

PATENT MISUSE AND ANTITRUST REFORM: "BLESSED BE THE TIE?"

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One of the purposes of this bill is to deter misuse claims that unnecessarily burden infringement litigation. It would thus be a tragedy if this legislation made patent infringement actions more complicated and protracted, rather than simpler and shorter.¹

INTRODUCTION

Tying arrangements, in which a party agrees "to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier,"² have long been suspect in intellectual property and antitrust law. Under varying circumstances, tying arrangements may have such legal consequences as patent unenforceability,³ and criminal prosecution or treble damages under antitrust laws.⁴

Until 1988, per se misuse of a patent resulted from a patentee's attempt to "extend" the patent right to control the market in unpatented staple commodities, "whatever the nature of the device by which the owner of the patent seeks to effect such unauthorized extension of the monopoly."⁵ The strict patent misuse doctrine has been paralleled by an antitrust rule against tying, providing that an antitrust violation results

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1. 134 CONG. REC. S17,148 (daily ed. Oct. 21, 1988) (remarks of Senator Leahy (D-VT) on the patent misuse provisions of H.R. 4972, 100th Cong., 2d Sess., enacted as Pub. L. No. 100-703, tit. II, § 201, 102 Stat. 4676 (1988)).

2. *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5-6 (1958).

3. See *infra* notes 103-106 and accompanying text.

4. See *infra* notes 126-30 and accompanying text.

5. *Leitch Mfg. Co. v. Barber Co.*, 302 U.S. 458, 463 (1938). Cf. *Recent Development, Intellectual Property Misuse: Recent Developments in the Misuse Doctrine*, 4 HARV. J.L. & TECH. 257 (1991) (this issue) (for an analysis of the recent extension of the misuse doctrine into the copyright area).

when sufficient market power exists with respect to the tying product to restrain appreciably free competition in the market for the tied product, and a not insubstantial amount of commerce in the tied product is affected.⁶ However, where the tying product is patented, no showing of actual market power has been required for an antitrust violation, since in such circumstances it has been presumed that the inability to buy the product elsewhere provides the seller with market power.⁷ Accordingly, the sale or lease of a patented invention on the condition that the buyer purchase a separate tied product from the patentee has also constituted a per se violation of the antitrust laws.⁸

The 1988 amendment of the patent infringement statute⁹ has swept away the long-standing doctrine that tying of an unpatented staple constitutes per se patent misuse, with little legislative indication of what practices are now specifically permitted by a new exception carved out from over seventy years of patent¹⁰ and antitrust law.¹¹ Although the patent misuse defense is preserved, under Section 271(d) of the patent infringement statute, a defendant may raise this equitable bar to recovery for infringement only if "in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product" on which a tying sale is conditioned.

This revision of the patent code proceeded from extensive criticism of the antitrust tying doctrine, particularly the market power presumption from patent ownership, by economic theorists, who maintain that tying arrangements often fail to satisfy theoretical requisites for the

6. See *infra* notes 128-30 and accompanying text.

7. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 16 (1984).

8. See *infra* notes 143-146 and accompanying text.

9. Two new subsections were added to 35 U.S.C. § 271(d) by the Patent and Trademark Authorization Act of 1988, Pub. L. No. 100-703, Title II, § 201, 102 Stat. 4676 (1988). The amendment was included in authorization legislation for the U.S. Patent & Trademark Office, H.R. 4972, 100th Cong., 2d Sess. (1988). A separate Intellectual Property Antitrust Protection Act of 1988, S. 438, 100th Cong., 2d Sess., was passed by the Senate on October 4, 1988. When the Senate received H.R. 4972, it approved an amendment adding the text of S. 438 as Title II, and passed the bill as amended on October 14, 1988. On reconsideration, the House deleted the provisions of Title II concerning presumptions of market power from intellectual property rights, and passed the amended bill on October 20, 1988. On October 21, the Senate concurred in the House amendment, and the bill was signed into law on November 19, 1988.

10. The rule against "extension" of the patent monopoly to tied, unpatented staples originated in *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

11. The decision in *Motion Picture Patents* was based on the express prohibition of tying contracts by Congress in § 3 of the Clayton Act of 1914, Pub. L. No. 63-212, ch. 723, § 3, 38 Stat. 730, 731 (current version at 15 U.S.C. § 14 (1982)). On the close historical relationship of patent and antitrust tying principles, see *infra* notes 153-223 and accompanying text.

"extension" of monopoly. The degree of market power required to establish patent misuse was not specified by Congress, and the legislative history indicates that the construction of the statute is to be left to the courts.¹² In view of the increasing influence of the economic debate over antitrust market power in antitrust law, the economic theory concerning tying arrangements in the antitrust context is likely to be significant in the interpretation of the patent misuse provision.

This Article examines the 1988 revision of the patent statute, and its relation to parallel antitrust policy, to determine the extent to which traditionally prohibited practices should now be permitted, and to consider the appropriate standard for market power in the specific context of patent misuse. A review of the patent rule against tying, and the relationship of patent and antitrust principles, which are now bridged by the concept of "market power," is particularly desirable in view of the prospect of further statutory "reform" of antitrust and patent law.¹³

A critical measure of market power in antitrust law and economic theory has been the availability of substitutes for the tying product, since where substitutes are available, the seller cannot exact excess "monopoly" profits and no danger of anticompetitive effects exists. While such a criterion may be suitable to determination of market power in many antitrust contexts, the proof required has been characterized as "enormously time consuming and expensive, as well as delusive,"¹⁴ requiring consideration of such factors as market share, functional attributes of potential substitute products, and economic pricing concepts, such as marginal cost, that are difficult if not impossible to ascertain.¹⁵

Critics of the antitrust market power presumption from patent ownership have failed to consider that the determination of economic market power, which presents formidable problems of proof, is further complicated by the legal market power conveyed by a patent, which is not limited to the literal scope of the patent claims, but extends to functionally equivalent substitutes. Patent misuse market power analysis should avoid consideration of such traditional antitrust factors as market share

12. See *infra* notes 553-59 and accompanying text.

13. Although Congress amended the patent code to require market power for patent misuse, the House rejected an amendment that would have eliminated the presumption of market power in antitrust law from ownership of a patent. See S. 438, 100th Cong., 2d Sess. § 102, set forth *infra* note 150. Subsequent bills renewed this effort to eliminate the antitrust presumption. See, e.g., S. 270, 101st Cong., 1st Sess. § 2 (1989); H.R. 469, 101st Cong., 1st Sess. § 2 (1989); S. 198, 101st Cong., 2d Sess. tit. IV, § 401 (1990) (Substitute Amendment No. 3086).

14. Brown, *The Intellectual Property Antitrust Protection Act of 1987*, 1 HARV. J.L. & TECH. 209, 214 (1988).

15. See the sources cited *infra* note 442.

and the availability of substitutes, since even if it were possible to determine that acceptable functional substitutes exist in an economic sense, it would be necessary to undertake a separate legal inquiry into the scope of patent claims under the doctrine of equivalents. Precisely the factors that would indicate the existence of perfect economic substitutes, thus negating market power under antitrust principles, would also indicate that these "substitutes" are equivalents of the patented product, and infringe the patent even if they are outside the literal scope of the patent claims. The complexity of the antitrust economic market power analysis would be compounded by the requirement of determining the market power conferred upon a patentee by law under the doctrine of equivalents.

In accordance with the congressional desire to make patent infringement actions simpler and shorter,¹⁶ it is far preferable to adopt an interpretation of the patent misuse market power standard that would avoid economic factors such as market share or the existence of substitutes, in favor of indicia earlier applied in the antitrust context, such as the tying product's uniqueness, desirability to consumers, or distinctiveness in the often very narrow market for the patented product. Alternatively, such pragmatic considerations as the existence of licenses, or factors which would support a reasonable royalty as damages for patent infringement, would provide direct evidence of market power.

Although my principal focus is market power in patent misuse, the critique supplied by economic theory is directly applicable to the antitrust presumption of market power resulting from ownership of a patent. Particularly in view of the legal market power conferred upon a patentee under the doctrine of equivalents and the thin markets for many patented inventions, the historical antitrust presumption of market power from patent ownership retains its usefulness, for reasons that do not hold for copyrights or other statutory exclusive rights of narrower scope.

In my analysis, Part I examines the statutory amendment modifying the traditional rule that a tying arrangement involving a patented product constitutes misuse rendering the patent unenforceable, and the historical foundation of the patent doctrine. The antitrust per se prohibition of tying is considered in Part II, which traces the history of antitrust tying theory. Part III analyzes the economic critique of the antitrust per se rule and the presumption of market power from ownership of a patent. Part IV returns to the statutory misuse provision, and weighs the appropriateness of using the established antitrust market power analysis to determine market power for patent misuse purposes.

16. See the statement of Senator Leahy, *supra* note 1.

I. THE STATUTORY PATENT MISUSE STANDARD

A. *The Statutory Amendment*

The addition of two new subsections to the patent infringement statute¹⁷ has fundamentally altered the judicially-fashioned doctrine of patent misuse, with respect to the sale of a patented product or process¹⁸ tied to the purchase of unpatented staple supplies or components or tied to licenses of separate patents.¹⁹ The amendment introduces a threshold requirement of "market power" in the patented tying product, before the affirmative defense of patent misuse may be asserted. Section 271(d) now provides:

No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done any of the following:

...

(4) refused to license or use any rights to the patent; or (5) conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power

17. Prior to amendment, the first four subsections of 35 U.S.C. § 271 (1982) provided:

- (a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.
- (b) Whoever actively induces infringement of a patent shall be liable as an infringer.
- (c) Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.
- (d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement.

18. The term "product" is used herein to refer generally both to products, such as articles of manufacture or compositions, and to processes.

19. See *infra* notes 21-43 and accompanying text.

in the relevant market for the patent or patented product on which the license or sale is conditioned.²⁰

These changes are in part noncontroversial codifications of principles well-established in the case law, and in part radical departures from settled rules of law. The two new subsections deal not only with tying arrangements, which will be discussed at length below, but also with refusal to license patent rights, failure to use the patented invention, and package licenses, which are first briefly considered.

1. Refusal to License or Use Rights to the Patent

It is clear that prior to the amendment there was no duty to license another to make, use or sell a patented invention,²¹ which are the basic exclusive rights granted by a United States patent.²² The right of the patentee to prevent others from practicing the invention has long been regarded as absolute,²³ and Section 271(d)(4) was intended only to codify this established principle.²⁴

A patentee is entitled to exact as high a price for the patented technology as the market will bear, i.e., to exercise "monopoly" power in the sense of setting a supracompetitive price, without restriction either under

20. 35 U.S.C. § 271(d) (1988).

21. See, e.g., *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 215 (1980); *W.L. Gore & Assocs. v. Carlisle Corp.*, 529 F.2d 614, 623 (3d Cir. 1976); *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195, 1204 (2d Cir. 1981), cert. denied, 455 U.S. 1016 (1982).

22. See 35 U.S.C. § 271(a) (1982). A patent confers the separate rights to exclude others from making, using, or selling the invention in the United States, as well as the right to prevent others from importing, selling, or distributing products in the United States made by a patented process in a foreign country, see 35 U.S.C.A. § 271(g) (Supp. 1989), and to exclude others from making the components of a patented product for assembly abroad. See 35 U.S.C. § 271(f) (Supp. II 1984). Separate analysis of these provisions is not required for the purposes of this article.

23. See, e.g., *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 423-24 (1908) (suggesting that the Constitution requires an absolute monopoly in the patent grant); *Henry v. A.B. Dick Co.*, 224 U.S. 1, 29-30 (1912) (overruled on other grounds, *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917)); cf. *E. Bement & Sons v. National Harrow Co.*, 186 U.S. 70, 91 (1902) (price-fixing of patented articles immunized from antitrust attack on similar theory). The general rule is qualified by the eminent domain power of the United States, 28 U.S.C. § 1498 (1982), which limits the remedy for unauthorized use by or for the United States of a patented invention to recovery by the patent owner of reasonable and entire compensation. See *Motorola, Inc. v. United States*, 729 F.2d 765 (Fed. Cir. 1984).

24. Representative Kastenmeier explained that the refusal to sell provision was intended to codify the case law in this respect, including *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195 (2d Cir. 1981), cert. denied, 455 U.S. 1016 (1982). See 134 CONG. REC. H10,649 (daily ed. Oct. 20, 1988).

patent²⁵ or antitrust law.²⁶ Furthermore, the strong public policy against compulsory licensing²⁷ has precluded this relief, even when patent misuse has been found.²⁸

Accordingly, the outright refusal to license patent rights has generally been approved, when no "extension" of the patent monopoly has been attempted, and the patent "monopoly" has not been secured or augmented by unfair means that violate the antitrust laws.²⁹ Similarly, the statutory privilege permitting a patentee to refuse to use any rights to the patent has long been established by cases confirming the right to suppress an invention for economic advantage.³⁰

2. Package Licensing

The amendment permitting a patentee, in the absence of market power, to condition the license of any rights to the patent or the sale of

25. See *Brulotte v. Thys Co.*, 379 U.S. 29, 33 (1964). Courts considering allegations of misuse from excessive royalty rates have regarded this proposition as "far-fetched." See *Warner-Jenkinson Co. v. Allied Chem. Corp.*, 477 F. Supp. 371, 396 (S.D.N.Y. 1979), *aff'd mem.*, 633 F.2d 208 (2d Cir. 1980). A patentee has the right to exclude a competitor entirely, and "[a] royalty demand which is so high as to preclude acceptance of a license offer is, after all, not appreciably different from a refusal to license upon any terms. The right to refuse to license is the essence of the patent holder's right under the patent law. . . ." *W.L. Gore & Assocs. v. Carlisle Corp.*, 529 F.2d 614, 623 (3d Cir. 1976).

26. See, e.g., *Miller Insituform, Inc. v. Insituform of North America, Inc.*, 605 F. Supp. 1125, 1133 (M.D. Tenn. 1985), *aff'd*, 830 F.2d 606 (6th Cir. 1987), *cert. denied*, 484 U.S. 1064 (1988); *United States v. Studiengesellschaft Kohle, m.b.H.*, 670 F.2d 1122, 1128 (D.C. Cir. 1981) ("exclusion of competitors and charging of supracompetitive prices are at the core of the patentee's rights, and are legitimate rewards of the patent monopoly"); *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 513 (7th Cir. 1982), *cert. denied*, 462 U.S. 1107 (1983).

27. See, e.g., *Fromson v. Western Litho Plate & Supply Co.*, 853 F.2d 1568, 1574-5 (Fed. Cir. 1988); *TWM Mfg. Co., Inc. v. Dura Corp.*, 789 F.2d 895, 900 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 852 (1986).

28. See, e.g., *American Lecithin Co. v. Warfield Co.*, 105 F.2d 207, 210-11 (7th Cir. 1939), *cert. denied*, 308 U.S. 609 (1939); *Preformed Line Prods. Co. v. Franner Mfg. Co.*, 328 F.2d 265, 279 (6th Cir.), *cert. denied*, 379 U.S. 846 (1964). These courts regarded such relief as contrary to the equitable policies underlying the misuse doctrine, permitting enforcement of a valid patent after purge. See *infra* note 47. A different result has followed from antitrust violations involving patents, when mandatory licensing is a well-established remedy. See *Hartford-Empire Co. v. United States*, 323 U.S. 386, 417 (1945); *United States v. National Lead Co.*, 332 U.S. 319, 338 (1947); *United States v. Glaxo Group*, 410 U.S. 52, 64 (1973).

29. See *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195 (2d Cir. 1981), *cert. denied*, 455 U.S. 1016 (1982).

30. See *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405 (1908); *Special Equip. Co. v. Coe*, 324 U.S. 370 (1945). For example, ownership of a patent conferring the right to exclude others from selling margarine would be of great benefit to makers of butter, even if they had no interest in working the patent themselves.

the patented product on the acquisition of a license to rights in another patent modifies the prior rule applied to package licensing. Formerly, the determinative legal question was whether there is "conditioning" in a package license sale, i.e., whether the buyer is "forced" to pay royalties on unwanted or unused technology in order to obtain desired elements of the package.³¹

The rule against package patent licensing has not been absolute,³² but has recognized a business justification defense, where the package is bargained for and is the most convenient business arrangement for the parties.³³ However, this limited immunity permitted for package licenses of patents has been denied for the block-booking of copyrighted feature films³⁴ and for tie-ins of patents to commodities.³⁵

The amendment modifies prior law by limiting misuse from package licensing of patents to circumstances in which there is "market power" in the market for any of the tying patents. Although the legislative history does not indicate whether Congress intentionally included the "conditioning" language of *Zenith Radio Corp. v. Hazeltine Research, Inc.*³⁶ in § 271(d)(5), it appears that the statutory amendment preserves the prior judicially-fashioned distinction between prohibited "conditioning" and permissible business convenience, even where market power is present.

