply subsidized promotional services to promotion-sensitive marginal buyers. (In Benjamin Klein and Kevin M. Murphy, *Vertical Restraints as Contract Enforcement Mechanisms,* 31 J L Econ 265 (1988), vertical restraints are shown to be used in *Monsanto*, as in many other cases, to create a premium

In order to explain Kodak's tie it may be necessary, as the Court believes, to modify the assumptions of the perfectly competitive model so that they correspond more closely to reality. However, rather than modifying the perfectly competitive model by assuming imperfect information and focusing on the potential for Kodak to "hold-up" "locked-in" customers, as the Court does, Kodak's tie may be explained by modifying the perfectly competitive model to take account of the fact that all firms in the real world do not sell identical products. Firms differ in the types of products and services they supply, in the value and perceived quality of their products to different buyers, and in other characteristics that will vary across buyers. As a result, Kodak, like every firm in the economy, does not face a perfectly elastic demand curve. Even if buyers had perfect information about current and future prices, a small increase in the price of Kodak equipment, or in the price of the package comprising Kodak equipment plus parts and service, would not cause the demand for Kodak's products to vanish. Therefore, although Kodak does not have market power in the equipment market, Kodak does have the ability, if it wishes, to raise aftermarket prices by means of a tie without losing all its sales.

Once one recognizes that Kodak, like all firms outside the perfectly competitive model, faces a negatively sloped demand curve, Kodak's tie may serve as a way for it to "price discriminate" between different buyers of its equipment. It is important to note that the price discrimination we are referring to here is price discrimination in a technical economic sense. It is not what most non-economists would refer to as price discrimination and it is not the type of price discrimination legally prohibited by the Robinson-Patman Act. Rather than charging different prices for the same commodity to different competing buyers, price discrimination here refers to marketing arrangements through which a firm may create a different product and let different classes of buyers voluntarily separate themselves out on the basis of differing demand characteristics. The classes of buyers may

stream which assures the supply of these subsidized promotional services by creating a high enough margin at the distribution level so that distributors have enough profit to lose if they are terminated for failure to supply promotional services.) Similarly, the ISOs were "free riding" or "cherry picking" the Kodak marketing arrangement where an extra margin existed on the sales to a group of buyers. See the discussion below.

differ in various ways, such as in a buyer's willingness to forego particular product features (separated out by a firm's use of, for example, "deluxe" versus "standard" models of a product or a restaurant's "over pricing" of after-dinner coffee and dessert), or in a buyer's willingness to delay consumption of a product (separated out by a firm's use of, for example, first-run versus later-run movies, or hardback versus paperback books, or "sale" merchandise generally), or in a buyer's willingness to expend time and effort searching for a price discount (separated out by a firm's use of, for example, coupons that buyers must expend time and effort to collect and redeem). In all these cases, price discrimination exists solely in the economic sense that the ratio of the price set by the firm for a particular type of product relative to the firm's marginal cost of the product differs across types of products and, hence, buyers. Price discrimination does not exist in any common-usage sense or in any legal sense.[39]

Kodak's tie may facilitate this economic type of price discrimination if the value different buyers place on Kodak equipment is correlated with their demand for the complementary input of service. This is similar to the rationale originally presented by Director and Levi for the IBM-punch cards tie.[40] However, there are a number of differences between the simple metering demand rationale for the equipment-cards tie in the IBM case and a similar rationale for the equipment service tie in *Kodak*. First of all, although IBM possessed market power in the earlier case, it is important to keep in mind throughout our application of the analysis to *Kodak* that all one requires for this type of price discrimination is a negatively sloped demand curve, not market power.[41] Second, if a simple metering demand type of price discrimination is what Kodak desired to institute, Kodak may appear to

39 In some of these cases the products are not "commodities"; in some cases the products may not be considered of "like grade and quality"; and in all the cases there is no primary-line or secondary-line competitive injury. Similarly, if price discrimination were occurring in *Kodak*, there would be no competitive injury since the Kodak equipment is largely sold to non-competing businesses and agencies.

40 See Aaron Director and Edward H. Levi, *Law and the Future: Trade Regulation*, 51 Nw U L Rev 281 (1956).

41 This distinction is discussed in Part IV.

be able to accomplish this without resorting to a service tie. As opposed to computers, which do not have important moving parts that must be systematically replaced with use, the equipment Kodak was selling had such parts. In addition, many of these parts were proprietary and could not be substituted for by customers. Therefore, it appears that Kodak could discriminate among buyers on the basis of intensity of use merely by placing an extra upcharge over marginal cost on its replacement parts prices. It does not appear necessary to tie-in service.[42]

The problem with Kodak adopting this strategy of using replacement parts as a metering input is that, as opposed to the IBM-cards case, a substitute exists for the metering input, namely service. If Kodak equipment is serviced more frequently and maintained more carefully, Kodak proprietary parts would need to be replaced less frequently. Therefore, increasing the price of parts would likely have led customers to economize on high parts prices by servicing their equipment more intensively. Moreover, this substitution effect is likely to be large because the cost of parts is a relatively small share of total aftermarket expense. As a consequence, the attempt by Kodak to place its entire aftermarket metering demand price increase on parts would have produced a very large increase in the price of parts relative to service and a very large incentive to substitute service for parts. This substitution would result in an inefficient distortion in the demand by customers for parts relative to service and would lead to a reduction in Kodak's profit.[43]

In addition, a parts price increase may not be a profitable substitute for a service price increase because parts demand may not be as

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[42] It also appears that Kodak could have engaged in a "hold-up" by increasing the prices of these replacement parts, continuing to sell the parts to all buyers, including ISOs, while simultaneously lowering their equipment prices. This would have had the advantage of increasing the price paid by existing "locked-in" customers without changing the price paid by new customers and legally accomplishing without a tie what the Court claims Kodak accomplished with its service tie.