31. In *Automatic Radio Mfg. Co. v. Hazeltine Research, Inc.*, 339 U.S. 827 (1950) (overruled in part on unrelated grounds by *Lear, Inc. v. Adkins*, 395 U.S. 653 (1969)), the Court indicated that "conditioning the granting of a license under one patent upon the acceptance of another and different license" is one of the "condemned schemes" under the patent misuse doctrine. 339 U.S. at 830-31.

32. Compare *American Security Co. v. Shatterproof Glass Corp.*, 268 F.2d 769, 777 (3d Cir.), cert. denied, 361 U.S. 902 (1959) (condemning forced mandatory package licensing under a leverage theory), with *Glen Mfg., Inc. v. Perfect Fit Indus.*, 420 F.2d 319, 321 (2d Cir.), cert. denied, 397 U.S. 1042 (1970); *International Mfg. Co. v. Landon, Inc.*, 336 F.2d 723, 729 (9th Cir. 1964), cert. denied, 379 U.S. 988 (1965) (permitting forced package licensing of "blocking" patents); and *Carpet Seaming Tape Licensing Corp. v. Best Seam, Inc.*, 616 F.2d 1133, 1142 (9th Cir. 1980) (approving "blocking patent" exception).

33. The rule against conditioning announced in *Automatic Radio* was tempered when the Court held that a package provision inserted for the convenience of the parties, rather than being forced or "conditioned" by the patent owner, did not result in misuse. See *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 138 (1969).

34. See, e.g., *United States v. Loew's, Inc.*, 371 U.S. 38 (1962); *United States v. Paramount Pictures, Inc.*, 334 U.S. 131 (1948). But cf. *Broadcast Music, Inc. v. Columbia Broadcasting Sys.*, 441 U.S. 1 (1979) (massive block-licensing of copyrighted musical compositions for broadcast approved as necessary under the circumstances of the business, when a separate license could be negotiated with the individual composer).

35. See, e.g., *B. B. Chem. Co. v. Ellis*, 314 U.S. 495, 498 (1942), discussed *infra* notes 92-97 and accompanying text.

36. 395 U.S. 100 (1969).

3. Tying Arrangements

The provision of greatest interest permits a patentee, under some circumstances, to condition the licensing of patent rights or the sale of a patented product "on the purchase of a separate product." While the legislative history does not analyze the issue in any detail, the significant effect of this provision is to permit the patentee, for the first time since 1917,³⁷ to tie staple products to the sale of patented technology.³⁸

A tie of a patented product to a nonstaple was permitted prior to the amendment by 35 U.S.C. § 271(d)(3), even when there was market power in the tying product. Based on extensive consideration of the legislative history of this section, the Court in *Dawson Chemical Co. v. Rohm & Haas Co.*³⁹ held that Congress had intended to change the judicially-developed law of contributory infringement "and to expand significantly the ability of patentees to protect their rights against contributory infringement".⁴⁰

In our view, the provisions of § 271(d) effectively confer upon the patentee, as a lawful adjunct of his patent rights, a limited power to exclude others from competition in nonstaple goods. A patentee may sell a nonstaple article himself while enjoining others from marketing that same good without his authorization. By doing so, he is able to eliminate competitors and thereby to control the market for that product. Moreover, his power to demand royalties from others for the privilege of selling the nonstaple item itself implies that the patentee may control the market for the nonstaple good; otherwise, his "right" to sell licenses for the marketing of the nonstaple good would be meaningless, since no one would be willing to pay him for a superfluous authorization.⁴¹

Furthermore, the Court construed the statutory language to exclude any requirement that the patentee be required to license others to sell a

37. *Before Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917), tying arrangements were generally condoned by the courts. See *infra* notes 57-60 and accompanying text.

38. The distinction between a staple article or commodity of commerce that is suitable for noninfringing use, and an unpatented article that is especially made or especially adapted for use in an infringement, having no substantial noninfringing use, is fundamental in the law of contributory infringement, and is codified in 35 U.S.C. § 271(c) (1988).

39. 448 U.S. 176 (1980).

40. *Id.* at 203.

41. *Id.* at 201.

nonstaple, even though a monopoly in the unpatented nonstaple results.⁴²

The critical distinction between unpatented staple and nonstaple products, which has shaped the development of patent misuse and contributory infringement for over a century,⁴³ appears largely to have been overlooked by Congress in 1988, although the legislative history endorses continued heightened scrutiny of ties involving staples.⁴⁴

The legislative floor remarks explaining new subsection 271(d)(5) indicate that the tying provision is significantly more limited than the earlier Senate-passed provision that would have required proof of an antitrust violation before a finding of patent misuse could be made.⁴⁵ Instead, the amendment is intended to alter the judicially created rule that tying is "per se" patent misuse.⁴⁶

B. History of the Per Se Patent Misuse Rule

For seventy years, tie-ins of patents and unpatented staple articles were uniformly condemned, without judicial mercy, as an unlawful

42. See *id.* at 214-15.

43. The history of the distinction, which can be traced to *Wallace v. Holmes*, 29 F. Cas. 74 (C.C.D. Conn. 1871) (No. 17,100), is reviewed in detail in *Dawson*, 448 U.S. at 187-200.

44. See *infra* notes 562-63 and accompanying text.

45. 134 CONG. REC. H10,648 (daily ed. Oct. 20, 1988) (remarks of Rep. Kastenmeier). The Senate version had provided:

No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his or her licensing practices or actions or inactions relating to his or her patent, unless such practices or actions or inactions, in view of the circumstances in which such practices or actions or inactions are employed, violate the antitrust laws.

S. 438, 100th Cong., 2d Sess., tit. II, § 201 (1988). An identical provision was earlier proposed by the Senate, Title II of S. 1200, 100th Cong., 1st Sess. (1987), but deleted from H.R. 3, 100th Cong., 1st Sess. (1988), and the final Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, 102 Stat. 1107 (1988). See H.R. REP. NO. 576, 100th Cong., 2d Sess. at 1091 (1988); see generally bills cited *infra* notes 121-22. Senator Leahy conceded defeat in the House after the Senate had passed S. 438 three times, but warned that

the Senate is clearly sending a message to the courts that they would be mistaken to continue to apply any presumption of market power involving intellectual property rights as automatically granting meaningful economic power over a particular market in antitrust cases.

134 CONG. REC. S17,148 (daily ed. Oct. 21, 1988).

46. See 134 CONG. REC. H10,648 (daily ed. Oct. 20, 1988) (remarks of Rep. Kastenmeier); *id.* at S17,147 (daily ed. Oct. 21, 1988) (remarks of Senator DeConcini).

"extension" of the patent monopoly, and were thus held to constitute patent misuse. Patent misuse is an equitable doctrine that can be applied to limit the enforceability of patents in a number of circumstances.⁴⁷ The doctrine is not limited to specific activity such as "tying" under the antitrust laws,⁴⁸ but has been a flexible remedy broadly condemning "every use of a patent as a means of obtaining a limited monopoly of unpatented material"⁴⁹ with the exception of the statutory protection of nonstaples extended by Section 271(d)(1) to (3) and the rule in *Dawson*.

"The doctrine of patent misuse is an affirmative defense to a suit for patent infringement, and requires that the alleged infringer show that the patentee has impermissibly broadened the 'physical or temporal scope' of the patent grant."⁵⁰ The doctrine has been applied to conduct as diverse as coerced package licensing,⁵¹ price fixing,⁵² extending royalties beyond the expiration date of the patent,⁵³ prohibiting the sale or

47. The effect of patent misuse, unenforceability of the patentee's rights under the patent until the misuse is purged, is mild in comparison to the antitrust sanctions of criminal prosecution or treble damages, or the alternative possibilities of invalidating the patent claims or granting a compulsory license. No award of damages for contributory, direct, or induced infringement can be awarded for the period in which the patent misuse is present and has not been purged, both by renouncing the prohibited practice and fully dissipating its effects. See *United States Gypsum Co. v. National Gypsum Co.*, 352 U.S. 457, 465 (1957); *In re Yarn Processing Patent Validity Litig.*, 472 F. Supp. 180, 183-84 (S.D. Fla. 1979) (the patent remains valid, and purge can be effected at any time, even after filing an infringement action); *White Cap Co. v. Owens-Illinois Glass Co.*, 203 F.2d 694, 698 (6th Cir.), cert. denied, 346 U.S. 876 (1953). What constitutes a purge depends upon the nature and extent of the misuse. Where the misuse consists of the insertion of an objectionable provision in a contract, mere cancellation and notice of affirmative abandonment may be sufficient. See *In re Yarn Processing*, 472 F. Supp. at 190-91; *Ansul Co. v. Uniroyal, Inc.*, 306 F. Supp. 541, 560 (S.D.N.Y. 1969), aff'd in pertinent part, 448 F.2d 872 (2d Cir. 1971), cert. denied, 404 U.S. 1018 (1972).

48. Patent misuse may be established by conduct that does not constitute a violation of the antitrust laws. See *Transparent-Wrap Mach. Corp. v. Stokes & Smith Co.*, 329 U.S. 637, 641 (1947); *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 140 (1969); *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661, 668 (Fed. Cir. 1986) (summary judgment on patent misuse affirmed but remand for trial on antitrust tying claim); *W.L. Gore & Assocs. v. Carlisle Corp.*, 529 F.2d 614, 622 (3d Cir. 1976).

49. *Leitch Mfg. Co. v. Barber Co.*, 302 U.S. 458, 463 (1938).

50. See *Windsurfing Int'l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir.), cert. denied, 477 U.S. 905 (1986) (citations omitted).

51. See *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100 (1969); *American Security Co. v. Shatterproof Glass Corp.*, 268 F.2d 769 (3d Cir.), cert. denied, 361 U.S. 902 (1959).

52. See *Brulotte v. Thys Co.*, 379 U.S. 29 (1964).

53. See *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436 (1940); *United States Gypsum Co. v. National Gypsum Co.*, 352 U.S. 457 (1957); *Ansul Co. v. Uniroyal, Inc.*, 306 F. Supp. 541 (S.D.N.Y. 1969), aff'd in pertinent part, 448 F.2d 872 (2d Cir. 1971), cert. denied, 404 U.S. 1018 (1972).

production of competing goods,⁵⁴ and demanding royalties based on total sales.⁵⁵ The misuse rule was developed, however, in response to tying arrangements requiring the purchase of unpatented staple components,⁵⁶ and this remains the quintessential act of patent misuse.

When tying arrangements were first challenged, the courts approved of the required purchase of tied supplies with patented machines as a lawful incident of the "absolute" patent monopoly enjoyed under the patent law.⁵⁷ In *Henry v. A.B. Dick Co.*,⁵⁸ the owner of a patent covering a stencil-duplicating machine sold the machine subject to the restriction that "it may be used only with the stencil paper, ink and other supplies made by A.B. Dick" where these necessary supplies were unpatented.⁵⁹ The patent owner sold the tying machines at cost or less, and realized its profit from the tied unpatented supplies.⁶⁰ Citing a beneficent public policy in favor of the property rights of patentees and liberty of contract, the Court held that the license restriction was enforceable, and that sale of ink with the intent that it be used in violation of the use restriction constituted contributory infringement.⁶¹

54. See *National Lockwasher Co. v. George K. Garrett Co.*, 137 F.2d 255 (3d Cir. 1943); *Compton v. Metal Prods., Inc.*, 453 F.2d 38, 44-45 (4th Cir. 1971), *cert. denied*, 406 U.S. 968 (1972); *Preformed Line Prods. Co. v. Fanner Mfg. Co.*, 328 F.2d 265, 276-77 (6th Cir.), *cert. denied*, 379 U.S. 846 (1964); *Berlenbach v. Anderson & Thompson Ski Co.*, 329 F.2d 782, 784 (9th Cir.), *cert. denied*, 379 U.S. 830 (1964).

55. Compare *Automatic Radio Mfg. Co. v. Hazeltine Research, Inc.*, 339 U.S. 827 (1950) with *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100 (1969). See generally, *Glen Mfg., Inc. v. Perfect Fit Indus., Inc.* 420 F.2d 319, 321 (2d Cir.), *cert. denied*, 397 U.S. 1042 (1970) ("relevant criteria in determining whether total-sales royalty structure [is misuse under *Zenith*] include whether the provision was bargained for or imposed and whether the licensee made 'protestations' which were overridden").

56. The tying prohibition has been extended to "unpatented technical information." *Duplan Corp. v. Deering Milliken, Inc.*, 444 F. Supp. 648, 697 (D.S.C. 1977), *aff'd in pertinent part*, 594 F.2d 979 (4th Cir. 1979), *cert. denied*, 444 U.S. 1015 (1980).

57. See, e.g., *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896), discussed *infra* notes 154-59 and accompanying text. But cf. *Morgan Envelope Co. v. Albany Perforated Wrapping Paper Co.*, 152 U.S. 425 (1894) (purchaser of patented toilet paper dispenser is entitled to purchase replacement paper from competing seller without liability for infringement).

58. 224 U.S. 1 (1912).

59. *Id.* at 11-12. Henry, a third party who sold the unpatented ink with knowledge of the license restriction and the expectation that it would be used with the mimeograph, was sued for contributory infringement. See *id.*

60. See *id.* at 26.

61. See *id.* at 48-49. In a lengthy opinion, Justice Lurton based this conclusion largely upon the "absolute" right granted by a patent recognized in *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405 (1908). See 224 U.S. at 29-31. Denying that the tie imposed any extension of the patent monopoly, he reasoned:

If a patentee says, "I may suppress my patent if I will. I may make and have made devices under my patent, but I will neither sell nor permit anyone to use the patented things," he is within his right, and none can complain. But if he says, "I

However, five years later the Court held that the use of a projector containing a patented film-feeding mechanism with unauthorized motion picture film did not infringe, even though a notice affixed to the projector prohibited its use except with tied unpatented film.⁶² It was conceded that the existence of the motion picture industry depended on use of the patented mechanism, i.e., that the patentee's share of the market for motion picture projectors was essentially 100 percent.⁶³ Overruling *A.B. Dick*, the Court announced that the attempted restriction on the use of unpatented staple supplies with the machine was against the public policy established in the interim by the Clayton Act.⁶⁴ A patentee is "restricted to the use of the invention as it is described in the claims of his patent, and not as it may be expanded by limitations as to materials and supplies necessary to the operation of it, imposed by mere notice to the public."⁶⁵ Licensing of the projector based on a collateral monopoly in the manufacture and use of moving picture films would enable a patentee,

for its own profit or that of its favorites, by the obviously simple expedient of varying its royalty charge, [to] ruin anyone unfortunate enough to be dependent upon its confessedly important improvements for the doing of business. . . . [I]t is not competent for the owner of a patent, by notice attached to its machine, to, in effect, extend the scope of its patent

will sell with the right to use only with other things proper for using with the machines, and I will sell at the actual cost of the machines to me, provided you will agree to use only such articles as are made by me in connection therewith," if he chooses to take his profit in this way, instead of taking it by a higher price for the machines, has he exceeded his exclusive right to make, sell and use his patented machines? The market for the sale of such articles to the users of his machine, which, by such a condition, he takes to himself, was a market which he alone created by the making and selling of a new invention. Had he kept his invention to himself, no ink could have been sold by others for use upon machines embodying that invention. By selling it subject to the restriction he took nothing from others and in no wise restricted their legitimate market.

Id. at 32.

62. See *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

63. Forty thousand of the projectors were in use at the time of suit, and it was admitted that the patented mechanism was "the only one with which motion picture films can be used successfully." 243 U.S. at 508.

64. See 243 U.S. at 518; Clayton Act of 1914, Pub. L. No. 63-212, 38 Stat. 730 (1914) (codified as amended 15 U.S.C. §§ 12-27 (1988)). Though the Court did not base its decision on the Clayton Act, the majority considered that "it must be accepted by us as a most persuasive expression of the public policy of our country with respect to the question before us." 243 U.S. at 517-18.