[43] See F. Warren-Boulton, *Vertical Control with Variable Proportions,* 82 J Pol Econ 783 (1974). The *Kodak* dissent incorrectly assumes that parts and service are demanded in fixed proportions. 112 S Ct at 2097 n 2 (Scalia dissenting).

good a meter of value as service demand. For example, some buyers, such as individuals who service their own equipment, demand a relatively large quantity of Kodak parts per unit time but have a relatively low reservation demand for the Kodak package. Therefore, it would not be a profitable form of price discrimination for Kodak merely to increase substantially the price of parts. In addition to inefficient substitution away from parts, imposing such a tie likely would cause many of the self service customers to switch to a competing brand.[44]

Given that there are two market segments, self-service and purchased-service, Kodak can be thought of as determining the profit maximizing prices of equipment, parts and service in the following way. First, the profit maximizing price of equipment and parts is determined by considering the demand for this package in the self-service market. Then, after determining the profit-maximizing package price of equipment, parts and service in the purchased-service market, the price of service is set as a residual.[45] If Kodak's upcharge over its mar-

[44] The Court asserts that a form of price discrimination exists between purchased-service and self-service customers, but only in the context of refuting Kodak's claim that unsophisticated buyers (those buyers who cannot make accurate estimates of total lifecycle prices) will be able to prevent Kodak from taking advantage of them by paying the prices negotiated by the sophisticated buyers (buyers who can make accurate estimates of total lifecycle prices). The Court claims that if Kodak can price discriminate and charge the sophisticated buyers lower prices without also charging the unsophisticated buyers the same lower prices, this market mechanism will not operate. 112 S Ct at 2087. This motivation for price discrimination is different from the metering motivation for price discrimination, which would be present even if all buyers were knowledgeable about prices. Moreover, self service buyers should not be thought of as necessarily more sophisticated or knowledgeable. They are likely to have more elastic demands because they have available a lower cost substitute for service (self service) than other buyers do. That self service is a cheaper alternative than purchased service for some but not all buyers may be due to the fact that there are economies of scale in providing service and that a buyer must be sufficiently large before it can specialize in providing services to itself. Alternatively, self service may be an important advantage to buyers who have specialized service demands, for example, particular security considerations.

[45] These two pricing decisions are inter-related because some consumers in the purchased service market may switch to the self-service market in response to the tie.

ginal cost on its service prices is greater than its upcharge on its parts and equipment prices, its service upcharge should be thought of as representing an extra return to Kodak on their equipment and parts sales to purchased-service customers. It is this extra return that induces entry by ISOs and that leads Kodak to impose a tie. The fact that there are two separate market segments, self-service and purchased-service, requires Kodak to impose the tie in the particular form that it does, namely to exempt self-service customers.[46]

In addition, Kodak's tie may have facilitated another form of profitable price discrimination. The Kodak buyers that purchased service are likely to differ in the value they place on the Kodak package not only based upon the quantity of service they demand but also based on the type of service they demand. In particular, buyers that demand

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[46] This element of Kodak's discriminatory pricing scheme is similar to the pricing adopted by the defendant in *Data General* (discussed in note 32), where any customer wishing to license Data General's operating system software was required also to purchase a Data General computer. This arrangement led to the demise of companies that were producing copies of the Data General computer (referred to as "emulators"), similar to the demise of the ISOs in *Kodak,* which also supplied substitutes for the tied good in *Kodak.* Just as we asked the question why Kodak adopted a tying arrangement rather than merely increasing its parts price in response to ISO entry, we can ask why Data General adopted a tying arrangement rather than merely increasing its operating system software price in response to emulator entry. The answer to this question for Data General is similar to the price discrimination rationale presented for Kodak. Data General faced two distinct groups of customers, customers who purchased the Data General system, i.e., hardware and software, and a substantial group of customers who only purchased Data General hardware. Therefore, Data General priced in the same way as Kodak-setting its hardware price to maximize profit in the "hardware only" market segment and setting its software price as a residual so that the package or system price would maximize profit in the system market segment. Similar to the situation faced by Kodak, the existence of two distinct market segments prevented Data General from responding to the growth of emulators by merely lowering its hardware price and simultaneously increasing its operating system software price by the same amount. Such a response would have prevented system customers from switching to emulators, but likely would have placed the hardware price below profit maximizing levels in the "hardware only" market segment, as increasing parts prices and lowering service prices would have placed parts prices above profit maximizing levels in the self service market in *Kodak.*

more immediate service (for example, one-hour response, the availability of weekend and evening calls, etc.) are likely to have a higher reservation demand for the Kodak package than those customers that require less immediate attention (for example, four-hour or even next day response). Therefore, buyers that demand more immediate service could be charged a higher service price relative to the marginal cost of supplying this service than other buyers. This form of price discrimination can be accomplished only if the equipment manufacturer controls the provision of service with a tie. Otherwise, competition in service would cause the manufacturer to lose a significant number of immediate-service customers (those immediate-service customers that place a relatively lower value on single vendor accountability).

If Kodak were forced to abandon its tie (and any alternative method by which it could price discriminate), it is likely that some customers would gain and some would lose. However, depending on the relative magnitudes of demand facing Kodak in the different market segments, it is possible that eliminating price discrimination would make no customers better off. For example, if price discrimination between self-service and purchased-service customers were prohibited, it could be profitable for Kodak to price in a way that would essentially prevent any sales in the self-service market.[47]

However, more important than the empirical question of which customers gain and which lose if a discriminatory marketing practice is eliminated is the question of whether antitrust policy should prohibit such discriminatory marketing practices. Would we want to prohibit the use of "cents off" coupons on supermarket products? These coupons discriminate between consumers by separating out those consumers who are willing to expend the time and effort necessary to redeem the coupon and who do not have a particularly strong preference for another product. Or, more analogous to the *Kodak* pricing scheme, would we want to prohibit razor manufacturers from "underpricing" razors and, in effect, discriminating between buyers accord-

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[47] This is what occurs, for example, in the videotape movie rental market. Because distributors cannot charge different prices for the video tapes they sell to video stores that are intended for rentals and those tapes that are intended to be sold to consumers, distributors often choose a price, for example, $89.95, that essentially eliminates the "sell through" market.

ing to how intensively they use razor blades? Prohibiting marketing practices such as these because they would not exist in a perfectly competitive world would imply a level of detailed government planning that is inconsistent with the fundamental goals of antitrust—to set ground rules that permit the competitive market process to function. The idea that antitrust requires us to microregulate the economy so as to eliminate all discriminatory marketing arrangements is based, as we shall see, on a fundamental misconception of the nature of market power and of the goals of antitrust.

IV. THE CONCEPT OF ANTITRUST MARKET POWER

Kodak may very well have understood that its tie facilitated a form of economic price discrimination, but decided not to present such an explanation because the courts certainly would be expected to look unfavorably on price discrimination as a rationale for a tie. It is a commonly accepted proposition that a seller who has the ability to price discriminate must possess market power.[48] The inference from a firm's ability to price discriminate to the existence of market power is accepted even in the *Kodak* dissent, which claims that Kodak's assumed absence of market power in equipment implies an inability to price discriminate.[49]

The inference from price discrimination to market power is based on the economist's definition of "market power" as the absence of perfect competition. However, defining "market power" in terms of devi-

[48] *US Steel Corp. v Fortner Enterprises, Inc.*, 429 US 610, 617 (1977) ("*Fortner II*"), indicates that price discrimination may signify market power in the tying-product market. Areeda and Turner also claim that price discrimination provides "direct evidence" of market power: "[P]ersistent price discrimination in the sale of the same products to different customers clearly indicates that the customers are in separate markets and that there is a lack of effective competition in the market where the higher net returns are made. In other words, it shows that the seller has market power." 2 Phillip E. Areeda and Donald Turner, *Antitrust Law* ¶ 5.14 at 342 (Little, Brown, 1978) ("Areeda and Turner"). Moreover, *Jefferson Parish* explicitly states that a tie that facilitates price discrimination "can increase the social costs of market power." 466 US at 14–15.