65. *Id.* at 515.

monopoly by restricting the use of it to materials necessary in its operation. . . .⁶⁶

The Court denounced the argument, received with favor in *A.B. Dick*, that the public "is benefited by the sale of the machine at what is practically its cost" when the owner elects to make its entire profit from the sale of supplies.⁶⁷ The Court said that the argument provides

the clearest possible condemnation of, the practice adopted, for it proves that under color of its patent the owner intends to and does derive its profit, not from the invention on which the law gives it a monopoly, but from the unpatented supplies with which it is used, and which are wholly without the scope of the patent monopoly, thus in effect extending the power to the owner of the patent to fix the price to the public of the unpatented supplies as effectively as he may fix the price on the patented machine.⁶⁸

66. *Id.* at 515-16. The label license also permitted the patentee, in its discretion, to fix a royalty for use of the projector, after sale and for the life of the patent. 243 U.S. at 509-10. The Court held that a mere label notice attached to the projector was insufficient, after sale, to permit the patentee to fix a potentially ruinous royalty rate at will, thus to discourage use of the projector with noninfringing films. However, it declined to rule that a tie could never be imposed in a special contract between the owner of a patent and a purchaser. *See id.* at 509, 513. It is unclear what tying arrangement could be permitted under general law, e.g., the Clayton Act, that was not expressly sanctioned by patent law, but the *Motion Picture Patents* decision is nonetheless a relatively narrow holding.

67. *See* 243 U.S. at 517. The price fixed in the contract was at least \$150, of which the patentee received a royalty of \$5 on some machines and a percentage of the selling price on others. *See id.* at 507. Films for projection were to be leased from the patentee, and a separate royalty was paid for the use of the projectors, based on the size of the theater. *See id.* at 518. The Court assumed that the patentee had been paid an average royalty of \$5 on each projector sold, and that the additional benefit from the tying arrangement would "doubtless aggregate many times this amount" during the life of the patent. *See id.* at 518-19. While the patents on the film had expired, the leased films owned by the patentee were copyrighted, defeating the argument that the patentee should be prevented from "aggregating" separate royalties for the use of the patented machine in showing "unpatented" films. At least with respect to the royalty provisions, a distinction should be drawn between a royalty on unpatented fungible goods, such as unexposed movie film used in a patented camera, and one based on the finished feature shown using a patented projector.

68. *Id.* at 517. With respect to the justification presented in *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896), and endorsed in *A.B. Dick*, that the patentee may withhold the invention entirely from the public, the Court exposed the "defect in this thinking" as the "failure to distinguish between the rights which are given to the inventor by the patent law and which he may assert against all the world through an infringement proceeding, and rights which he may create for himself by private contract, which, however, are subject to the rules of general, as distinguished from those of the patent, law." 243 U.S. at 515.

The abrupt reversal of the rationale embraced in *A.B. Dick* on the basis of intervening antitrust legislation⁶⁹ illustrates the historically close interface and cross-fertilization of patent and antitrust law relating to tying arrangements.⁷⁰

The reasoning of *Motion Picture Patents* was broadly applied to bar relief for contributory infringement in *Carbice Corp. v. American Patents Dev. Corp.*⁷¹ There the Court found misuse when a patent owner authorized use of a patented refrigeration package only to purchasers from a licensee of dry ice, which was a well-known and widely-used staple article of commerce. The licensee sued for contributory infringement on the basis that Carbice provided dry ice with knowledge that it was to be used by the purchaser in infringing packages.⁷² The Court ruled that there could be no recovery for contributory infringement because the license agreement violated public policy:

The [licensee] has no right to be free from competition in the sale of solid carbon dioxide. Control over the supply of such unpatented material is beyond the scope of the patentee's monopoly; and this limitation, inherent in the patent grant, is

69. See 243 U.S. at 518. While the majority held the tying provision void due to the "potential power for evil" which it granted the patentee over an important industry, see *id.* at 519, Justice Holmes dissented on the basis that the patentee had the absolute power to prevent the use of his invention (and thus the existence of the industry which depended upon it absolutely):

So much being undisputed, I cannot understand why he may not keep it out of use unless the licensee, or for the matter of that, the buyer, will use some unpatented thing in connection with it.

...

[T]here is no predominant public interest to prevent a patented teapot or film feeder from being kept from the public, because, as I have said, the patentee may keep them tied up at will while his patent lasts.

Id. at 519–20. He also denied that the tying arrangement "extended" the right of the patentee, presenting an argument central to later economic criticism of the antitrust presumption:

But the domination is one only to the extent of the desire for the teapot or film feeder, and if the owner prefers to keep the pot or the feeder unless you will buy his tea or films, I cannot see, in allowing him the right to do so, anything more than an ordinary incident of ownership, or, at most, a consequence of the Paper Bag Case, on which, as it seems to me, this case ought to turn.

Id. at 520 (citation omitted). Justice Holmes declined to address the issue suggested by the Clayton Act. See *id.* at 521.

70. See *infra* Section III.C.

71. 283 U.S. 27 (1931).

72. See *id.* at 30.

not dependent upon the peculiar function or character of the unpatented material or on the way in which it is used. Relief is denied because the [licensee] is attempting, without sanction of law, to employ the patent to secure a limited monopoly of unpatented material used in applying the invention.⁷³

Accordingly, a patent owner "may not exact as the condition of a license that unpatented materials used in connection with the invention shall be purchased only from the licensor; and if it does so, relief against one who supplies such unpatented materials will be denied."⁷⁴

The rule prohibiting extension of the patent right was applied to implied licenses in *Leitch Mfg. Co. v. Barber Co.*⁷⁵ At issue was a patented process for the curing of cement by the application of an unpatented staple bituminous emulsion, to retard evaporation during curing. The patent owner was in the business of furnishing the bituminous emulsion to road builders, and by selling the ingredient required in the patented process granted an implied license to practice the process.⁷⁶ The owner sued to enjoin contributory infringement by a producer who sold the bituminous emulsion to a road builder, knowing that it was to be used in accordance with the patented method.⁷⁷ The Court considered that the patent owner sought to use the process patent to secure a limited monopoly in the business of producing the staple bituminous material for carrying out the process—not by granting licenses or suing road builders, but instead by selling bituminous emulsion with a condition that the patented method could be used only with the tied product.⁷⁸ Relying upon *Carbice*, the Court ruled that the patent did not confer "the right to be free from competition in supplying unpatented material to be used in practicing the invention."⁷⁹

The owner attempted to distinguish *Carbice*⁸⁰ and *Motion Picture Patents*⁸¹ on the basis that there was no contract provision extending the monopoly, but only the license to use the process implied by law from the sale of the emulsion.⁸² The Court rejected this distinction and

73. *Id.* at 33-34.

74. *Id.* at 31.

75. 302 U.S. 458 (1938).

76. *See id.* at 460-61.

77. *See id.* at 459-60.

78. *See id.* at 460-61.

79. *Id.* at 461.

80. *Carbice Corp. of Am. v. American Patents Dev. Corp.*, 283 U.S. 27 (1931).

81. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

82. The patent owner pointed out that it was "not shown to have refused to grant any license under the patent, much less granted any license conditioned on purchase of emulsion from it." *B. B. Chem. Co. v. Ellis*, 117 F.2d 829, 838 (1st Cir. 1941) (Magruder, C.J., concurring), *aff'd*, 314 U.S. 495 (1942). Chief Judge Magruder explained:

condemned methods of doing business to extend a monopoly to unpatented material used in practicing an invention. By the rule announced in *Carbice*,

every use of a patent as a means of obtaining a limited monopoly of unpatented material is prohibited. It applies whether the patent be for a machine, a product, or a process. It applies whatever the nature of the device by which the owner of the patent seeks to effect such unauthorized extension of the monopoly.⁸³

Leitch, like *Motion Picture Patents* and *Carbice*, followed the unyielding rule that a patentee may not, however indirectly, "by virtue of his patent, condition his license so as to tie to the use of the patented device or process the use of other devices, processes or materials which lie outside of the monopoly of the patent licensed."⁸⁴

Motion Picture Patents, *Carbice*, and *Leitch* considered limitations on a patentee's ability to sue third parties for contributory infringement by supplying unpatented staple supplies. This limited application of the doctrine was transcended in *Morton Salt Co. v. G.S. Suppiger Co.*,⁸⁵ a case involving a patented machine for dispensing salt tablets.⁸⁶ There the Court held that a tying arrangement not only barred relief for contributory infringement against a third-party supplier of the tied product, but also rendered the patent unenforceable against direct infringers who sold the patented tying product. The patentee leased its machine to canners, on condition that only salt tablets provided by its subsidiary be used with the machine. The principal business of the subsidiary, from which its

The argument was to no avail. The court considered it sufficient to condemn the plaintiff's method of doing business, that, as matters stood, no road contractor had a license to practice the patented process except those contractors who bought their bituminous emulsion from the plaintiff.

Id. Accordingly, *Leitch* at least suggests an affirmative duty on the part of a patentee who desires to sell unpatented staples for use in the invention to offer to provide non-discriminatory licenses to others to practice the patent with staples purchased from other sources. In the absence of such affirmative effort, he may be held to have misused the patent. See, e.g., *Rex Chainbelt, Inc. v. Harco Prods., Inc.*, 512 F.2d 993, 1002 (9th Cir.), cert. denied, 423 U.S. 831 (1975); *Stearns v. Tinker & Razor*, 252 F.2d 589, 604 (9th Cir. 1957).

83. *Leitch*, 302 U.S. at 463.

84. *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436, 456 (1940).

85. 314 U.S. 488 (1942).

86. The issue of whether the salt tablets were staple articles of commerce or nonstaples was not addressed by the Court, though the tablets had "a particular configuration rendering them capable of convenient use in respondent's patented machines." *Id.* at 490.

profits were derived, was the sale of the salt tablets.⁸⁷ The Court concluded without difficulty that this attempt to create a limited monopoly in the marketing of unpatented salt tablets violated the rule against tying of unpatented supplies, and that a suit for contributory infringement against a competing seller of salt tablets would be barred by patent misuse.⁸⁸

In *Morton Salt*, however, the patentee sued not for contributory infringement based on sale of the salt tablets, but instead for direct infringement based on the sale of the patented machine. In denying relief, the Court established the broad principle that patent misuse is an equitable doctrine, not limited to the patentee's wrongful conduct with respect to the unpatented article:

Where the patent is used as a means of restraining competition with the patentee's sale of an unpatented product, the successful prosecution of an infringement suit even against one who is not a competitor in such sale is a powerful aid to the maintenance of the attempted monopoly of the unpatented article, and is thus a contributing factor in thwarting the public policy underlying the grant of the patent. . . . Equity may rightly withhold its assistance from such a use of the patent by declining to entertain a suit for infringement, and should do so at least until it is made to appear that the improper practice has been abandoned and that the consequences of the misuse have been dissipated.⁸⁹

The Court explained that it is "the adverse effect upon the public interest of a successful infringement suit in conjunction with the patentee's course of conduct which disqualifies him to maintain the suit, regardless of whether the particular defendant has suffered from the misuse of the patent."⁹⁰ In justifying the patent misuse sanction as an application of the "unclean hands" doctrine traditionally employed by courts of equity, the Court greatly enlarged the doctrine, holding that misuse results in the unenforceability of a patent, not only against a person injured by the practice, but against any other potential infringer.⁹¹

87. *Id.* at 491.

88. *See id.* at 491-92 (citing *Motion Picture Patents, Carbice, Leitch*, and two antitrust tying cases: *United Shoe Mach. Co. v. United States*, 258 U.S. 451, 462 (1922); and *International Business Machs. Corp. v. United States*, 298 U.S. 131, 140 (1936)).

89. 314 U.S. at 493.

90. *Id.* at 494.

91. *Id.* at 492-93.

The companion case to *Morton Salt, B. B. Chemical Co. v. Ellis*,⁹² established that patent misuse bars relief even where patent infringement had been actively induced.⁹³ As in *Leitch*, the patentee urged that he should be allowed to sell the unpatented materials⁹⁴ with an implied license to practice the patented method because he could not practicably exploit the particular patent rights by granting express licenses.⁹⁵ The Court summarily rejected this business justification defense,⁹⁶ long recognized in contributory infringement cases.⁹⁷

Morton Salt and *B. B. Chemical* thus expanded the misuse doctrine far beyond its original role of denying relief for contributory infringement based on the sale of an unpatented staple. These cases established the rule that has prevailed since, rendering the misused patent unenforceable against all classes of infringers (direct, contributory, and inducing) until affirmative steps are taken to dissipate the consequences of the misuse.⁹⁸

At the high tide of patent misuse, the Court in the *Mercoïd* cases⁹⁹ significantly limited the doctrine of contributory infringement¹⁰⁰ by

92. 314 U.S. 495 (1942).

93. *Accord Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 193-94 (1980).

94. In *B. B. Chemical* the patentee supplied fabric and adhesive, and provided patented machines for use in a method for reinforcing shoe insoles. The alleged contributory infringer supplied apparently nonstaple precoated fabric, slit into strips of suitable width for use by the patented method. The Court did not consider whether the precut adhesive coated fabric strips were staple or nonstaple, in the modern sense of 35 U.S.C. § 271(c) (1988). See *Dawson*, 448 U.S. at 194 n.12. To the extent that *B. B. Chemical* condemns the tied sale of nonstaples, it is restricted by § 271(c)-(d) in the same way as *Mercoïd Corp. v. Mid-Continent Invest. Co.*, 320 U.S. 661 (1944). See *infra* notes 99-102 and accompanying text.

95. The patent owner had argued that "it is not practicable to exploit the patent rights by granting licenses because of the preferences of manufacturers and of the methods by which petitioner has found it convenient to conduct its business." 314 U.S. at 498.

96. *Id.* at 498 ("The patent monopoly is not enlarged by reason of the fact that it would be more convenient to the patentee to have it so, or because he cannot avail himself of its benefits within the limits of the grant."); see also *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 193-94 (1980) ("practical difficulties in marketing a patented invention could not justify patent misuse").

97. See, e.g., *Wallace v. Holmes*, 29 F. Cas. 74 (C.C.D. Conn. 1871) (No. 17,100); *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U.S. 325 (1909). Both cases found contributory infringement by sale of components specially designed for use in patented combinations, where it would be impossible effectively to sue each user for direct infringement. *Accord Dawson*, 448 U.S. at 188.

98. See also *United States v. Loew's, Inc.*, 371 U.S. 38, 46 (1962).

99. *Mercoïd Corp. v. Mid-Continent Invest. Co.*, 320 U.S. 661 (1944) ("*Mercoïd I*") and *Mercoïd Corp. v. Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680 (1944) ("*Mercoïd II*").

100. The Court recognized that its decision would conflict with *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U.S. 325 (1909), and it registered disapproval, "if not outright rejection" of that case. *Mercoïd I*, 320 U.S. at 668, explained in *Dawson*, 448 U.S. at 197.

holding that any attempt to control the market for unpatented goods, including nonstaple components of patented combinations with no use outside the patented invention, would constitute patent misuse. *Mercoid I* involved the famous "stoker switch," which, although unpatented, was essential to the operation of a patented combination furnace heating system also requiring a motor driven stoker and a room thermostat.¹⁰¹ The *Mercoid* decisions precipitated the legislative decision to restore the doctrine of contributory infringement earlier developed in the courts. Section 271 was intended by Congress to retreat from *Mercoid's* condemnation of control of the market in a nonstaple good used in a patented process as patent misuse. However, it does not affect the misuse doctrine developed prior to *Mercoid* with respect to ties of staples such as the motion picture film of *Motion Picture Patents*, the dry ice of *Carbice*, or the bituminous emulsion of *Leitch*. When the Court in *Dawson* explained the exceptions fashioned by Congress in Section 271(d) to the judicially-created patent misuse doctrine, it confirmed the continuing vitality of pre-*Mercoid* precedent, particularly in classic cases of misuse, involving attempts to extend the patent monopoly to cover staple unpatented articles of commerce.¹⁰²

As a result of this history, until the patent misuse amendment, it had been per se misuse¹⁰³ of a patent for a patentee to attempt to control the

101. See *Mercoid I*, 320 U.S. at 664. The patentee licensed Honeywell to make and sell the stoker switches. The buyer of the stoker switch was licensed to build and use the combination system, and royalties owed the patentee were based on the number of stoker switches sold. See *id.* at 663. Thus the patentee derived his entire profit from sales of the single nonstaple component. *Mercoid* manufactured a competing stoker switch that was designed to be used only in the patented combination; it had been offered a license but refused to take one, and was sued for contributory infringement, as explained in *Dawson*, 448 U.S. at 214. *Mercoid II* involved a different patented combination, requiring three thermostats. See 320 U.S. at 682. Evidently the unpatented component was a single unit combining the functions of two of the claimed thermostats; in any event, it was "less than the complete claimed invention." See *id.* at 683.