[49] The "opportunity to engage in price discrimination is unavailable to a manufacturer—like Kodak—that lacks power at the interbrand level." 112 S Ct at 2099.

ations from the perfectly competitive model is not useful. It is true that the price-taking firms assumed to exist in the perfectly competitive model do not have the ability to price discriminate, but most firms in the real world have negatively sloped demands and, therefore, the ability to price discriminate.[50] One would not want to refer to the pervasive examples of price discrimination in the real world as implying that "market power" or "monopoly power" in any relevant economic or policy sense also is pervasive. Instead, all it means is that most firms in the marketplace possess some "individual pricing discretion."

For example, significant pricing discretion exists for almost every branded product sold in the supermarket. Firms producing such products are not "price-takers" facing perfectly elastic demand curves; if they increase their prices a small amount, the demand for their products will not vanish. However, no court would conclude that the manufacturers of each of those branded products possess market power. The manufacturers of these products are generally competitive firms operating in an industry where there is free entry, but where products are heterogeneous, information is imperfect, and brand names are important. Therefore, they face negatively sloped demand curves and have the ability to price discriminate.[51]

Most economists, however, would label the situation where a firm can increase the price of its product without losing significant sales, and thereby can engage in price discrimination, as one where the firm possesses some market power. For example, Carlton and Perloff assert in their recent industrial organization text: "Whenever a firm can influence the price it receives for its product, the firm is said to have monopoly power (sometimes called market power). The terms monopoly power and market power typically are used interchangeably to mean

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[50] Although firms with negatively sloped demands have the ability to price discriminate, such firms may not find price discrimination profitable because of the costs of determining separate classes of customers, setting different prices, and preventing arbitrage between the classes.

[51] Recent literature recognizes that because of switching costs associated with information costs or brand-specific preferences, such price discrimination may exist in competitive (free entry) markets. See, for example, Severin Borenstein, *Price Discrimination in Free-Entry Markets,* 16 Rand J 380 (1985) (theoretical model), and Andrea Shepard, *Price Discrimination and Retail Configuration,* 99 J Pol Econ 30 (1991) (empirical application).

the ability to profitably set price above competitive levels (that is, above marginal cost)."[52] Carlton and Perloff recognize, as do many economists, that this definition of market power as the absence of perfect competition implies that every firm in the economy, except possibly the wheat farmers of the economics principles textbook, has market power.[53] Carlton and Perloff solve this problem of the pervasiveness of market power by claiming that the existence of market power is a matter of degree. Although all firms in the real world deviate from the perfectly competitive model, one should define the degree of antitrust market power possessed by a firm in terms of the degree of deviation from the perfectly competitive model or the degree of the firm's ability to price above its marginal cost.[54] Therefore, although most firms have some market power in the strict economic sense, most firms do not have market power in the sense relevant to antitrust because "when courts find a firm has market power, they must mean a substantial amount of market power."[55] This is the commonly accepted economic solution to the definition of antitrust market power.[56]

The commonly accepted economic idea that one can use deviations from the perfectly competitive model to define the degree of mo-

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[52] Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization* 97–98 (Scott, Foresman/Little, Brown 1989) ("Carlton and Perloff").

[53] "If this definition is applied literally, probably every firm in the United States has at least a tiny bit of market power." Id at 738.

[54] A firm's ability to price above its marginal cost is related to the firm's own elasticity of demand. In particular, at the firm's profit-maximizing output its own elasticity of demand is inversely related to the difference between its price and marginal cost divided by its price. This ratio was first used by Abba Lerner, *The Concept of Monopoly and the Measurement of Monopoly Power,* 1 Rev Econ Stud 157 (1934), as a measure of market power.

[55] Carlton and Perloff at 738 (cited in note 52).

[56] For example, Landes and Posner assert that "[a] simple economic meaning of the term 'market power' is the ability to set price above marginal cost. . . . But the fact of market power must be distinguished from the amount of market power." William M. Landes and Richard A. Posner, *Market Power in Antitrust Cases,* 94 Harv L Rev 937, 939 (1981) ("Landes and Posner, *Market Power*"). Similarly, Areeda and Turner assert that "market power in economic terms is the ability to raise price without a total loss of sales. It is, thus, clearly a matter of degree." 2 Areeda and Turner ¶ 501 at 322 (cited in note 48).

nopoly that is present in any situation confuses a firm's individual pricing discretion with a firm's market power. The idea is based upon using the economic models of perfect competition and monopoly as the two extremes or end points on a continuum that defines a firm's pricing power. Perfectly competitive firms have no pricing power (they are price-takers) while monopolists have maximum pricing power (they are price-setters). However, this framework fails to recognize that firms may have negatively sloped demands and individual pricing power for reasons that have nothing to do with monopoly.

This confusion of a firm's ability to engage in profitable price discrimination with monopoly power can be illustrated with Reuben Kessel's classic analysis of price discrimination in medicine.[57] Kessel infers, after observing that doctors discriminated in the prices they charged different patients, that a collusive monopolistic enforcement agency must be present that forced doctors to charge according to an established discriminatory price list. Otherwise, he reasoned, competition would eliminate the price discrimination. Kessel further asserted that the American Medical Association served as this collusive agency, threatening doctors that failed to follow a discriminatory price list with the loss of hospital privileges. Unfortunately, this analysis is fundamentally inconsistent with the facts. There is no evidence of an AMA-authorized price list and even doctors with very limited needs for hospital privileges, such as psychiatrists, apparently engaged in significant price discrimination.

The lens through which Kessel viewed the world, which broke everything up into either monopoly or perfect competition, created a distorted picture of reality. Because consumers of medical services make large specific investments in their doctors, consumers do not consider every doctor identical and will not switch from their established doctor to another doctor in response to a slightly lower price. They are "locked-in" in a way similar to the way buyers of photocopier and micrographics equipment may be "locked-in." As a result, doctors do not face perfectly elastic demand curves and individual, competing doctors have the ability to price discriminate. However, such price discrimination does not imply the existence of monopoly or market power

57 Reuben Kessel, *Price Discrimination in Medicine*, 53 J L & Econ 20 (1958).

in any relevant antitrust sense. There is certainly no need to search, as Kessel did, for a collusive cartel-enforcing arrangement to explain the existence of price discrimination.