102. 448 U.S. at 213-15.

103. See, e.g., *United States v. Studiengesellschaft Kohle, m.b.H.*, 670 F.2d 1122, 1131 (D.C. Cir. 1981) ("tying arrangements, in which the patentee agrees to license the patent only in exchange for the licensee's agreement to purchase other goods from the patentee, are illegal per se because they tend to foreclose competition in markets other than those in the patented product or process" under antitrust analysis); *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 511 (7th Cir. 1982), cert. denied, 462 U.S. 1107 (1983); *Duplan Corp. v. Deering Milliken, Inc.*, 444 F. Supp. 648, 697 (D.S.C. 1977), aff'd in pertinent part, 594 F.2d 979 (4th Cir. 1979), cert. denied, 444 U.S. 1015 (1980). The patent per se rule was adopted from *Northern Pac. Ry. Co. v. United States*, 356 U.S. 1, 5-6 (1958) ("There are certain agreements or practices which because of their pernicious effect on competition and lack of any redeeming virtue are conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use.") See *infra* notes 243-250 and accompanying text.

market in staples, regardless of "the nature of the device by which the owner of the patent [sought] to effect such unauthorized extension of the monopoly."¹⁰⁴ In *Dawson*,¹⁰⁵ the Court considered the specific exceptions fashioned by Congress to override the *Mercoïd* rule, and effectively limited consideration in patent misuse cases to whether the tied article is "a staple article or commodity of commerce suitable for substantial non-infringing use."¹⁰⁶

C. Statutory Elimination of Per Se Patent Misuse

The long-established doctrine that a tie-in constitutes per se patent misuse has been truncated by the amendment adding Section 271(d)(5). Under the provision as finally enacted, threshold "market power" in the relevant market for a tying product is required to permit an affirmative defense of patent misuse. However, the legislative history establishes that the amendment falls considerably short of the earlier proposal requiring an antitrust violation to sustain a patent misuse defense.

The adoption of an antitrust standard to govern patent misuse is explained by the curious evolution of the misuse provision. The patent misuse tying amendment proceeded neither directly from concern related to patent misuse, nor from ties of patents to staples. Instead, it was engendered by the desire of computer manufacturers to tie sales of computer hardware to copyrighted operating system software. Statutory immunity was sought primarily due to the fears of antitrust liability on

104. *Leitch Mfg. Co. v. Barber Co.*, 302 U.S. 458, 463 (1938).

105. 448 U.S. 176 (1980).

106. 35 U.S.C. § 271(c) (1988). The importance of this distinction results from the definition of activity exempted from misuse by 35 U.S.C. §§ 271(d)(1) and (2), which permit the owner to derive revenue from or license others to perform acts that without consent would "constitute contributory infringement." In *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661 (Fed. Cir. 1986), the Federal Circuit affirmed the lower court's use of a three-step analysis in determining patent misuse by tying, with the qualification that the particular test employed does not "explicat[e] all of the analytical parameters that may be applicable to patent misuse questions in future cases," as follows:

First: Determine whether there are two things tied, i.e., whether there are separable or inseparable items; if so

Second: Determine whether the "thing" which is assertedly tied to the patented item is a staple or non-staple item in commerce; if staple

Third: Determine whether in fact they are tied.

the part of computer manufacturers employing such tying arrangements.¹⁰⁷

One remarkable aspect of the legislative history is the anomaly that while Congress acted based on a professed concern to allow software owners to sell tying copyrighted programs with tied hardware, it amended the patent statute and made no corresponding change in the copyright act. Indeed, there was little if any consideration in Congress of the significant differences in the scope of protection offered by patents and copyrights,¹⁰⁸ or of what a smoke signal from the pyre of patent misuse would communicate to the judiciary in copyright misuse or antitrust cases.

The twisted path of the legislation through Congress led to an even

107. As the legislators explained, the proximate causes of computer manufacturers' demands for statutory immunity were the denial of certiorari in *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336 (9th Cir. 1984), *cert. denied*, 473 U.S. 908 (1985), and reaffirmation of the presumption of market power in antitrust law resulting from ownership of a patent in *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984). These decisions "caused intellectual property owners using package distribution schemes to fear that they may be the target of antitrust suits relying on the market power presumption." 134 CONG. REC. S14,437 (daily ed. Oct. 4, 1988) (remarks of Senator Hatch). See generally Brown, *supra* note 14, Note, *Tying Arrangements and the Computer Industry: Digidyne Corp. v. Data General Corp.*, 1985 DUKE L.J. 1027 [hereinafter Note, *Tying Arrangements and the Computer Industry*]; and Note, *The Presumption of Economic Power for Patented and Copyrighted Products in Tying Arrangements*, 85 COLUM. L. REV. 1140 (1985) [hereinafter Note, *The Presumption of Economic Power*]; cf. Recent Development, *supra* note 5 (this issue).

108. The most significant distinction, debated at length in the legislative history of the Semiconductor Chip Protection Act, 17 U.S.C. §§ 901-914 (Supp. II 1984), is the divergent subject matter protected under the distinct statutory systems. See generally, Burchfiel, *The Constitutional Intellectual Property Power: Progress of Useful Arts and the Legal Protection of Semiconductor Technology*, 28 SANTA CLARA L. REV. 473, 493-503 (1988). Copyright protection does not extend to useful articles, i.e., those "having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information." 17 U.S.C. § 101 (1982). Furthermore, "[i]n no case does copyright protection . . . extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." 17 U.S.C. § 102(b) (1982). These fundamental restrictions on copyrightable subject matter codify long-standing divisions between patents and copyrights. See *Baker v. Selden*, 101 U.S. 99 (1880). They are intended to permit free use of any idea in a copyrighted work, while preserving only the right to reproduce the particular expression. See *Mazer v. Stein*, 347 U.S. 201, 217 (1954); *Goldstein v. California*, 412 U.S. 546, 550, 571 (1973).

Particularly because functional substitutes for copyrighted works are at least theoretically always available, due to the free use of ideas embodied in copyrighted works such as computer programs, the "monopoly" conferred by the copyright in the process or method of operation is much narrower than a patent using the same program in a particular process. Moreover, patents, which effectively protect the idea of a useful article or process, have a broader and less distinct scope than copyrights due to the application of the doctrine of equivalents. See *infra* notes 565-79 and accompanying text.

more anomalous result. While patent misuse now requires market power, a corresponding proposal to eliminate the presumption of economic power from the existence of a patent or copyright was deleted by the House.¹⁰⁹ Accordingly, to the extent that the presumption of market power from ownership of a patent retains its vitality in antitrust law,¹¹⁰ courts will require proof of market power in evaluating the defense of patent misuse, and presume market power from ownership of the patent in ruling on antitrust counterclaims in the same case!

D. The Single Additional Element of Market Power

The result is that "market power" in the market for the tying patented product or process must be shown before the patent may be held unenforceable due to a tying license. This standard, which is adapted from antitrust law, is by express direction of Congress not confined to any particular definition found in antitrust precedent, but is essentially open-ended.¹¹¹ Based on the refusal of the House to accept the Senate proposal for a full antitrust standard, and case law establishing that patent misuse may be found in the absence of an antitrust violation, it is clear that the amendments establish an intermediate requirement between the former per se rule and the elements required for an antitrust tying violation.

In the Senate remarks, Senator DeConcini regrets that the amendment is "a narrow portion"¹¹² of the original bill requiring proof of an antitrust violation to establish patent misuse.¹¹³ He describes the "market power" requirement as a "threshold test." Senator Leahy concedes that the amendment "falls short of a strict antitrust standard. . . . But it does at least require a threshold showing that conditions exist under which anticompetitive results are likely to occur; that is, that market power exists, before a tying arrangement may be condemned under patent mis-

109. See *infra* notes 149-50 and accompanying text.

110. The historical presumption of market power from ownership of a patent or copyright is clearly under attack in the lower courts, based on the criticism furnished by economic theory. See, e.g., *A.I. Root Co. v. Computer/Dynamics, Inc.*, 806 F.2d 673, 676 (6th Cir. 1986), where the court declared the Supreme Court "pronouncement in *Loew's* to be overbroad and inapposite" and rejected the presumption of market power based on the "cogent reasoning" of Note, *The Presumption of Economic Power*. The apostasy of the Seventh Circuit is conspicuous. See *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505 (7th Cir. 1982), *cert. denied*, 462 U.S. 1107 (1983).

111. See *infra* notes 555-56 and accompanying text.

112. See *supra* note 46.

113. 134 CONG. REC. S17,148 (daily ed. Oct. 21, 1988).

use principles.¹¹⁴ These comments reflect the progressive dilution of the patent misuse provision, from the original antitrust proposal to substitute a rule of reason standard and eliminate treble damage awards for violations involving patents, to a requirement of an "antitrust violation" for patent misuse, to the final version enacted, requiring only "threshold" market power.¹¹⁵

Both from the plain "but for" wording of the amendment,¹¹⁶ and from a consideration of the differences between antitrust and patent misuse tying violations,¹¹⁷ it appears that the amendment requires only a minimal showing of market power before the affirmative defense of patent misuse may be invoked under the equitable power of the court. In patent misuse cases,¹¹⁸ business justification and other related defenses generally have been disregarded. A more difficult question is whether the patent misuse amendment permits a patentee to defend a charge of misuse only on the basis that there is no market power in the tying product, or whether other defenses from antitrust law may also be interposed.

This would have been the result of the original Senate proposals applying the rule of reason to patent misuse determinations, or requiring an antitrust violation for misuse. Senators DeConcini and Leahy considered that the "threshold" standard of market power would not automatically mean that a court must find patent misuse from tying.¹¹⁹

114. See *supra* note 45.

115.

If the alleged infringer cannot prove that the patent owner has market power in the relevant market for the patent or patented produce [sic], the tying product, then there can be no patent misuse by virtue of the tie-in, and that is the end of the inquiry.

134 CONG. REC. S17,148. Senator Leahy urged that the burden of proof should be on the patent infringer to prove "that the patent owner, under all of the circumstances in which the patent is utilized, wields market power in the relevant market for the tying patent or patented product." 134 CONG. REC. S17,149.

116. *Id.* Senators DeConcini and Leahy both regarded the amendment as an intermediate measure, pending further consideration in the Senate of broader proposals relating to patent misuse. See, e.g., 134 CONG. REC. S17,148 (daily ed. Oct. 21, 1988) (remarks of Sen. DeConcini); *id.* at S17,148-49 (remarks of Sen. Leahy).

117. See S. 438, 100th Cong., 1st Sess., § 2 (1987) ("rule of reason standard" applied to agreements conveying rights in patents, trade secrets and mask works); *id.* § 3 (limiting relief for violations by such agreements to actual damages and attorney fees).

118. See S. 438, 100th Cong., 2d Sess., tit. I (1988) (eliminating presumption of market definition or power from ownership of an intellectual property right); *id.*, tit. II (requiring violation of antitrust laws for patent misuse).

119. See *supra* notes 94-97 and accompanying text. The availability of business justification defenses to antitrust tying violations is the subject of debate. See *infra* notes 149, 412, 507, 513 and accompanying text.

but that the patent owner could argue business justification, or procompetitive benefits resulting from the arrangement.¹²⁰

It is equally clear that the House rejected any suggestion of a "rule of reason" analysis in patent misuse determinations. Representative Fish explained that in response to concerns raised about the breadth of the original Senate bill,¹²¹ the amended version of S. 438¹²² eliminated the detrebling provisions and does not require "the application of the rule of reason to intellectual property arrangements."¹²³ Even the stronger Senate provision rejected by the House would have preserved the per se rule once market power was shown, avoiding consideration of the tying arrangement under the rule of reason.¹²⁴ Furthermore, permitting business justification defenses would eliminate any cogent distinction between the "threshold" market power requirement inserted by the

120. See 134 CONG. REC. S17,148 (remarks of Sen. DeConcini):

The patent owner may still argue that any substantially anticompetitive impact of the tie-in is outweighed by benefits of the arrangement, including both procompetitive benefits and other potential business justifications. This will constitute the heart of this misuse rule-of-reason analysis, but, as I indicated above, it will not even be reached if the patent owner does not wield market power by virtue of his or her patent.

According to Senator Leahy's understanding,

the statute's use of the words "in view of the circumstances" means that after the alleged infringer has proven that the patent owner has market power, a balancing test of circumstances, including business justification, must be employed. Courts will have to go through the process of evaluating the patent owner's market power—the ability to raise prices or exclude competition—and must consider the availability of substitutes, and the existence of any business justifications or their [sic] benefits, before concluding that a patent has been misused.

134 CONG. REC. S17,149.

121. See S. 438, 100th Cong., 1st Sess. (1987).

122. S. 438, 100th Cong., 2d Sess. (1988).

123. 134 CONG. REC. H10,408 (daily ed. Oct. 19, 1988). Rep. Kastenmeier's remarks, which clearly indicate that the Senate proposal to require an antitrust violation for patent misuse was rejected by the House as "sweeping and inflexible," somewhat confusingly refer to application of a "rule of reason analysis to the tie-in of a staple." *Id.* at H10,649 (daily ed. Oct. 20, 1988). In view of the earlier express rejection of the Senate proposal for a rule of reason standard, and explanation that the per se rule would continue to be applied once market power is shown from a tying patent, it seems clear that Congress did not intend to adopt a rule of reason standard, such as that proposed by Justice O'Connor in *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 32 (1984), i.e., requiring proof of anticompetitive effect in addition to proof of market power.

124. See *infra* note 149.

House and the "antitrust" standard for misuse which the House rejected.¹²⁵

By eliminating the defense of patent misuse unless there is "market power," the amendments establish an intermediate standard between the previous per se rule of patent misuse, and the proposed Senate provision, that would have required proof of an antitrust violation. Because the "market power" standard was adopted from antitrust law, and has no history in consideration of patent misuse, antitrust law must provide a point of departure for judicial construction of the new threshold requirement, "in view of the circumstances" including the peculiarities of the patent right.

III. ANTITRUST TYING: THE LEGAL MODEL OF MARKET POWER

A. *The Antitrust Standard*

An unlawful tying¹²⁶ arrangement prohibited by the Clayton Act¹²⁷ and the Sherman Act¹²⁸ is established by showing that (1) there are

¹²⁵ Rep. Kastenmeier stated that "it is also our intention to avoid the use of inflexible rules once a court has found that market power exists. There may be circumstances in which there is market power and a tie-in, but where a finding of misuse would be inappropriate. One example would be where the patent owner has a business justification for the licensing practice. . . . In real world situations where the only practical way to meter output is to tie the sale of a patented product to the sale of another separate product, then such a practice would be legitimate, unless such a practice—on balance—has a generally anticompetitive effect." 134 CONG. REC. at H10,649-50. The suggested defense is much narrower than the general balancing of procompetitive aspects under the rule of reason proposed by the Senate. See *supra* note 120.

¹²⁶ For purposes of the present analysis, it is not necessary to qualify the classic definition provided in *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5-6 (1958), see *supra* note 2 and accompanying text.

¹²⁷ Section 3 of the Clayton Act provides in relevant part:

It shall be unlawful for any person engaged in commerce, in the course of such commerce, to . . . make a sale or contract for sale of goods, wares, merchandise, machinery, supplies, or other commodities, whether patented or unpatented, for use, consumption or resale within the United States . . . on the condition, agreement, or understanding that the . . . purchaser thereof shall not use or deal in the goods, wares, merchandise, machinery, supplies, or other commodities of a competitor or competitors of the . . . seller, where the effect of such . . . sale, or contract for sale or such condition, agreement, or understanding may be to substantially lessen competition or tend to create a monopoly in any line of commerce.

15 U.S.C. § 14 (1982).

¹²⁸ Section 1 of the Sherman Act provides in relevant part:

Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.

separate products; (2) the purchase of one (the tying product) is conditioned on the purchase of the other (the tied product); (3) the tying product's market power appreciably restrains free competition in the tied product's market; and (4) a "not insubstantial" amount of commerce in the tied product is affected.¹²⁹

These elements establish a per se violation of the antitrust laws.¹³⁰ However, the term per se violation is a misnomer,¹³¹ since in antitrust tying violations "market power" must be shown in the tying product. In antitrust doctrine, "market power" is a term of art.¹³² It differs both from

15 U.S.C. § 1 (1982). It is often stated that the standard of analysis is the same under the Clayton Act and the Sherman Act. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 23 n.39 (1984). The language of the Sherman Act is more comprehensive, since the Clayton Act only prohibits transactions where the tied and tying products are "goods, wares, merchandise, machinery, supplies, or other commodities" and not, e.g., contracts for services, credit, trademarks or land.

129. See *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5-6 (1958); *Jefferson Parish*, 466 U.S. at 11-18; *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 498-99 (1969); *Xeta, Inc. v. Atex, Inc.*, 852 F.2d 1280, 1282-83 (Fed. Cir. 1988). Recently, some Seventh Circuit cases have engrafted the further requirement that there be a "substantial danger that the tying seller will acquire market power in the tied product market." See *Will v. Comprehensive Accounting Corp.*, 776 F.2d 665, 674 (7th Cir. 1985), cert. denied, 475 U.S. 1129 (1986); *Carl Sandburg Village Condo. Ass'n No. 1 v. First Condo. Dev. Co.*, 758 F.2d 203, 210 (7th Cir. 1985). This requirement has no support in Supreme Court or Seventh Circuit precedent, although it was advanced by a minority in *Jefferson Parish*, 466 U.S. at 38 (O'Connor, J., concurring). See *infra* notes 243-48 and accompanying text.

130. Application of the per se rule "focuses on the probability of anticompetitive consequences." See *Jefferson Parish*, 466 U.S. at 15-16. The rule is applicable either when the tying product is protected by a patent or similar monopoly, or in other situations in which the existence of market power is "probable," such as when the seller's share of the market is high, or when the seller offers a unique product that competitors are not able to offer. See *id.* at 16-18.

131. In genuinely per se violations, such as price-fixing and division of markets, no showing of market power or anticompetitive effect is required, and it is generally sufficient to show the existence of an illegal agreement without more. See *id.* at 34 (O'Connor, J., concurring); but cf. *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 85 (1984) (applying rule of reason to price-fixing in view of the unique nature of the college football market).

132. The required degree of market power varies widely in different antitrust contexts. See, e.g., Landes & Posner, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937, 955-56 (1981). For example, no market power is required to establish a price-fixing violation, while market domination, e.g., a market share over 60%, may be required to show unlawful monopolization under § 2 of the Sherman Act. Compare, e.g., *National Collegiate Athletic Ass'n*, 468 U.S. at 110 (price-fixing) with *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 424 (2d Cir. 1945) (§ 2 monopolization). In the spectrum of distinct antitrust market power requirements, a tying violation requires only a modest degree of "some power over some of the buyers in the market, even if [this] power is not complete over them and over all other buyers in the market." *Fortner*, 394 U.S. at 503.

popular conceptions of "monopoly" and from "market share."¹³³ To establish market power, one must show that would-be competitors cannot themselves offer the tying product on competitive terms due to a patent or copyright, some cost advantage over rivals in producing the tying product, or substantial entry barriers into the tying market.¹³⁴ In antitrust tying violations, economic or market power over the tying product "can be sufficient even though the power falls far short of dominance and . . . exists only with respect to some of the buyers in the market."¹³⁵ Without proof of market share, market power may be inferred from the tying product's desirability to consumers,¹³⁶ or the uniqueness of its attributes.¹³⁷ Market power is determined by whether the seller has the power "to raise prices, or impose other burdensome terms such as a tie-in, with respect to any appreciable number of buyers within the market."¹³⁸

In legal tying analysis, the essential concept which recurs as defining market power is variously termed "leverage," "foreclosure," or "forcing." In one aspect, the Supreme Court has focused on a seller's ability to make a buyer purchase a tied product "that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms."¹³⁹ From this viewpoint, the evil in tying arrangements is that "buyers are forced to forego their free choice between competing pro-

133. In particular, see the economic analysis by Landes & Posner, *supra* note 132, at 952-53; Krattenmaker, Lande & Salop, *Monopoly Power and Market Power in Antitrust Law*, 76 GEO. L.J. 241, 259 (1987).

134. See *Fortner*, 394 U.S. at 505 n.2; *Tic-X-Press, Inc. v. Omni Promotions Co. of Ga.*, 815 F.2d 1407, 1420 (11th Cir. 1987) (tying product was only available stadium large enough for rock music concerts).

135. *Fortner*, 394 U.S. at 503; *Tic-X-Press*, 815 F.2d at 1420; *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336, 1340-41, 1345 (9th Cir. 1984), *cert. denied*, 473 U.S. 908 (1985).

136. *Fortner*, 394 U.S. at 503 (quoting *United States v. Loew's, Inc.*, 371 U.S. 38, 45 (1962)).

137. See *Fortner*, 394 U.S. at 505 & n.2; *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 17 (1984); *Tic-X-Press*, 815 F.2d at 1420; *Digidyne*, 734 F.2d at 1345.

138. *Fortner*, 394 U.S. at 504. For this reason,

If a seller's product is distinctive, not available from other sources, and sufficiently attractive to some buyers to enable the seller by tying arrangements to foreclose a part of the market for a tied product, the adverse impact on competition in the tied product is not diminished by the fact that other sellers may be selling products similar to the tying product.

Digidyne, 734 F.2d at 1345.

139. *Jefferson Parish*, 466 U.S. at 12.

ducts" in the tied market.¹⁴⁰ However, a conceptually distinct and predominant rationale has been that it is unfair to "foreclose" competitors in one market by using power developed in another market.¹⁴¹ Whether considering the buyer's or competitor's interest, the public policy favoring competition is affected, since

a potentially inferior product may be insulated from competitive pressures. This impairment could either harm existing competitors or create barriers to entry of new competitors in the market for the tied product, and can increase the social costs of market power by facilitating price discrimination, thereby increasing monopoly profits over what they would be absent the tie.¹⁴²

B. *The Presumption of Market Power from Legally Differentiated Tying Products*

The current controversy over the presumption of market power involves the long-standing antitrust rule that a showing of actual market power is not required if the tying product is "legally differentiated,"¹⁴³ e.g., protected by a legal "monopoly" such as a patent¹⁴⁴ or copyright.¹⁴⁵ The Supreme Court adheres to the rule that

if the Government has granted the seller a patent or similar monopoly over a product, it is fair to presume that the inability to buy the product elsewhere gives the seller market power.

140. See *Fortner*, 394 U.S. at 499; *Northern Pac. Ry. v. United States*, 356 U.S. 1, 6 (1958); *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 605-06 (1953).

141. See *Jefferson Parish*, 466 U.S. at 9-11, 12-13; *Fortner*, 394 U.S. at 498-99; *United States v. Loew's, Inc.*, 371 U.S. 38, 45 (1962); *Northern Pac. Ry.*, 356 U.S. at 4-5, 6; *Times-Picayune*, 345 U.S. at 605-06. This public policy is also clearly stated in the patent misuse cases, beginning with *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917). See generally Note, *The Logic of Foreclosure: Tie-In Doctrine after Fortner v. U.S. Steel*, 79 YALE L.J. 86 (1969) ("Other economic effects of tie-ins, such as effects on market structure or consumer welfare, appear thus far to have had little influence on the Court's decisions. . .").

142. *Jefferson Parish*, 466 U.S. at 14-15 (citing, *inter alia*, *Fortner*, 394 U.S. at 509; and *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610, 617 (1977)).

143. See, e.g., Note, *The Presumption of Market Power in Sales of Legally Differentiated Tying Products*, 56 TEX. L. REV. 1305 (1978) (arguing against application of the presumption from the existence of patents and copyrights).

144. See *Jefferson Parish*, 466 U.S. at 16-17.

145. See *Loew's*, 371 U.S. at 45-48; *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336, 1341-42 (9th Cir. 1984), *cert. denied*, 473 U.S. 908 (1985).

Any effort to enlarge the scope of the patent monopoly by using the market power it confers to restrain competition in the market for a second product will undermine competition on the merits in that second market. Thus, the sale or lease of a patented item on condition that the buyer make all his purchases of a separate tied product from the patentee is unlawful.¹⁴⁶

However, in her concurring opinion in *Jefferson Parish*, Justice O'Connor stated that the ownership of a legal "monopoly" such as a patent should not be presumed to create market power in the tying product,¹⁴⁷ and that intellectual property cases should be evaluated under the rule of reason applied to non-tying antitrust violations.¹⁴⁸ Justice O'Connor's proposal, abandoning a per se rule of market power in a legal monopoly, is thus more radical than the Senate antitrust provision.¹⁴⁹ The Senate proposal rejected by the House would have

146. *Jefferson Parish*, 466 U.S. at 16. The presumption is regarded by at least one commentator as conclusive. See Note, *The Presumption of Economic Power* (discussion of whether courts have found the presumption conclusive or rebuttable); Brown, *supra* note 14, at 218; Lavey, *Patents, Copyrights, and Trademarks as Sources of Market Power in Antitrust Cases*, 27 ANTITRUST BULL. 433, 445-48 (1982); Slawson, *A New Concept of Competition: Reanalyzing Tie-in Doctrine after Hyde*, 30 ANTITRUST BULL. 257, 259 (1985). Slawson considers the argument that the per se rule for tie-ins which the court developed in its previous decisions was absolute was a misleading fiction created in the government's brief in *Jefferson Parish*, calculated to make the tie-in doctrine seem like an "inflexible" tool. See generally *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 85 (1984) (rule-of-reason analysis applied to per se price fixing violation).

147.

A common misconception has been that a patent or copyright, a high market share, or a unique product that competitors are not able to offer suffices to demonstrate market power. While each of these three factors might help to give market power to a seller, it is also possible that a seller in these situations will have no market power: for example, a patent holder has no market power in any relevant sense if there are close substitutes for the patented product.

Jefferson Parish, 466 U.S. at 37 n.7 (O'Connor, J., concurring, joined by Burger, Powell and Rehnquist, J.J.).

148. See *id.* at 35.

149. The House deleted the amended version of S. 438, 100th Cong., 2d Sess. (1988), which was criticized by Rep. Kastenmeier as "sweeping and inflexible." 134 CONG. REC. H10,649 (daily ed. Oct. 20, 1988). See also 134 CONG. REC. H10,408 (daily ed. Oct. 19, 1988) (remarks of Rep. Fish). In his testimony before the Senate, Brown indicated the extent of the upheaval that the earlier version of S. 438 would have produced in diverse antitrust contexts, given the likelihood that the intellectual property right "shield" would be used to insulate broad areas of economic activity from current regulation. See *Intellectual Property Antitrust Protection Act of 1987: Hearing before the Subcomm. on Technology and the Law of the Comm. on the Judiciary, United States Senate on S. 438, 100th Cong., 1st Sess.* 73 (October 20, 1987), reprinted in Brown, *supra* note 14.

eliminated the presumption of market power arising for a patent, copyright, or registered mask work,¹⁵⁰ but would have retained the established per se misuse standard, which includes proof of actual, if minimal, market power.¹⁵¹ Thus antitrust defenses under the rule of reason, such as the possible economic benefits of tying arrangements suggested by Justice O'Connor,¹⁵² would not have been considered under the Senate antitrust proposal once market power had been established.

C. Development of the Antitrust Presumption

The presumption of market power from patent ownership in antitrust law appeared late in the closely-intertwined histories of patent and antitrust cases condemning various tying arrangements.¹⁵³ Originally, the judiciary had approved the sale of patented machines tied to unpatented supplies consumed in their use. In the influential *Button-Fastener Case*,¹⁵⁴ the Sixth Circuit found contributory infringement from the unauthorized sale of staples for use in a patented machine for fastening buttons to shoes.¹⁵⁵ A label was attached to each machine sold, stating that it could only be used with staples made by the same manufac-

150. The Senate antitrust proposal states:

In any action in which the conduct of an owner, licensor, licensee, or other holder of an intellectual property right is alleged to be in violation of the antitrust laws in connection with the marketing or distribution of a product or service protected by such a right, such right shall not be presumed to define a market or to establish market power, including economic power and product uniqueness or distinctiveness, or monopoly power.

S. 438, 100th Cong., 2d Sess. § 102 (1988).

151. See *supra* note 123.

152. *Jefferson Parish*, 466 U.S. at 41-42.

153. The history of antitrust tying cases has been analyzed comprehensively in an excellent article correlating the wide fluctuations in public policy with specific changes in the composition of the Court. Kramer, *The Supreme Court and Tying Arrangements: Antitrust as History*, 69 MINN. L. REV. 1013 (1985) [hereinafter Kramer]. The following discussion concentrates on the interrelationship of patent and antitrust principles and specific economic aspects of the decisions.

154. *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896).

155. The commercial success of the machines was phenomenal, and they wholly superseded every other mode of fastening buttons to shoes. See *id.* at 288. Some 49,000 of the machines had been sold at the actual cost of the machines to the manufacturer, who realized a profit from the patent solely from the sale of tied staples, which were unpatented and "not even an element in a combination claim." See *id.* at 289.

turer.¹⁵⁶ The principal claim against the manufacturer, grounded in the public policy of a recently-enacted antitrust law, was "that public policy forbids a patentee from so contracting . . . his monopoly as to create another monopoly in an unpatented article."¹⁵⁷

The court rejected this argument, giving a patentee the undisputed ability to suppress his invention entirely, or retain exclusive use of the machine. The court concluded that "the monopoly in the unpatented staple results as an incident from the monopoly in the use of [the] invention, and is therefore a legitimate result of the patentee's control over the use of his invention by others."¹⁵⁸ Thus, the patentee could "legitimately and lawfully . . . acquire a monopoly of the manufacture of shoes, and destroy the shoe market for those who before had shared it. . . ."¹⁵⁹

The Supreme Court initially adopted this reasoning in *A.B. Dick*,¹⁶⁰ but Congress soon afterward broadly condemned tying arrangements in the Clayton Act.¹⁶¹ Furthermore, in *Motion Picture Patents*¹⁶² the Court overruled *A.B. Dick*, heeding the public policy newly expressed in the antitrust context. The tying contracts employed with great success by the General Film Company and the United Shoe Company were identified by Congress as targets of the Clayton Act tying provision.¹⁶³

156. See *id.* at 289.

157. *Id.* at 292-94.

158. *Id.* at 296 ("In the last analysis, the invention destroyed the demand for sizes and shapes of staples not adapted to use with the machine of complainant, and the monopoly of the use awarded by the patents destroyed the market for staples fitted for use in complainant's machines.").

159. *Id.* at 295. Since the invention was of a "wide character, and so radical as to enable him to make and sell an unpatentable product cheaper than any other competitor, a practical monopoly of the market for that article will result; and yet no one could say that a monopoly thus secured was illegitimate, or obnoxious to public policy. . . . The monopoly thus secured would be the legitimate consequence of the meritorious character of their invention." If a complete monopoly of the shoe market resulted from cost advantages provided by the patent, the court perceived no harm in permitting the patentee to acquire a monopoly on the button fasteners included in the broader monopoly. See *id.* at 295-96.

160. *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912), *supra* notes 58-61 and accompanying text. Justice Lurton, who authored the *Button-Fastener* opinion for the Sixth Circuit, also delivered the opinion in *A.B. Dick*, a four-to-three decision that revealed a serious division in the Court over the evils of tying and the scope of the Sherman Act. See Kramer, *supra* note 153, at 1018-19, for discussion of Chief Justice White's dissenting opinion and its invitation for further legislation to address the practice. The *A.B. Dick* opinion was a spur to enactment of the specific prohibition of tying arrangements in § 3 of the Clayton Act. See Kramer, *supra* note 153, at 1021-23.