I could be said to be arguing for the use of the monopolistic competition model.[58] This model recognizes that all firms produce "differentiated" products and face negatively sloped demand curves. Therefore, all firms possess the ability to price discriminate.[59] However, the standard monopolistic competition analysis continues to use perfect competition as a benchmark for defining market power. Edward H. Chamberlin, for example, did not use his model of monopolistic competition to explain the behavior of firms in the real world, but rather to prove the "inefficiency" of actual real world competition. He claimed that the results of real world competition, that is, the monopolistically competitive outcomes, are inefficient because they differ from the results of the perfect competition model. Therefore, Chamberlin advocated economic policies designed to force the world away from monopolistic competition and closer to the unrealistic assumptions of the perfectly competitive model.[60]

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[58] Edward H. Chamberlin, *The Theory of Monopolistic Competition* (Harvard, 8th edition 1962) (1st edition, 1933).

[59] George Stigler, who led the Chicago challenge to the theory of monopolistic competition, incorrectly claimed that nothing was gained in terms of useful implications by using the model of monopolistic competition rather than the two models of perfect competition and monopoly. George Stigler, *Monopolistic Competition in Retrospect*, in *The Organization of Industry* 309–21 (Irwin, 1968). However, the predicted pervasiveness of price discrimination is an example of the different empirical implications one is likely to obtain using the monopolistic competition model rather than the perfect competition and monopoly models. Someone looking at the world through a monopolistically competitive framework would certainly not make Kessel's error of identifying the presence of price discrimination with a collusive monopoly.

[60] The "Chicago School"-Chamberlin debate that occurred from the 1930s through the 1960s unfortunately focused on these "inefficiency" questions, such as whether "excess capacity" existed in equilibrium, whether there was "excess product proliferation," and other so called "deviations" from the perfectly competitive model. I say "unfortunately" because these supposed differences between the competition and monopolistic competition models have no useful predictive content. The supposed "inefficiencies" of real world

Instead of using the perfectly competitive model to define the degree of antitrust market power possessed by a firm in terms of the effects of changes in the firm's prices on the demand for the firm's services, i.e., in terms of the firm's *own* elasticity of demand, it is more useful to define the extent of a firm's antitrust market power in terms of whether changes in the firm's prices have any significant effect on *market* quantities and prices. For example, although a small breakfast cereal manufacturer may have a negatively sloped demand for its product, it may have essentially no power to restrict the aggregate supply or to increase the market price of breakfast cereal and, hence, have no market power. Suppose that if the cereal manufacturer increased its price ten percent, the demand for its product would not vanish but would fall only, say, twenty percent—an elasticity of demand of minus 2 and an implied equilibrium price that is double marginal cost.[61] Using its own elasticity of demand as a measure, the cereal manufacturer would be defined as having significant market power. However, if the cereal manufacturer had a small share of the breakfast cereal market, this 20 percent reduction in its demand would represent a small reduction in the supply of the total quantity of breakfast cereal available in the market. Moreover, because the substitutes for that particular manufacturer's breakfast cereal are likely to be supplied very elastically, one would expect the total market supply of breakfast cereal to be reduced even less than this, if at all.

What I have outlined as a framework to determine whether a firm possesses market power is similar to the Landes and Posner analysis, according to which a firm's market power is related to a firm's market share, the market elasticity of demand and the supply elasticity of other firms in the market.[62] However, Landes and Posner accept the economic definition of a firm's market power in terms of the firm's own

competition demonstrated by the monopolistically competitive model also explains, in part, the Chicago hostility to the model—monopolistic competition was perceived at the time as an attack on the free market system.

[61] If one defines cost broadly enough (i.e., tautologically) to include a normal rate of return on the firm's brand name, then one may claim that price equals average cost. But price would remain significantly above marginal cost, as evidenced by the assumed relatively inelastic demand response to the firm's price changes in equilibrium.

[62] Landes and Posner, *Market Power* (cited in note 56).

elasticity of demand and use this methodology only because we do not have direct measures of a firm's own elasticity.[63] In the Landes and Posner analysis, market share is useful only as a proxy or indirect measure of a firm's own elasticity of demand. However, a firm's market share will be related to its own elasticity of demand only if all firms in an industry are producing homogeneous products. In a more realistic "imperfect competition" world where products are differentiated, a firm may have a small market share yet, as in the hypothetical example of the demand for a particular brand of breakfast cereal, have a fairly inelastic demand.

Moreover, a firm may have a low elasticity of demand even if the elasticity of supply of other firms in the industry is very high. For example, the breakfast cereal manufacturer may be able to significantly influence the price at which it sells its product because a subset of consumers particularly like it, despite the fact that the elasticity of supply of other firms in the breakfast cereal industry is very high. It is because of this supply response that the small breakfast cereal manufacturer cannot affect the *market* price for breakfast cereal, but that does not mean the firm cannot affect its own price. How should we describe such a situation? If one defines market power in terms of a firm's own elasticity of demand, as Landes and Posner do, then the small breakfast cereal manufacturer would incorrectly be labeled as possessing market power. If a firm's market share is used not as an indirect measure of a firm's own elasticity, but as an indirect measure of a firm's ability (and incentive) to restrict *market* output, then the small breakfast cereal manufacturer would not possess any market power.

Landes and Posner recognize that with differentiated products one may get the "wrong" answer when using their definition of a firm's market power as the firm's own elasticity of demand.[64] They refer to Lester G. Telser's studies of individual brand elasticities of demand for brands of orange juice, coffee, beer and other products, where the majority of estimated firm own elasticities fall between 2.5 and 5.[65] This implies prices that are between 25 percent and 67 percent greater

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63 Id at 962.

64 Id at 956–957.

65 The studies are summarized in Lester G. Telser, *Competition, Collusion and Game Theory* 274–306 (Macmillan, 1972).

than marginal cost. Landes and Posner recoil from the idea that these firms, which are earning modest rates of return and have small market shares, possess significant market power. They conclude that "[i]n these circumstances, mechanical application of the Lerner index would incorrectly suggest the existence of a monopoly problem."[66] However, instead of rethinking their definition of market power, after this brief aside they go on with their same homogeneous products analysis, using the same, inappropriate economic definition of a firm's market power in terms of the firm's own elasticity of demand.

When products are differentiated it is more useful to think of a firm's output as consisting of two elements, one firm-specific element that makes the firm's demand curve downward sloping (and permits the firm to set its price above marginal cost) and another generic element, where the firm's output is part of a broader, homogeneous market. It is only when a firm can have a significant impact in this generic market, as determined by the standard economic analysis employed by Landes and Posner, that the firm can usefully be said to have market power. When a firm's market share is low, as it is for the branded goods analyzed by Telser, then the firm does not have any market power. Although such firms may not have a very elastic demand for their products because of the firm-specific element of its output, such firms do not have the ability to influence market conditions.