161. Clayton Act of 1914, Pub. L. No. 63-212, ch. 323, § 3, 38 Stat. 730, 731 (1914).

162. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

163. See Kramer, *supra* note 153, at 1021 & n.41 (extensive references in congressional debates to tying arrangements employed by the United Shoe Machinery Co.). In the legislative history of the Clayton Act, Congress specifically condemned the tying contracts employed by the United Shoe Machinery Co. and the General Film Co. as

In a Sherman Act case,¹⁶⁴ the Court initially sustained tying arrangements in which the United Shoe Machine Company leased patented shoemaking machines tied to use of additional machines and purchase of fastening material.¹⁶⁵ However, in a subsequent suit under the Clayton Act,¹⁶⁶ the Court found the same United Shoe contracts unlawful.¹⁶⁷ Concluding that United Shoe occupied a dominant position in the shoe

brain of man. It completely shuts out competitors, not only from trade in which they are already engaged, but from the opportunities to build up trade in any community where these great and powerful combinations are operating under this system and practice. By this method and practice the Shoe Machinery Co. has built up a monopoly that owns and controls the entire machinery now being used by all great shoe-manufacturing houses of the United States. No independent manufacturer of shoe machines has the slightest opportunity to build up any considerable trade in this country while this condition obtains. If a manufacturer who is using machines of the Shoe Machinery Co. were to purchase and place a machine manufactured by any independent company in his establishment, the Shoe Machinery Co. could under its contracts withdraw all their machinery from the establishment of the shoe manufacturer and thereby wreck the business of the manufacturer. The General Film Co., by the same method practiced by the Shoe Machinery Co. under the lease system, has practically destroyed all competition and acquired a virtual monopoly of all films manufactured and sold in the United States. When we consider contracts of sales made under this system, the result to the consumer, the general public, and the local dealer and his business is even worse than under the lease system.

H.R. REP. NO. 627, 63d Cong., 2d Sess. 12-13 (1914) (quoted in *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 10 n.15).

164. *United States v. United Shoe Mach. Co.*, 247 U.S. 32 (1918) ("*United Shoe I*"). The case was brought to dissolve United Shoe, which had been formed by the merger of other shoe machinery companies, and to enjoin the use of tying clauses in the leases as contracts in violation of the Sherman Act, §§ 1 and 2. The leases were sustained against this attack as valid and binding agreements within the rights of patent owners. The tying provisions had earlier been approved in dicta by Justice Holmes in *United States v. Winslow*, 227 U.S. 202, 217 (1913), though only the lawfulness under the Sherman Act of the merger forming the United Shoe Company was at issue. See *id.* at 216-17. See *Kramer*, *supra* note 153, at 1024-30 for a discussion of the *United Shoe* cases.

165. See *United Shoe I*, 247 U.S. at 61-63. The contract provisions employed by United Shoe are described in more detail in the dissent of Justice Day, *id.* at 68-69; and in the subsequent Clayton Act case, see *infra* note 167.

166. *United Shoe Mach. Corp. v. United States*, 258 U.S. 451 (1922) ("*United Shoe II*").

167. The tying arrangements required the lessee of the shoe machines to purchase supplies exclusively from United Shoe, to purchase all additional machinery for certain kinds of work from United Shoe, and to limit the use of the leased machines to shoes prepared using other operations of United Shoe's machines ("patent insole" clause). These were only three of seven provisions enjoined by the district court, including a restrictive use clause prohibiting use of the leased machines except on shoes on which other operations had been performed by United Shoe's other machines; an exclusive use clause permitting cancellation of the leases if competitors' machines were used; a factory output clause requiring royalties on shoes operated upon by competitors' machines; and a discriminatory royalty clause favoring the use of United Shoe's machines. See *id.* at 456-57.

machinery market,¹⁶⁸ the Court did not even consider whether the shoe-making machines were priced at or above a competitive level, or whether United Shoe had derived its profits from unpatented supplies. In basing its decision on *Motion Picture Patents*, the Court signalled an intention to apply a unitary standard broadly condemning tying arrangements under the uniform public policy governing patent misuse and anti-trust law.¹⁶⁹ In *International Business Mach. Corp. v. United States*,¹⁷⁰ a tie of leased patented computing machines to punch cards was at issue. Although IBM urged that the tie-in did not impermissibly extend protection beyond its separate patent for perforated punch cards,¹⁷¹ and that the tie was justified to protect business goodwill,¹⁷² the Court rejected both defenses. Citing *Carbice*¹⁷³ and *Motion Picture Patents*,¹⁷⁴ the Court questioned whether blank card sales to IBM's lessees by third parties would constitute contributory infringement of claims extending to the cards only when punched, but did not base its opinion on this "narrow ground."¹⁷⁵ Instead the Court relied on the legislative history of the Clayton Act in holding that the tying of several patented articles is itself prohibited, and that for purposes of antitrust law, the lawfulness of the tying arrangement must be determined as though the leased article and supplies were unpatented.¹⁷⁶

The Supreme Court rejected the argument that using faulty cards with IBM machines would damage IBM's reputation¹⁷⁷ as inapplicable under the plain language of the Clayton Act, observing that "[t]he very existence of such restrictions suggests that in its absence a competing article of equal or better quality would be offered at the same or lower

168. See *id.* at 455 (control of more than 95% of the business of supplying the shoe machinery at issue).

169. See *id.* at 463.

170. 298 U.S. 131 (1936). IBM derived annual average gross receipts of \$9,710,389 from leasing the computing machines, compared with \$3,192,700 from sale of its cards. See *id.* at 136. The Court did not compare the profits from these categories of sales, or offer any view as to whether the profits from the patented machines were reduced to induce the tie. However, Justice Stone estimated that the government's payment of a 15% increase in rental to secure the privilege of making its own cards was profitable only if it produced the cards at a cost less than 55% of the price charged by IBM. See *id.* at 139.

171. See *id.* at 134.

172. See *id.*

173. *Carbice Corp. v. American Patents Dev. Corp.*, 283 U.S. 27 (1931).

174. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

175. See *IBM*, 298 U.S. at 136-37.

176. See *id.* at 138.

177. It was required for satisfactory performance that the cards conform to precise size and thickness specifications, and that they be free from defects due to slime or carbon spots that could cause unintended electrical contacts. See *id.* at 134.

price."¹⁷⁸ A manufacturer concerned with customer goodwill must use methods that do not produce monopolies, such as promoting its products' virtues or issuing necessary product specifications.¹⁷⁹

The extension of the patent misuse doctrine in the period from *Motion Picture Patents to Mercoïd I*¹⁸⁰ was accompanied by a judicial willingness to apply the expanding standard fashioned for patent misuse to tying arrangements challenged under the antitrust statutes. The antitrust and patent standards were virtually equated in *Mercoïd II*,¹⁸¹ where the Court without dissent held that any attempt to "extend" the patent monopoly to unpatented articles is, without more, a violation of the antitrust laws.¹⁸² Because the Court found an antitrust violation based only on the license to make the unpatented switch, the decision indicates that no separate inquiry was required into actual market conditions in the furnace or thermostat industries, or the existence of suitable substitutes for the patented combination.¹⁸³

The cross-fertilization between patent and antitrust doctrine continued in *International Salt Co. v. United States*,¹⁸⁴ the first Sherman Act case to find a per se violation from the existence of a tying arrangement. The International Salt Company, the largest domestic producer of salt for industrial purposes, leased its "Lixator" and "Saltomat" machines on the condition that only unpatented salt products purchased from International Salt be used with the machines.¹⁸⁵

The Lixator tying contract provided that the tied salt would be sold at

178. *Id.* at 138-39 (quoting *Carbice Corp. v. American Patents Dev. Corp.*, 283 U.S. 27, 32 (1931)).

179. *See IBM*, 298 U.S. at 139-40.

180. *Mercoïd Corp. v. Mid-Continent Invest. Co.*, 320 U.S. 661 (1944). *See supra* notes 99-101 and accompanying text.

181. *Mercoïd Corp. v. Minneapolis-Honeywell Regulator Co.*, 320 U.S. at 680 (1944).

182. *Id.* at 684. Justice Douglas, writing for the majority, considered that the "legality of any attempt to bring unpatented goods within the protection of the patent is measured by the anti-trust laws not by the patent law." He concluded that even apart from the license agreements' price-fixing provisions, the attempt to control competition by licensing the unpatented thermostat required in the patented combination "plainly violates the anti-trust laws." For this reason, dismissal of the antitrust claims was reversed with the instruction that "petitioner is entitled to be relieved against the consequences of those acts." *Id.* Four justices concurred in the result without opinion, on the authority of *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942).

183. In each of the *Mercoïd* cases, the patentee could have sold the complete patented combination to realize the same profit as on the "unpatented" stoker switch and thermostat, e.g., by buying the remaining components and selling them at cost or at a profit. The Court condemned the effort to "shift" the profit from the patented combination to one of its unpatented parts, without considering the relative pricing of the authorized nonstaple switches and the competing products.

184. 332 U.S. 392 (1947).

185. *See id.* at 393, 394 n.5, 395 n.6.

the competitive market rate.¹⁸⁶ The Court determined that the total volume of business affected was not "insignificant or insubstantial,"¹⁸⁷ relying on the net sales of salt products for use in the machines.¹⁸⁸ The Court did not comment on the profit, if any, from the lease of the machines. No other consideration was given to the actual market for salting machines or salt,¹⁸⁹ or International's share of either.¹⁹⁰

Citing the two *Mercoid* cases¹⁹¹ and *Morton Salt*,¹⁹² the Court held that the existence of patents affords no immunity from the antitrust laws, and that "it is unreasonable, *per se*, to foreclose competitors from any substantial market."¹⁹³ Rather than focusing on the interests of the patented machine users, who at least in the Lixator leases were guaranteed rock salt at competitive market prices, the Court emphasized the "stifling effect of the agreement on competition" and the requirement that a competitor must "undercut [International Salt's] price to have any hope of capturing the market."¹⁹⁴ The Court further rejected a goodwill defense, that competitors' rock salt varied in sodium chloride content and could disturb the functioning of the Lixator, increasing International's maintenance costs.¹⁹⁵

Using the *per se* rule, *International Salt* was the first Supreme Court case condemning a tying arrangement where the tying product did not have market dominance.¹⁹⁶ Thus, it is possible that the antitrust *per se* rule was invented to allow similar arrangements to be found violative of

186. If a general reduction in the price of rock salt suitable for use in the machine occurred, International would have the opportunity to meet the market price, and if International could not meet the competitive price, the lessee would have the right to continue using the machine at the agreed rate with salt purchased in the open market. *See id.* at 394 n.5. The Saltomat contract did not include a similar provision. *See id.* at 395 n.6. Over 90% of the leases containing the tying clause were for Lixator machines (i.e., 836 Lixator leases and 73 Saltomat leases). *See id.* at 395.

187. *Id.* at 396.

188. *See id.* at 395 (approximately 119,000 tons in 1944, for about \$500,000).

189. The machines were patented, but the significance of this circumstance in *International Salt* was the subject of later disagreement. *See infra* note 243.

190. The Court's only comment was that under the statutory standard forbidding agreements that "tend to create a monopoly . . . it is immaterial that the tendency is a creeping one rather than one that proceeds at full gallop; nor does the law await arrival at the goal before condemning the direction of the movement." 332 U.S. at 396. *International Salt* has been repeatedly criticized by economists because the tying provisions could not have created a monopoly in the salt market. *See infra* notes 446-49 and accompanying text.

191. *Mercoid Corp. v. Mid-Continent Invest. Co.*, 320 U.S. 661 (1944); *Mercoid Corp. v. Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680 (1944).

192. *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942).

193. 332 U.S. at 396.

194. *Id.* at 397.

195. *See id.*

196. *See infra* notes 219-23 and accompanying text.

the antitrust laws.¹⁹⁷ No evidence of market share was required, and no mention was made of the existence of possible substitutes for the Lixator or Saltomat, such as the *Morton Salt* machines considered in the tying context only two years earlier.¹⁹⁸

An antitrust violation resulted when the per se rule against tying was extended to the copyright "monopoly" in *United States v. Paramount Pictures, Inc.*,¹⁹⁹ where patent misuse principles were freely applied to block-booking, i.e., the practice of licensing one copyrighted feature on condition that the exhibitor will also license another feature or group of features released by the distributor.²⁰⁰ The Court considered that the "enlargement of the monopoly of the copyright" resulting from such a requirement should be "condemned . . . on the principle which forbids the owner of a patent to condition its use on the purchase or use of patented or unpatented materials."²⁰¹ The reasoning of the Court was that each film should compete on its individual merits.²⁰²

This principle was adopted and applied to block-booking of features for television exhibition in *United States v. Loew's, Inc.*²⁰³ Six major distributors had independently required television stations to accept

197. In support of the per se rule against foreclosure, the Court cited only *Fashion Originators' Guild of America v. Federal Trade Comm'n*, 114 F.2d 80 (2d Cir. 1940), *aff'd*, 312 U.S. 457 (1941). That case involved a "commanding position," if not dominance of the market for women's garments, since the 176 manufacturers of the guild sold more than 38% of all women's garments wholesaling at \$6.75 and up, and more than 60% of those at \$10.75 and up. See 312 U.S. at 462.

198. International Salt offered to prove that competing salting machines were available as substitutes for its patented machines, and economists have urged that for this reason there could be no market power in the tying product. See *infra* notes 443-50 and accompanying text.

199. 334 U.S. 131 (1948).

200. See *id.* at 158.

201. *Id.* at 157 (citing *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436, 459 (1940); *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488, 491 (1942); *Mercoid Corp. v. Mid-Continent Invest. Co.*, 320 U.S. 661, 665 (1944)).

202.

Where a high quality film greatly desired is licensed only if an inferior one is taken, the latter borrows quality from the former and strengthens its monopoly by drawing on the other. The practice tends to equalize rather than differentiate the reward for the individual copyrights. Even where all the films included in the package are of equal quality, the requirement that all be taken if one is desired increases the market for some. Each stands not on its own footing but in whole or in part on the appeal which another film may have. . . . [T]he result is to add to the monopoly of the copyright in violation of the principle of the patent cases involving tying clauses.

334 U.S. at 158.

203. 371 U.S. 38 (1962).

blocks of films, and had refused requests to select among the films in the blocked groups.²⁰⁴ As in *International Salt*, severe difficulties with market power were present: The six "keenly competing" feature film distributors operated in a market which constituted less than eight percent of television programming.²⁰⁵ Instead of considering any distributor's market share, the Court presumed that market power resulted from the copyrighted nature of the block-booked films.

Explaining that the presumption of economic power had grown out of a long line of patent cases²⁰⁶ reflecting "a hostility to use of the statutorily granted patent monopoly to extend the patentee's economic control to unpatented products,"²⁰⁷ the Court offered an unsatisfactory explanation²⁰⁸ for incorporating patent principles into antitrust law governing a copyright tying arrangement:

204. For example, Loew's required a contract from one station for the entire library of 723 films at a cost of \$314,725.20. *Id.* at 41. The problem, in the Court's view, was that "forcing a television station which wants 'Gone with the Wind' to take 'Getting Gertie's Garter' as well is taking undue advantage of the fact that to television as well as motion picture viewers there is but one 'Gone with the Wind.'" *Id.* at 48 n.6.

205. See *id.* at 41, 47. For this reason, at least one of the distributors could have had at most a 17% share of the feature films market, or less than 2% of the overall television market. The embarrassment of this predicament is evident, since in *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594 (1953), the Court had held a 40% share of the newspaper advertising market insufficient to demonstrate the requisite market power for an antitrust tying violation. See *infra* notes 231-35 and accompanying text. The feature films were considered "unique" and not "fungible," but this quality would concern only the ultimate viewer, and not the television advertiser, for whom any television medium would be as "fungible" as the morning and evening papers at issue in *Times-Picayune*. Despite the "uniqueness" rationale, the objection to the ties in each case appears to be the same: the buyer was forced to purchase an inferior or undesired advertising medium in order to obtain one more desirable.

206. See 371 U.S. at 46, citing *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917); *Carbice Corp. v. American Patents Dev. Corp.*, 283 U.S. 27 (1931); *Leitch Mfg. Co. v. Barber Co.*, 302 U.S. 458 (1938); *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436 (1940); *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942); and *Mercoind Corp. v. Mid-Continent Invest. Co.*, 320 U.S. 661 (1944).

207. 371 U.S. at 46.

208. "Uniqueness" is not a requirement for patentability, and has only a most tenuous relationship, if any, to the statutory criteria of utility, novelty and nonobviousness actually rewarded by the grant of a patent. See 35 U.S.C. §§ 100-103 (Supp. II 1984). If "uniqueness" is to be considered a species of novelty, it is not even a requirement for copyright, where a work need only be "original" in the sense of originating with its author, rather than being a copy. See 17 U.S.C. § 102(a) (1982); see also *Mazer v. Stein*, 347 U.S. 201, 217-18 (1954); *Imperial Homes Corp. v. Lamont*, 458 F.2d 895, 897 (5th Cir. 1972); *Sheldon v. Metro-Goldwin Pictures Corp.*, 81 F.2d 49, 53-54 (2d Cir.), *cert. denied*, 298 U.S. 669 (1936); *Fred Fisher, Inc. v. Dillingham*, 298 F. 145, 150-51 (S.D.N.Y. 1924). Disregard of the significant legal distinctions between the "monopoly" conferred by patents and copyrights has characterized both the historical development of the misuse doctrine, and the economic critique of the antitrust presumption of market power.

Since one of the objectives of the patent laws is to reward uniqueness, the principle of these cases was carried over into antitrust law on the theory that the existence of a valid patent on the tying product, without more, establishes a distinctiveness sufficient to conclude that any tying arrangement involving the patented product would have anticompetitive consequences.²⁰⁹

It is not necessary to show "market dominance" to prove economic leverage, even when this is defined minimally as only "some power to control price and to exclude competition."²¹⁰ The "crucial economic power may be inferred from the tying product's desirability to consumers or from uniqueness in its attributes."²¹¹ Even in the case of unpatented tying products, "it should seldom be necessary in a tie-in sale case to embark upon a full-scale factual inquiry into the scope of the relevant market for the tying product and into the corollary problem of the seller's percentage share in that market."²¹²

The rule that legally differentiated tying products, such as those protected by a patent or copyright, provide a presumption of market power in the antitrust tying analysis has often been confirmed by the Court,²¹³ subject only to the requirement that a "not insubstantial" amount of commerce in the tied product must be affected.

Even brief consideration of decisions involving such "nondifferentiated" tying products illustrates the decisive role of the presumption. While no Supreme Court antitrust case since *A.B. Dick*²¹⁴ has found the tying arrangement of a differentiated product lawful, only *Northern*

209. 371 U.S. at 46 (citing *International Salt Co. v. United States*, 332 U.S. 392 (1947)).

210. See 371 U.S. at 45. The requisite economic power in the antitrust tying context "does not necessitate a demonstration of market power in the sense of § 2 of the Sherman Act." *Id.* at 45 n.4.

211. *Id.* at 45. The acceptance of uniqueness as an index of market power has been harshly criticized. See Lavey, *supra* note 146, at 440 (The Court "incorrectly used uniqueness as an indicator of market power and then aggravated that error by equating intellectual property with uniqueness"); Turner, *The Validity of Tying Arrangements under the Antitrust Laws*, 72 HARV. L. REV. 50, 53 (1958) ("[D]istinctiveness, though likely to confer some slight power to vary price within narrow limits, may confer no power at all. A product's unique element may be wholly offset by other attractions of competing commodities."); Pearson, *Tying Arrangements and Antitrust Policy*, 60 NW. U.L. REV. 626, 644 (1965) (desirability or uniqueness "confers very little market power, or none at all").

212. 371 U.S. at 45 n.4. The Court continued, "This is even more obviously true when the tying product is patented or copyrighted, in which case . . . sufficiency of economic power is presumed." *Id.*

213. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 16 (1984).

214. *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912).

*Pacific*²¹⁵ has found a tying arrangement of a nondifferentiated product unlawful.²¹⁶ The heavy presumption against ties involving patented products, ultimately stemming from unmistakable congressional intent in the Clayton Act,²¹⁷ has been applied despite the Court's acknowledgment that patents may confer little if any actual economic power in the relevant market. As the Court conceded at the high-water mark of the per se rule in *Northern Pacific*,

it is common knowledge that a patent does not always confer a monopoly over a particular commodity. Often the patent is limited to a unique form or improvement of the product and the economic power resulting from the patent privileges is slight. As a matter of fact the defendant in *International Salt* offered to prove that competitive salt machines were readily available which were satisfactory substitutes for its machines (a fact the Government did not controvert), but the Court regarded such proof as irrelevant.²¹⁸

Market power was not in dispute in such landmark antitrust tying cases as *United Shoe II*²¹⁹ or *International Business Machines*,²²⁰ since the Court concluded that United Shoe supplied more than ninety-five percent of the United States market for the shoe machinery at issue.²²¹ Similarly, the tying arrangement employed by IBM, and its noncompetition agreement with its sole competitor, had operated to create a

215. *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958).

216. In *Federal Trade Comm'n v. Gratz*, 253 U.S. 421 (1920), the Court held that a complaint alleging that the sale of cotton ties was conditioned on the purchase of jute bagging did not state an actionable "unfair method of competition" under § 5 of the Federal Trade Commission Act, because it failed to allege monopolistic purpose or market control. *See id.* at 428, further explained in *Times-Picayune*, 345 U.S. at 606 & n.21. Gratz was rejected in *Federal Trade Comm'n v. Brown Shoe Co.*, 384 U.S. 316, 320-21 (1966). A second early nondifferentiated case similarly found no violation of the Clayton Act from the lease of gasoline pumps to station owners at nominal rates, tied to the purchase of gasoline. *See FTC v. Sinclair Refining Co.*, 261 U.S. 463 (1923). No monopolistic purpose or power was shown, and the bargain leases encouraged the entry of station owners, who were not precluded from selling another brand of gasoline (through different pumps) or from buying gasoline without accepting the pumps. *See id.* at 474-75. The Federal Trade Commission had found that the practical effect of this arrangement was to exclude competitors from the market for gasoline. A goodwill justification was also noted by the Court, in the protection of the lessor's branded gas. *See id.* at 475.

217. *See supra* notes 64-65, 161-63 and accompanying text.

218. 356 U.S. at 10 n.8.

219. *United Shoe Mach. Corp. v. United States*, 258 U.S. 451 (1922).

220. *International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936).

221. 258 U.S. at 455.

monopoly in the production and sale of tabulating cards.²²² Each case thus clearly satisfied the Clayton Act in that the effect of the practice might have been to "lessen competition substantially, or . . . create a monopoly."²²³

D. Actual Market Power and Nondifferentiated Tying Products

Because the presumed market power in *International Salt*²²⁴ and *Paramount Pictures*²²⁵ foreclosed inquiry into underlying market conditions, the antitrust requirement of market power must be further investigated in cases of nondifferentiated (not protected by a patent or copyright) tying products.

The definition of market power in antitrust tying cases begins with *Times-Picayune Publishing Co. v. United States*,²²⁶ the first modern Supreme Court tying case not related to a patent or copyright. There, in an abrupt departure from the rule that market power need be only de minimis in tying antitrust cases,²²⁷ the Court suggested that "dominance" in the relevant market must be shown for a Sherman Act violation, at least for nondifferentiated tying products.²²⁸ Buyers of advertising space in the morning *Times-Picayune* newspaper were required to place the same advertisements in the evening *States*, owned by the same publisher, at "unit rates."²²⁹ The Court considered separately the interests of

222. 298 U.S. at 135-36. IBM made 81% of all such cards sold, and its only competitor, Remington Rand, produced 19%. See *id.* Since this is 100% of the "total," it is somewhat unclear how the "large quantities" of cards manufactured for the United States were included by the Court. See *id.* at 139. Monopoly power was equally clear in the market for the tying product. At the time of appeal, only Remington Rand and IBM provided computing machines. *Id.* at 132. Moreover, IBM's computer may have been "unique" apart from its patent, being the only machine capable of electrically reading card data. *Id.* at 133.

223. *Id.* at 135 (quoting § 3 of the Clayton Act).

224. *International Salt Co. v. United States*, 332 U.S. 392 (1947).

225. *United States v. Paramount Pictures, Inc.*, 334 U.S. 131 (1948).

226. 345 U.S. 594 (1953).

227. *Cf. International Salt Co. v. United States*, 332 U.S. 392, 396 (1947) (not "insignificant or insubstantial"); see *supra* notes 184-90 and accompanying text.

228. 345 U.S. at 610-13. The *Times-Picayune* was the sole morning daily newspaper in the area, leading in circulation, number of pages, and advertising linage. See *id.* at 610. In the absence of any competing morning newspaper, the Court determined that the entire newspaper advertising market in New Orleans was the relevant market, and that the *Times-Picayune's* share of both general and classified linage was about 40%. See *id.* at 611-12. The Court followed a tortured path in finding an absence of "that market dominance, which, in conjunction with a 'not insubstantial' volume of trade in the 'tied' product, would result in a Sherman Act offense." *Id.* at 612-13.

229. See *id.* at 596-97. The tying product was the morning newspaper classified advertising space, and the tied product was the evening newspaper classified advertising space.

buyers in exercising "independent judgment as to the 'tied' product's merits" and those of competing sellers who are "foreclosed from offering up their goods to a free competitive judgment, and are effectively excluded from the marketplace."²³⁰ Applying a short-lived test requiring a "monopolistic position" in the market for the tying product,²³¹ the Court found that the morning *Times-Picayune's* forty percent share of the total New Orleans advertising market did not confer "market dominance."²³²

The remarkable flexibility provided both by the concept of a relevant market and by the requirement of separate products is well illustrated by *Times-Picayune*. The four dissenting justices urged that *Times-Picayune* enjoyed a "conceded and complete monopoly" of access to "the all-important columns of the single morning newspaper"²³³ and in an influential article, Professor Donald Turner persuasively argued that the market issue was "clearly mishandled," since if the relevant market included both the morning and afternoon paper advertising markets, as the Court maintained,²³⁴ the newspaper publisher had a seventy-percent market share, rather than forty percent.²³⁵

While a forty-percent market share was considered insufficient to demonstrate market power in *Times-Picayune*, no evidence of market power was required by the Court in its next nondifferentiated Sherman Act tying case only five years later. In *Northern Pac. Ry. v. United States*,²³⁶ the Court considered a tying clause in land sales contracts and leases, requiring the buyers and lessees of at least 2.5 million acres²³⁷ near its transcontinental railroad line to ship commodities produced on

230. *Id.* at 605.

231. The Court retreated from this requirement five years later in *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958), and also abandoned the distinction between the requirements of the Sherman and Clayton Acts in tying cases suggested in *Times-Picayune*, 345 U.S. at 608-09.

232. *See* 345 U.S. at 611-13.

233. *See id.* at 628. Furthermore, a substantial entry barrier existed, since past performance of entering dailies suggested that a newcomer faced an 11% chance of survival in a city in which a unit plan had taken hold, and such a new entrant would be faced with the practical requirement of publishing both a morning and an evening paper to compete effectively in the essential advertising market. *Cf. id.* at 604.

234. The Court held that there was no distinction between the advertising markets for morning and evening newspapers, and that each represented "fungible customer potential" for advertisers, or a single product. *See* 345 U.S. at 613. Compare the result in *United States v. Loew's, Inc.*, 371 U.S. 38 (1962); *see supra* notes 203-12 and accompanying text.

235. *See* Turner, *supra* note 211, at 55 n.21. Furthermore, if the morning and afternoon classified advertisements were separate products, necessary for a tie-in in the first instance, the *Times-Picayune* had a 100% share of the former. *See id.*

236. 356 U.S. 1 (1958).

237. *See id.* at 7 n.6.

the land over its lines.²³⁸ The contracts provided that the rates charged would be equal or better than those of competing carriers,²³⁹ and the land was sold at the market rate.²⁴⁰ Justice Black, writing for the majority, declined the invitation of three dissenting justices²⁴¹ to consider whether the power to dispose of forty million acres was proof of market dominance in land located near the railroad line.²⁴²

Instead, he extended the *per se* rule formerly applied when the tying product was legally differentiated to cases in which economic power is "sufficient . . . to impose an appreciable restraint on free competition in the tied product" and "a not insubstantial amount of interstate commerce is affected."²⁴³ Since a tying agreement "inevitably" curbs competition on the merits with the tied product,²⁴⁴ and tying arrangements "serve hardly any purpose beyond the suppression of competition,"²⁴⁵ they are unreasonable *per se* when these two minimal conditions are met.²⁴⁶ Evi-

238. *See id.* at 3.

239. *See id.* at 3, 7 n.6.

240. The preferential routing clauses conveyed no benefit on the purchasers or lessees since the land came no cheaper than if the clause had been omitted. Any price reduction would have been an unlawful rebate to the shipper. *See id.* at 8. This aspect of the contract has been widely discussed. *See infra* note 467.

241. *See infra* note 248.

242. The majority opinion accounts for only 2.5 million acres, or 6.25% of the 40 million acres disposed of by the railroad. The land was disposed in a checkerboard pattern consisting of every alternate section of land in a belt 20 miles wide on each side of the track through states, and 40 miles wide through territories. *See* 356 U.S. at 3.

243. *See id.* at 11. Justice Black insisted that the distinction was immaterial between the leases in *Northern Pacific* and the patented machines in *International Salt Co. v. United States*, 332 U.S. 392 (1947). He maintained that the Court had placed no reliance on the fact that the salt dispensing machines were patented, and that the result would not have been any different if this had not been the case. *See* 356 U.S. at 9 ("If anything, the Court held the challenged tying arrangements unlawful despite the fact that the patented item was patented, not because of it."). The dissent considered that *International Salt* had "simply treated a patent as the equivalent of proof of market control." 356 U.S. at 18.

244. *See* 356 U.S. at 6.

245. *Id.* (quoting *Standard Oil Co. of Cal. v. United States*, 337 U.S. 293, 305-06 (1949)).

246. 356 U.S. at 6-7. However, if a seller has

no control or dominance over the tying product so that it does not represent an effectual weapon to pressure buyers into taking the tied item any restraint of trade attributable to such tying arrangements would obviously be insignificant at most. As a simple example, if one of a dozen food stores in a community were to refuse to sell flour unless the buyer also took sugar it would hardly tend to restrain competition in sugar if its competitors were ready and able to sell flour by itself.

dence of the "actual effect of the tying clauses upon competition" is "irrelevant."²⁴⁷

Thus, the substantial landholdings were considered sufficient to establish, without significant economic analysis that Northern Pacific possessed "substantial economic power" and used it as "leverage" to force its lessees and purchasers to give it preference in shipping.²⁴⁸ The absence of any possibility of supernormal profit in the tied product, due to regulation of shipping, was dismissed as immaterial to the antitrust offense.²⁴⁹

In *Northern Pacific* the per se rule was applied for the first time outside the context of a patented or copyrighted tying article and essentially divorced from market share or other economic factors. Justice Black approached the logical limits of Justice Frankfurter's famous apothegm, that tying arrangements "serve hardly any purpose beyond the suppression of competition,"²⁵⁰ in providing per se condemnation without examination of actual market power. Justice Frankfurter correctly epitomized the judicial philosophy distilled from the Clayton Act and applied it with surprising uniformity in patent and antitrust law in the half century following *Motion Picture Patents*.²⁵¹ However, the application of Frankfurter's apothegm to the facts of *Northern Pacific* inspired a phenomenal outpouring of scholarly and economic debate, challenging the basic social judgment that tying arrangements, by nature, lack any redeeming social virtue.²⁵² The three Supreme Court tying cases that followed *Northern Pacific* demonstrate the increasing influence of economic criticism of this postulate, and the inherent tension between the economists' model of competition and traditional judicial concepts of leverage and forcing.

In *Fortner Enterprises v. United States Steel Corp.*,²⁵³ market power was virtually eliminated as a requirement for an antitrust tying violation, when the Supreme Court considered the tied sale of credit and prefabricated housing. Applying the per se rule of *Northern Pacific* to a com-

247. See *id.* at 9 (explaining *Standard Oil* and *International Salt*).

248. See 356 U.S. at 7. The absence of economic proof of market power was not overlooked by the Court, since the dissenting justices argued that the district court "should have taken evidence of the relative strength of appellants' landholdings vis-à-vis that of others in the market for land of the types now or formerly possessed by appellants" or other evidence of uniqueness. See *id.* at 16 (citing *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594 (1953) and *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956)) (Harlan, J., dissenting, joined by Frankfurter and Whittaker, J.J.).

249. See 356 U.S. at 12.

250. *Standard Oil Co. of Cal. v. United States*, 337 U.S. 293, 305-06 (1949) (dictum).

251. 243 U.S. 502 (1917).