Looking at the ability of a firm to influence *market* conditions, rather than focusing on a firm's *own* elasticity of demand, is broadly consistent with how "competition" and "monopoly" or "market power" is used in antitrust case law. Landes and Posner disagree, claiming that the law is consistent with an own elasticity of demand definition of market power. Landes and Posner begin their analysis of the case law with "the authoritative judicial definition of market power set forth in the *Cellophane Case:* 'the power to control prices or exclude competition.'"[67] Landes and Posner claim that "[t]he first part of this definition seems equivalent to the economic definition of market power,"[68] namely a firm's own elasticity of demand. However, there is

[66] Landes and Posner, *Market Power* at 957 (cited in note 56).

[67] Id at 977 (citing *United States v E. I. duPont de Nemours & Co.*, 351 US 377, 391 (1956)).

[68] Landes and Posner, *Market Power* at 977 (cited in note 56).

ambiguity in this and many other similar judicial statements. Does "the power to control prices" refer to a firm's ability to control its own prices or to the power to control market prices? In the *Cellophane Case,* this ambiguity is resolved if one considers the entire opinion. The Court clearly is not referring to duPont's own elasticity of demand, i.e., the power of duPont to control or set its *own* prices. Despite the evidence that duPont could "control" the prices at which it sold cellophane, the Court concluded that duPont did not have market power.[69] The market was broadly defined as "flexible wrapping materials" and duPont did not have the power to control prices and quantities in this market.[70] Moreover, the Court considered the differentiated-products case and explicitly rejected the idea that a firm's ability to control its own product prices determines whether a firm has market power. The Court stated:

> [O]ne can theorize that we have monopolistic competition in every nonstandardized commodity with each manufacturer having power over the price and production of his own product. However, this power that, let us say, automobile or soft-drink manufacturers have over their trademarked products is not the power that makes an illegal monopoly. Illegal power must be appraised in terms of the competitive market for the product.[71]

This is an unambiguous rejection of Landes and Posner's interpretation of the definition of market power given in the *Cellophane Case.* The *Cellophane* court was clear that the perfectly competitive benchmark should not be used to define market power.

[69] The record evidence indicated that duPont was lowering cellophane prices over time in order to increase its share of the market. (For example, Findings 135 and 142, Appendix C.) Moreover, there was evidence (ignored by the Court) that duPont's price was high relative to its cost. (Finding 714 and R. 4155, Appendix C.) Chief Justice Warren, in dissent, stated: "DuPont's independent pricing policy and the great profits consistently yielded by that policy leave no room for doubt that it had the power to control the price of cellophane. The findings of fact cited by the majority cannot affect this conclusion." *United States v E. I. duPont de Nemours & Co.*, 351 US 377, 423 (1956) (Warren dissenting).

[70] I should note that I am not necessarily agreeing with the actual decision reached in this case, that is, whether duPont possessed market power, but only elucidating the logic of the Court's definition of market power.

[71] 351 US at 393 (citation omitted).

In the overwhelming majority of antitrust cases that define market power in a way that allows one unambiguously to distinguish a reference to a firm's own elasticity of demand from a reference to a firm's ability to impact the market, the courts clearly use the latter definition and define market power as the ability of a firm to influence market outcomes. The number of cases that explicitly adopt the alternative (economic or perfect competition) definition of market power, where market power is defined in terms of a firm's own elasticity of demand, is extremely small. Judge Posner himself is one of the few jurists who has attempted to use this economic definition in his decisions. For example, in *Valley Liquors, Inc. v Renfield Importers, Ltd.*, he defines market power as "the power to raise price significantly above the competitive level without losing all of one's business."[72] More recently, in *Olympia Equipment Leasing Co. v Western Union Telegraph Co.*, Judge Posner refines his definition, no longer requiring a firm with no market power to lose all of its sales when it increases its price, but rather defining market power as "the power to raise prices without losing so much business that the price increase is unprofitable."[73] This unambiguously defines market power in terms of individual firm, rather than market, impacts.[74] Judge Posner cites as support for this definition a decision by Judge Easterbrook in *Ball Memorial Hospital, Inc. v Mutual Hospital Insurance Inc.*[75] However, Judge Easterbrook defines market power in *Ball Memorial Hospital* as "the ability to cut back the market's total output and so raise price," a clear reference to the alternative, more useful "market impact" definition of market power.

The definitions of market power used in tying cases are also broadly consistent with the idea that a firm with market power in the tying good must have the ability to affect market outcomes and not just the ability to control its own prices. The Court in *Jefferson Parish*, in

72 678 F2d 742, 745 (7th Cir 1982).

73 797 F2d 370, 373 (7th Cir 1986).

74 The definition does not necessarily lead to incorrect conclusions because it states a necessary (but not a sufficient) condition for the presence of market power. It is true that a firm whose own elasticity of demand is high does not have market power, but it is not true that a firm whose own elasticity of demand is low necessarily has market power.

75 784 F2d 1325, 1335 (7th Cir 1986).

fact, explicitly disavows the usefulness of the perfectly competitive model as a relevant benchmark by which to define market power. Referring to the reliance by the court below on "market imperfections," namely imperfect consumer information regarding the quality of health care provided by hospitals and the prevalence of third-party payment, as a basis for maintaining that hospitals could charge "non-competitive" prices for hospital services, the Supreme Court concludes: "While these factors may generate "market power" in some abstract sense, they do not generate the kind of market power that justifies condemnation of tying."[76] After the phrase "'market power' in some abstract sense" the Court supplies the following footnote: "As an economic matter, market power exists whenever prices can be raised above levels that would be charged in a competitive market."[77] Therefore, this reference to abstract or economic market power in *Jefferson Parish* amounts to an explicit rejection by the Court of the usefulness of the perfectly competitive economic definition of market power.[78]

Although few antitrust decisions define market power in a way that confusingly substitutes a firm's own elasticity of demand for a firm's potential to impact market outcomes, the tying decisions that refer to the "uniqueness" of a firm's product as evidence of market power come closest to making this error. However, in *Fortner II* the Supreme Court declared that unless "uniqueness" bestows upon a firm "some advantage not shared by his competitors in the market . . . the

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[76] *Jefferson Parish Hospital District No. 2 v Hyde,* 466 US 2, 27 (1984) (footnote omitted).

[77] Id at 27 n 46 (citing *Fortner II,* 429 US at 620).

[78] The Court also recognized in *Jefferson Parish* that the assumption of consumer omniscience made in the perfectly competitive model cannot be the standard by which to judge whether markets are functioning competitively. Under such a standard no market would be competitive. Purchasers acquire the economically relevant amount of information—where marginal cost of acquiring the information equals the expected marginal benefit to be derived from the information. If the quantity of information produced in an unregulated market is particularly low, it implies a potential consumer deception or fraud problem that may be solved with government regulations that facilitate the information gathering and evaluation process, such as truth-in-lending laws, or that prohibit the sale of certain products, such as health and safety laws. It does not imply a market power problem that should be solved with antitrust litigation. See Craswell, *Tying Requirements* (cited in note 33).

seller's product does not have the kind of uniqueness considered relevant."[79] Since *Fortner II* the search for uniqueness entails a search for market power, not individual firm pricing discretion.[80]

The second part of the Court's market power definition in the *Cellophane Case* regarding a firm's power to exclude competition also clearly refers to the market and not to the individual firm. In fact, the Court appears to claim that market price cannot be controlled without the ability to exclude competitors (for example, by the presence of barriers to entry). "Price and competition are so intimately entwined that any discussion of theory must treat them as one. It is inconceivable that price could be controlled without power over competition or vice versa."[81] This idea that market power in the sense of control over market price can exist only if there are significant barriers to entry has

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[79] 429 US at 620–21.

[80] The Seventh Circuit decision in *Will v Comprehensive Accounting Corp.*, 776 F2d 665, 672 (7th Cir 1985) (Judge Easterbrook), made perhaps the most aggressive statement of this proposition when it declared that a finding of "uniqueness" must be supported by evidence of "a barrier to entry that prevents competition" and that "'uniqueness' means the inability of a seller's rivals to offer a similar package, not simply the fact that no rival has chosen to do so." The decision in *Thompson v Metropolitan Multi-List, Inc.*, 934 F2d 1566, 1576–78 (11th Cir 1991), accepts this standard of uniqueness, declaring a multiple listing service unique because of a lack of realistic alternatives and the existence of significant entry barriers.

Jefferson Parish endorses in dictum the notion that the uniqueness of a copyrighted or patented tying product may be presumed to imply sufficient market power. More recent court decisions, however, have refused to accept this presumption or have emphasized that the presumption is rebuttable. See, for example, *A.I. Root Co. v Computer/Dynamics, Inc.*, 806 F2d 673, 676–677 (6th Cir 1986). Since *Jefferson Parish* and the focus on market competition, many courts have declared that unique trademarks do not create any market power. See, for example, *Mozart Co. v Mercedes-Benz of North America, Inc.*, 833 F2d 1342 (9th Cir 1987). *Mozart* also contains a perceptive analysis of the relevant market, noting that uniqueness of an automobile brand to consumers does not establish uniqueness in the relevant market where the tie is imposed, namely the market for dealership franchises. Id at 1346–47. A similar point is made in many other decisions. See the cases cited in note 18.

[81] 351 US at 392.

more recently been emphasized by the courts in *Syufy*[82] and *Baker Hughes.*[83]

It is important to emphasize that this "ability to exclude" element of the definition of market power is not referring to exclusion in the sense of Kodak's "exclusion" of ISOs. "Exclusion" such as Kodak's can be a very general phenomenon; it occurs, for example, whenever a firm chooses a particular exclusive distributor of its product. If a firm vertically integrates into distribution, would that necessarily be anticompetitive? Obviously not. As discussed above, would it matter if popcorn suppliers existed before a movie theater instituted its "tying arrangement" and were then "excluded" by the theater's tie? It is true that the *Kodak* Court likely would have perceived things differently if Kodak had vigorously enforced its tie from the beginning—not only because it would imply that customers expected the tie at the time they negotiated their contracts, before they made their specific investments, but also because ISOs would not have been driven out of business. However, the "exclusion" of *potential* ISO competitors that would have then occurred is, in principle, just as anticompetitive as driving out actual competitors.

This type of "exclusion" is a misleading thing to look for. Remember, even in *Jefferson Parish* an anesthesiologist was "excluded." The Court claimed in *Jefferson Parish* that this was not "anticompetitive forcing" because buyers were not forced to do something they would not do in a competitive market.[84] But how do we know what results would obtain in competition? All ties, by definition, involve "forcing" in the sense that if buyers would voluntarily choose the tied good, there would be no need for the tie contract. The search for "anticompetitive forcing," therefore, merely requires us to search for "market power."

The question is whether a firm uses its "market power" to drive competitors out of "the market." The crucial question then is how to

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82 *United States v Syufy Enterprises,* 903 F2d 659, 664–66 (9th Cir 1990).

83 *United States v Baker Hughes Inc.*, 908 F2d 981, 987 (DC Cir 1990).

84 466 US at 14.

define the relevant product market in which the firm is operating.[85] Defining the market is the key step of our analysis, which ignores evidence of a firm's own elasticity (and whether the firm is engaging in price discrimination) and concentrates instead on evidence of a firm's ability to impact the market and the ability to exclude competitors into the market (by considering firm market share and other firm supply elasticity evidence). One could define a relevant product market using the Merger Guidelines procedure, where substitutes are ranked (in terms of cross elasticities of demand) and progressively added to the firm's output until the firm can profitably increase the price of the combined firm's output five percent, at which point we have defined the relevant product market. In our illustrative example of a small breakfast cereal manufacturer, the firm may face many relatively weak substitutes for its particular differentiated product and this process may have to continue until a large number of competing brands are included in a relevant product market, in which the firm would have a small share.[86]

There is a danger, however, of defining markets too broadly with this methodology because of what has been come to be known as "the *Cellophane* fallacy."[87] The *Cellophane* Court defined the market as "flexible wrapping materials" because cellophane substituted (was

[85] We could never assert, as Landes and Posner do, that "market definition is important in determining whether a firm has market power (and how much it has) only because of the difficulty of measuring elasticities of demand and supply reliably. If we knew the elasticity of demand facing firm i, we could measure its market power directly, using equation (I) [the Lerner Index], without troubling ourselves about what its market share was." Landes and Posner, *Market Power* at 962 (cited in note 56). Even if one knew a firm's own demand elasticity, it would be necessary to define the relevant product market and measure a firm's market share to know if the firm possessed antitrust market power, that is, to determine if the firm could influence market prices.

[86] The Merger Guidelines explicitly recognize the existence of product differentiation, noting that the regulator will consider the share of sales in the market accounted for by consumers who regard the products of the merging firms as their first and second choices. U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines*, 62 Antitrust & Trade Regulation Report No. 1559, § 2.21 (Special Supplement, April 2, 1992).

[87] See, for example, Landes and Posner, *Market Power* at 960–61 (cited in note 56).

"reasonably interchangeable") for other flexible wrapping materials.[88] But this substitutability existed at the profit maximizing price of cellophane. The duPont company may have had monopoly power in cellophane and may have increased the price to the monopoly level, at which point significant substitutability existed. For proposed mergers this is not a problem because we are concerned about *changes* in market power, but for Sherman Act cases, such as *Kodak,* this is a problem because we are concerned about the *existing* level of market power. Measuring the extent of existing market power is difficult because every firm faced with a negatively sloped demand is pricing in the elastic range of its demand curve. What is the difference between Telser's individual branded products and duPont's cellophane in terms of using substitutability on the margin to determine the relevant product market? Solving this problem is beyond the scope of this paper. But it is important to recognize that, however the problem is eventually solved, a useful definition of relevant product market cannot coincide with an individual firm's output in all differentiated product cases because monopoly power would then become pervasive.

V. Conclusion

The *Kodak* reasoning has limited antitrust applicability. *Kodak* does not contradict the general economic conclusion that market power should be determined at the point in time when buyers enter into a contractual arrangement, before they make any specific investments and are "locked-in." Therefore *Kodak* does not apply to the overwhelming majority of tie-in cases, such as franchise agreements that include tying terms as part of the original, negotiated agreement. *Kodak* only applies to cases where a change is made in the terms of the original contractual arrangement, namely where a tie is imposed unexpectedly. If buyers have made specific investments in the interim, so that the changed contract terms involve a "hold-up," *Kodak* suggests that the change may be considered an abuse of market power.

This statement of *Kodak* suggests very broad applicability of the opinion to what are essentially contract disputes, such as our example of a landlord-tenant dispute. One can, however, read *Kodak* as further distinguishing between "contract hold-ups" of the simple landlord-tenant dispute type and "monopoly hold-ups" based on the par-

[88] 351 US at 399–400.

ticular form the "hold-up" takes. A "monopoly" problem may be said to exist only if the "hold-up" is accomplished by imposing a tie, rather than by just increasing a price. For example, if a landlord "holds-up" a "locked-in" law firm tenant by increasing parking prices, we have a "contract hold-up." If, on the other hand, the landlord "holds-up" the law firm tenant by requiring the law firm, if it wishes to purchase parking in the building, to also purchase messenger services exclusively from the landlord, we may be said to have a "monopoly hold-up." While a tie of messenger services to parking in a building where one has made specific investments seems unreasonable, the key question for antitrust law is whether it involves an abuse of market power. Just because a firm may face a negatively sloped demand at a particular point in time, which permits it to engage in such a "hold-up," does not mean that the firm possesses market power. And are there any real differences in this situation from the case where a firm just increases a price?

Another problem is that a rule focusing on the imposition of unexpected ties may be easier to state in principle than to administer in practice. For example, how does one produce evidence of buyer expectations regarding the likelihood of a future tie? Some may maintain that even the fact that a seller discloses the existence of a tie before buyers make their specific investments does not mean that buyers are necessarily "aware" of the tie. For example, an FTC survey of franchisees concluded that franchisees were often unaware of the tying requirements imposed by their franchising agreements or of what the likely costs of such a tie may be.[89] Similar reasoning was used by the court in *Chicken Delight.*[90]

[89] Disclosure Requirements and Prohibitions Concerning Franchising and Business Opportunity Ventures, Trade Regulation Rule and Statement of Basis and Purpose, 43 Fed Reg 59614, 59656–57 (1978).

[90] "The franchisees' apparent willingness to pay the ultimate cost of the arrangement [by signing the franchise agreement] is clouded by the fact that they may well have been unaware of what that cost would come to in practice. Had the full amount of the over-charge on the tied items been openly specified as the cost of the tying items, agreement might not have been forthcoming." *Siegel v Chicken Delight, Inc.*, 448 F2d 43, 52–53 (9th Cir 1971). However, this alleged ignorance of Chicken Delight franchisees is inconsistent with the evidence that the franchisees did not pay greater than competitive prices for the entire franchising package. See note 19 above.

Opening up an antitrust investigation to a study of buyers' expectations and giving weight to survey evidence opens a Pandora's Box that makes it essentially impossible for sellers to protect themselves fully against antitrust liability. Asking transactors what they thought their contract terms meant and what risks they believed they assumed seems clearly to be a question for contract law rather than for antitrust. Antitrust law should concentrate primarily on whether the contract terms are anticompetitive at the point in time a contract is signed.

An obvious unanswered question remains: Under what conditions can changes in contract terms be made without creating antitrust liability? Kodak clearly made an effort to make its changes prospective, but this appears to have been legally unsuccessful. Does *Kodak* imply that it is necessary for sellers to explicitly write (and vigorously enforce) tie-in terms in their contractual arrangements from the very beginning of their entry into the market? If no changes whatsoever can be made in a contractual arrangement without leading to antitrust liability, sellers would have the incentive to write and rigidly enforce contract terms that they would not have included in their contracts if they had an option to adopt the terms at a later time. Such an interpretation of *Kodak* would substantially hinder the normal competitive contracting process, where contractual arrangements often are renegotiated and evolve efficiently over time as conditions change.

It should also be recognized that even if a tie is imposed by a contract change after buyers have made specific investments, this does not necessarily imply antitrust liability under *Kodak*. In addition, the Court requires an empirical investigation to determine if a "hold-up" is actually occurring. This empirical investigation is designed to determine whether the short-term gains outweigh the long-term losses from the contract change. However, a simple calculation of the profitability of a firm's contract change, by itself, gives us little information regarding whether a "hold-up" is occurring. Since we can assume that every contract change is expected to be profitable if the firm initiating the change is rational and reasonably well-informed, the calculation tells us little about the firm's motivation for the change. For example, the imposition of a tie may be a profitable strategy not because the firm is engaging in a "hold-up," but because the firm is reacting to an unanticipated change in market conditions. The contractual adjustment leaves essentially unchanged a package price that would have unexpectedly fallen if the tie were not instituted. This may explain, for example, a case like *Data General.*[91] Better evidence than profitability calculations for the absence of a "hold-up" may be evidence that new sales and profit do not change or that buyers do not demand new contractual protections after the tie is imposed.

What is especially troubling about the economic reasoning in *Kodak* is not the particular substantive conclusions and antitrust liability rules regarding "hold-ups" suggested by the opinion, but the underlying economic idea that one can search for possible "market imperfections," or deviations from the perfectly competitive model, and then label such deviations as antitrust market power. Whether Kodak employed a tie to "hold-up" its "locked-in" customers or, as I believe is more likely, to discriminate between different types of customers, Kodak's behavior is inconsistent with the assumptions of the perfectly competitive model. Kodak certainly did not face either a short-run or long-run demand curve that was perfectly elastic. However, firms such as Kodak that face negatively sloped demand curves do not necessarily possess any antitrust market power. Discriminatory marketing arrangements and "hold-up" possibilities are pervasive throughout the competitive economy. To reach reasonable conclusions, "antitrust market power" must not be defined in terms of a firm's own elasticity of demand, but by the ability of a firm to significantly impact market output and prices. This definition of market power, which is fundamentally consistent with most previous case law, does not place any significance on a firm's ability to price discriminate or to temporarily engage in a "hold-up."

Economists, on the other hand, are prone to label every real world deviation from the perfectly competitive model, such as the existence of price discrimination or "hold-ups," as "market imperfections," with the implication that such "imperfections" require fixing. However, one must be careful to distinguish between market arrangements that exhibit a "social imperfection" (for example, that property rights in the air are not defined, thereby creating a "distortion" relative to the perfectly competitive model with regard to the excess production of pollution) and market arrangements that exhibit a "private imperfection," in the sense that part of a privately negotiated contract among a limited

[91] *Digidyne Corp. v Data General Corp.*, 734 F2d 1336 (9th Cir 1984). See note 32 above.

number of transactors may not coincide with the perfectly competitive result (for example, that popcorn prices are "high" in movie theaters). While it may very well be possible to "correct" what we call "social imperfections" by a change in regulation (although one must be careful not to do "blackboard economics" and ignore the full incentive and enforcement costs of any proposed regulation), it is reasonable to assume that "private imperfections" have been determined optimally in the marketplace, with individuals and firms deciding on what they jointly believe minimizes costs. If there were a "better" contractual arrangement, firms would have an incentive to find and use it.

This, of course, assumes that competition exists in the marketplace where contractual arrangements are being determined. But one would not want to beg the question of whether competition exists by assuming whenever we observe, for example, a discriminatory marketing arrangement that competition does not exist. Market power cannot usefully be measured by deviations from the perfectly competitive model. We certainly would not want to use the government's antitrust enforcement budget to minimize the gaps between price and marginal cost, weighted by output, across the economy. Do we really think the government should, for example, be attacking supermarket coupons and other discriminatory devices? Should the antitrust laws be concerned about fully anticipated "high" popcorn prices in movie theaters? Antitrust should be concerned with the degree of competition present when contractual arrangements are formed between consenting transactors, not with whether the particular terms competitively chosen by transactors are "inefficient" based upon some abstract standard of perfect competition.[92]

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[92] Some economists disagree. For example, Borenstein, Mackie-Mason and Netz argue that a tie is anticompetitive even if it is anticipated (and, therefore, the tie is just the form of the total package price) because such a marketing arrangement implies that the price of one element differs from marginal cost and "inefficient" substitutions are made by consumers. Severin Borenstein, Jeffrey K. Mackie-Mason and Janet S. Netz, *The Economics of Customer Lock-In and Market Power in the Service Business* (unpublished paper, Dec 2, 1992), forthcoming in P. Harker, ed, *The Service Productivity and Quality Challenges* (Kluwer). The Court in *Kodak* disagrees with this idea, concluding at the very end of the opinion that there would be no antitrust problem if Kodak's overall package price were found to be competitively set. 112 S Ct at 2092.

The abstract model of perfect competition is an extremely useful analytical device. The model provides us with categories that permit us to analyze the basic economic forces or causal relationships at work in many situations and, therefore, provides us with accurate predictions in these situations. For example, the perfectly competitive model may be useful in analyzing the effect on industry price and output of an increase in the excise tax on gasoline. However, it is important to remember that the perfectly competitive model is merely an abstract economic construct, not a criterion for governmental intervention in the marketplace. In particular, it makes no sense to assume that any deviations from the unrealistic assumptions of the perfectly competitive model represent "imperfections" that should be eliminated as a way to increase competition and reduce market power. As the Court emphasized in *Jefferson Parish,* while "market imperfections" may "generate 'market power' in some abstract sense, they do not generate the kind of market power that justifies condemnation of tying."[93]

Once we drop the perfectly competitive model as a policy standard we recognize that the competitive process—where firms attempt to obtain or strengthen their "monopoly" positions by creating differentiated products that are sold at higher price—cost margins—produces value for consumers. A firm's return from increased differentiation is the return from increasing the demand for its product at all prices above its current price. (The fact that the demand may rotate around the current price so that demand decreases at all prices below the current price is not of any value to the firm.) Moreover, when production requires relatively large fixed costs, the ability to create differentiated products may be a crucial determinant of the very existence of a product. For example, if computer software suppliers could not differentiate their products and price above marginal cost, the amount spent on R&D for new software development would be drastically reduced.[94]

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93 466 US at 27.

94 Some commentators have claimed that the competitive process is socially costly, not because of the deviation from what would be the perfectly competitive result, but because of rent dissipation. For example, Posner argues that the major social cost of monopoly is the real resources dissipated by firms competing against one another for the right to be monopolists. Richard A. Posner, *The Social Costs of Monopoly and Regulation,* 83 J Pol Econ 807

One could argue that deviations of price from marginal cost are "in principle" a legitimate target for antitrust enforcement, but that one must consider all the economic costs associated with any alternative arrangement one is attempting to create by regulatory intervention.[95] However, this insight appears to require us to undertake a complete economic analysis of every situation before we can reach a policy conclusion. It would be extremely difficult for the courts, with their limited time and resources, to understand what possible pro-competitive result is being accomplished with every single marketing practice and what alternatives might exist to accomplish the same result, including understanding all the short-run and long-run effects that would follow from all these alternatives. The courts require simpler policy guides to determine when market power exists and how significant that market power is. Established policy guides, which require us to determine a firm's share in a relevant market and the likely supply responses by existing firms and potential entrants to any increase in prices in this market, can continue to serve the Supreme Court and the economy well.

Finally, despite much of what has been said about *Kodak*'s supposed rejection of economic theory, *Kodak* can be expected to increase

(1975). Further, he argues that because the ability to price discriminate increases the incentive to monopolize, price discrimination is likely to increase the expenditures made on obtaining monopolies and, therefore, these deadweight social costs of monopoly. Richard A. Posner, *The Robinson-Patman Act: Federal Regulation of Price Differences* (American Enterprise Institute, 1976). Unfortunately, Posner is not distinguishing between expenditures devoted to obtaining a monopoly on a pre-existing asset that is created by governmental decree and expenditures made to create a "monopoly" that does not have its source in governmental action. It is true that resources devoted to establishing property rights on a pre-existing asset, such as resources devoted to bribing government officials for an exclusive right to operate taxicabs within a municipality, is merely redistributive wasteful rent dissipation. However, when firms engage in the competitive process by spending money on research, product development, and marketing innovations in the attempt to acquire market positions in which they can exploit negatively sloped demand curves with the use of discriminatory marketing arrangements, it is not merely redistributive since the firms are competing to create property rights on new valuable assets.

[95] This is the fundamental insight in Harold Demsetz, *Economics as a Guide to Antitrust Regulation*, 19 J L & Econ 371 (1976).

the demand for economists, at the very least in order to analyze "hold-up" problems to determine whether they involve an abuse of market power. Hopefully, the increased use of economists will provide the Supreme Court with increased economic insights into the competitive process. Unfortunately, I fear the result may be the opposite. Although economics has had a beneficial influence on antitrust law, the reasoning in *Kodak* suggests that economists can have a large influence merely by presenting theoretical models that demonstrate how the market may "fail"—in the sense of not producing the perfectly competitive result. The Court should not follow economists down this path. While it is laudable that judicial decisions are becoming more economically sophisticated, the Court should resist using the economist's model of perfect competition as the relevant standard of antitrust market power.