252. See *infra* Section III.

253. 394 U.S. 495 (1969).

pletely fungible product without unique differentiating characteristics, the principal issue was whether U.S. Steel had sufficient economic power over credit, the tying product here, appreciably to restrain free competition in prefabricated housing, the tied product.²⁵⁴

The Court found that sufficient market power exists if there is "any appreciable restraint on competition . . . resulting whenever the seller can exert some power over some of the buyers in the market, even if his power is not complete over them and over all other buyers in the market."²⁵⁵ The Court added that sufficient market power in the tying product can be found "even though the power falls far short of dominance and even though the power exists only with respect to some of the buyers in the market."²⁵⁶

The Court acknowledged an economic definition of market power, "the ability of a single seller to raise price and restrict output, for reduced output is the almost inevitable result of higher prices,"²⁵⁷ but remanded the case for a consideration of "uniqueness." The dissenting justices advanced economic arguments, insisting that credit is a completely fungible commodity, and that there could be no market power unless U.S. Steel had power to raise credit rates without being replaced with substitute credit sources.²⁵⁸

In dissent, Justice White accepted the economic arguments that tying arrangements may be used to evade price control through clandestine transfer of the profit to the tied product, and that they may be used as a counting device to effect price discrimination.²⁵⁹ He also considered other possibilities for market distortion, including forcing a full line of products on a customer,²⁶⁰ and requiring a potential tied market competitor to enter the market for the tying product as well, imposing

254. The district court had granted summary judgment on the basis that plaintiff had not shown sufficient economic power over credit, and that the amount of interstate commerce in the tied product affected was "insubstantial" because only a very small percentage of the land available for development in the area was foreclosed. *See id.* at 499.

255. *Id.* at 503.

256. *Id.*

257. *Id.*

258. As Justice White objected, "A low price on a product is ordinarily no reflection of market power." *Id.* at 515 (dissenting with Justice Harlan). Justice Fortas, joined by Justice Stewart, "in general" subscribed to Justice White's opinion, and added a separate statement of his reasons. *See id.* at 520.

259. *See id.* at 513 & n.6,7 (citing Bowman, *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957)).

260. *See* 394 U.S. at 513 n.8 (citing Burstein, *A Theory of Full-Line Forcing*, 55 NW. U.L. REV. 62 (1960)).

significantly higher barriers to entry.²⁶¹ Accepting these distortions of the market as the basic injury of tying arrangements, Justice White insisted that each depends on the existence of some market power in the tying product, "quite apart from any relationship which it might bear to the tied product."²⁶² While relying on the established concept of leverage,²⁶³ he maintained that "[t]his evil simply does not exist if there is no power in the first market."²⁶⁴ However, the basis for the rule is "clear" where the seller is dominant in the tying product market, where the product is patented, or where it is in short supply, since "[i]n these cases the restraint on competitors in the tied product as well as on buyers of the tying product is reasonably apparent."²⁶⁵

Justice White's market power argument prevailed when the case again reached the Supreme Court eight years later,²⁶⁶ and the factual finding²⁶⁷ of both lower courts that U.S. Steel had sufficient economic power in the tying credit market was reversed.²⁶⁸ The Supreme Court considered four types of evidence relating to economic power: (1) ownership by one of the nation's largest corporations; (2) a significant number of tying arrangements with customers other than Fortner; (3) a noncompetitive price for the tied product;²⁶⁹ and (4) the "unique" financing terms, providing both one hundred percent of Fortner's acquisition and development costs, and a low interest rate.²⁷⁰

Acknowledging that economic "leverage" is indicative of market power in the tying product, the Court found such leverage was absent, since Fortner was not required to purchase varying quantities of the tied

261. See 394 U.S. at 513.

262. *Id.* at 514.

263. See *id.* at 519 ("The principal evil at which the proscription of tying aims is the use of power in one market to acquire power in, or otherwise distort, a second market.").

264. *Id.*

265. *Id.* at 517-18.

266. *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610 (1977) ("*Fortner II*").

267. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 42 (1984) (O'Connor, J., concurring) ("appellate courts should normally defer to the district court's findings on such fact-based questions" as market power).

268. The earlier finding that the dollar value of sales was "not insubstantial" was not disturbed. 429 U.S. at 614.

269. Fortner borrowed over \$2,000,000, to finance both the purchase of 210 prefabricated houses for about \$689,000 and the costs of land, development and construction. *Id.* at 613. The price differential on the least expensive prefabricated house, which cost about \$3,150, was estimated at about \$450 over the market price for comparable models, supporting the inference that the price for the houses was noncompetitive. See *id.* at 615.

270. With respect to 100% financing, the loan was "unique because the lender accepted such a high risk and the borrower assumed such a low cost." *Id.* at 616.

product over an extended period of time.²⁷¹ Similarly, the Court concluded that there was no evidence that due to its size, U.S. Steel was able to borrow funds on terms more favorable than its competitors, or enjoyed any cost advantage in the credit market.²⁷² The noncompetitive price paid for the tied product was also nonprobative of economic power, since this was "consistent with the possibility that the financing was unusually expensive, and that the price for the entire package was equal to, or below, a competitive price."²⁷³

Confirming the rule that a seller need not have a dominant position throughout the market, the Court indicated that the proper test for market power is

whether the seller has the power, within the market for the tying product, to raise prices or to require purchasers to accept burdensome terms that could not be exacted in a completely competitive market. In short, the question is whether the seller has some advantage not shared by his competitors in the market for the tying product.²⁷⁴

The Court preserved earlier indicia of uniqueness without modification: "unique" attractiveness sufficient to persuade buyers to pay a premium above the price of the nearest substitute;²⁷⁵ legal barriers such as patented and copyrighted products;²⁷⁶ physical barriers, as when the product is land;²⁷⁷ or economic barriers, as when competitors are unable to produce the distinctive product profitably.²⁷⁸ Ultimately, however, the court concluded that low credit terms, even if unique, will not give rise

271. See *id.* at 617 (citing Bowman, *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957)). See *infra* notes 358-61 and accompanying text.

272. See 429 U.S. at 617.

273. See *id.* at 618 (footnote omitted).

274. See *id.* at 620. The Court approved of Professor Dam's analysis of *Fortner I*:

Market power in the sense of power over price must still exist. If the price could have been raised but the tie-in was demanded in lieu of the higher price, then—and presumably only then—would the requisite economic power exist.

Dam, *Fortner Enterprises v. United States Steel*: "Neither a Borrower, Nor a Lender Be," 1969 SUP. CT. REV. 1, 25-26; see 429 U.S. at 620 n.13.

275. See 429 U.S. at 621 & n.14 (quoting Note, *The Logic of Foreclosure: Tie-In Doctrine after Fortner v. U.S. Steel*, 79 YALE L.J. 86, 93-94 (1969), as illustrating "the kind of uniqueness considered relevant in prior tying-clause cases.").

276. See 429 U.S. at 621 (quoting *Fortner I*, 394 U.S. at 505 n.2).

277. See *id.*

278. See *id.* In *Fortner I*, the Court conceded that "the uniqueness test in such situations is somewhat confusing since the real source of economic power is not the product itself but rather the seller's cost advantage in producing it." *Id.*

to any inference of economic power in the credit market.²⁷⁹ Thus in cases not involving legally differentiated tying products, or the narrow exception of massive land holdings, the Court adopted the economic criticism that no tie could be present without the potential to charge a supracompetitive price for the tying product.²⁸⁰

The most recent antitrust tying case to reach the Supreme Court, *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*,²⁸¹ reveals a fundamental disagreement on the continued vitality of the per se rule. The Court of Appeals had found a tying product (hospital operating room services) and a tied product (anaesthesiological services) to be present,²⁸² and that a "not insubstantial amount of interstate commerce" was affected.²⁸³ The tie restricted the purchase of operating room services at East Jefferson Hospital, the only nonprofit hospital in the East Bank of Jefferson Parish,²⁸⁴ but one of at least twenty hospitals in the New Orleans metropolitan area,²⁸⁵ to the use of four approved anaesthesiologists.²⁸⁶

Writing for the majority,²⁸⁷ Justice Stevens stated the per se rule of *International Salt*, which has been repeatedly endorsed by the Court:²⁸⁸ "It is far too late in the history of our jurisprudence to question the proposition that certain tying arrangements pose an unacceptable risk of stifling competition and therefore are unreasonable *per se*."²⁸⁹ The majority considered that per se condemnation, without inquiry into actual market conditions, "is only appropriate if the existence of forcing

279. *See id.* at 621-22.

280. *See infra* notes 443-45 and accompanying text.

281. 466 U.S. 2 (1984).

282. *See id.* at 8.

283. *See id.*

284. Respondent Hyde unsuccessfully argued that the "uniqueness" test was met, since East Jefferson was the only nonprofit hospital in the relevant market, and regulatory barriers prevented entry of new competitors. *See Note, The Presumption of Economic Power, supra* note 107, at 1149, 1154. The market power of the hospital arguably was augmented by price insensitivity and lack of adequate information to consumers. *See id.* at 1149.

285. *See* 466 U.S. at 7.

286. *See id.* at 30-31.

287. Justice Stevens delivered the opinion for the Court, and Justice O'Connor, joined by Justices Burger, Powell and Rehnquist, concurred in the judgment on the separate basis that the per se rule should be abandoned in antitrust tying cases.

288. 466 U.S. at 9-10 & n. 14 (citing *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610, 619-21 (1977); *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 498-99 (1969); *White Motor Co. v. United States*, 372 U.S. 253, 262 (1963); *Brown Shoe Co. v. United States*, 370 U.S. 294, 330 (1962); *United States v. Loew's, Inc.*, 371 U.S. 38 (1962); *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5 (1958); *Black v. Magnolia Liquor Co.*, 355 U.S. 24, 25 (1957); *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 608-09 (1953); and *Standard Oil Co. of Calif. v. United States*, 337 U.S. 293, 305-06 (1949)).

289. 466 U.S. at 9.

is probable”²⁹⁰ One circumstance that makes anticompetitive forcing likely is the existence of a patent or similar monopoly over a product granted by the Government,²⁹¹ and “the same strict rule is appropriate in other situations in which the existence of market power is probable.”²⁹² This probability exists when the seller’s share of the market is high,²⁹³ when the seller offers a unique product that competitors are not able to offer,²⁹⁴ or enjoys “unique bargaining power” that enables it to persuade buyers to accept a tie.²⁹⁵ The majority thus endorsed the per se rule substantially as it had been left in *Fortner II*, and in addition expressly indicated its approval of the requirement of leveraging, since an essential element of an unlawful tying arrangement is the ability of a seller to “force” customers to buy “a second, unwanted product in order to obtain the tying product.” The court further added that “any inquiry into the validity of a tying arrangement must focus on the market or markets in which the two products are sold, for that is where the anticompetitive forcing has its impact.”²⁹⁶

Application of this rule to the tie in *Jefferson Parish* required consideration of the hospital’s sale of services to its patients, rather than its exclusive contract with anaesthesiologists, and involved two inquiries: whether two separate products were tied and, if so, whether the hospital’s market power was used to “force” patients to accept the tying arrangement.²⁹⁷ With respect to the “two products” rule, the Court discounted the “functional integration” of the package of hospital and anaesthesiological services, stating that the existence of separate products is determined by “the character of the demand for the two items.”²⁹⁸ Thus the “two products” rule is substantially a “distinct mark-

290. *Id.* at 15.

291. *See id.* at 16 (repeating the classic rationale of the rule against “enlarging” the patent monopoly: “Any effort to enlarge the scope of the patent monopoly by using the market power it confers to restrain competition in the market for a second product will undermine competition on the merits in that second market.”).

292. *Id.* at 17.

293. *See id.* (citing *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 611–13 (1953)).

294. *See id.* (citing *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 504–06 & n.2 (1969)).

295. *See* 466 U.S. at 17 (noting that in *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958), “the railroad’s control over vast tracts of western real estate, though not itself unlawful, gave the railroad a unique kind of bargaining power that enabled it to tie the sales of that land to exclusive, long-term commitments that fenced out competition in the transportation market over a protracted period.”).

296. 466 U.S. at 18.

297. *See id.*

298. *Id.* at 19.

ets" requirement.²⁹⁹ Because consumers, or their surgeons, differentiate between anaesthesiological services and other hospital services, the majority considered that the two-products rule was satisfied.³⁰⁰

Turning to market power, the Court reiterated the long-held conviction that the evil condemned by the rule against tying is "foreclosed competition on the merits in a product market distinct from the market for the tying item."³⁰¹ Justice Stevens acknowledged the presence of "market imperfections" that permitted the hospital to "charge noncompetitive prices for hospital services."³⁰² However, "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."³⁰³ The majority offered another economic argument, that "variable-quantity purchasing is unavailable as a means to facilitate price discrimination," thus precluding the existence of leverage.³⁰⁴ Despite the existence of separate tying and tied products, a "not insubstantial" amount of interstate commerce, and market power "as an economic matter,"³⁰⁵ the majority refused to apply the per se rule, and instead found the arrangement benign under the rule of reason.³⁰⁶

While professing to preserve intact antitrust tying precedent, the majority achieved this result by shifting the balance of consideration from the excluded competitor, Dr. Hyde, to the buyer of the tied anaesthesiological services. Determination of whether the requirement involved unlawful "forcing" depended on whether this arrangement used market power to "force patients to buy services they would not otherwise purchase."³⁰⁷ All nine justices agreed that since "every patient

299. See *id.* at 21.

300. See *id.* at 23-24.

301. *Id.* at 21.

302. *Id.* at 27. The Court assumed that the prevalence of third-party payment for health care costs reduced price competition, and that a lack of adequate information rendered consumers unable to evaluate the quality of the medical care provided by competing hospitals. See *id.*

303. *Id.* In an accompanying footnote, the Court acknowledged that "[a]s an economic matter, market power exists whenever prices can be raised above the levels that would be charged in a competitive market." *Id.* at 27 n.46.

304. See *id.* at 28 n.47 (citing *Dam, supra* note 274, at 15-17; and *Turner, supra* note 211, at 67-72). See *infra* notes 358-61, 416-25 and accompanying text. Buttrressing this conclusion with another economic argument, the Court indicated that the arrangement was unlikely to be a clandestine means of avoiding price control, at least in the absence of evidence of a kickback from the anaesthesiologists. See 466 U.S. at 28 n.47; see also *infra* note 361.

305. See 466 U.S. at 27 n.46.

306. See *id.* at 29-32.

307. *Id.* at 26. See also, *United States v. Loew's, Inc.*, 371 U.S. 38, 44 (1962) (Tie-ins "are an object of antitrust concern for . . . they may force buyers into giving up the purchase of substitutes for the tied product. . . ."); *Brown Shoe Co. v. United States*, 370 U.S. 294, 330 (1962) ("The usual tying contract forces the customer to take a product or brand he

undergoing a surgical operation needs the services of an anesthesiologist" there was no indication that the hospital "'forced' any such services on unwilling patients."³⁰⁸

In addition to avoiding the question of the effect of the tie on competitors in the market for the tied product, the reasoning of the Court departs significantly from tying precedent in limiting the inquiry to whether a buyer is forced to buy an unwanted service. Particularly with functionally integrated complementary products, it is inconceivable that purchasers of the tying product would have any use for it without the tied supply.³⁰⁹ Under the reasoning of *Jefferson Parish*, the tying of special packing cartons to dry ice in *Carbice*³¹⁰ would not have involved "forcing," since the customers would all have desired to purchase dry ice from someone. Similarly, all lessees of the computers in *International Business Machines*³¹¹ would have desired to purchase punch cards, since the tying product would have been useless without them. It is difficult to recall an instance in a decided tying case where a buyer was required to purchase something that was unwanted, except in the limited circumstances of block-booking and package licensing.³¹²

The sole emphasis of the Court on "forcing" departs without acknowledgement from most if not all Supreme Court precedent in the tying context, and is far from coherent or internally consistent. Justice O'Connor suggests that the Court perceived one purpose of the tying arrangement as protecting the health interests of patients who were unable to judge among competing suppliers in the tied market.³¹³ Such a beneficent interest parallels the less altruistic desire of a hospital to avoid malpractice by off-the-street practitioners. Competition "on the merits" in the tied product perhaps loses some of its gloss in an industry heavily regulated by the price restraint imposed by insurance companies in the tying market, and exposed to devastating malpractice liability by free competition in the tied product. Perhaps the basis of the holding that

does not necessarily want in order to secure one which he does desire."); *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958) ("[B]uyers are forced to forego their free choice between competing products.").

308. 466 U.S. at 28. *Accord* 466 U.S. at 46 (O'Connor, J., concurring).

309. In an apparent internal contradiction, Justice Stevens acknowledged that the Court has "often found arrangements involving functionally linked products at least one of which is useless to be prohibited tying devices." *Id.* at 19 n.30 (freely citing patent and antitrust cases without distinction).

310. *Carbice Corp. v. American Patents Dev. Corp.*, 283 U.S. 27 (1931).

311. *International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936).

312. On the distinction between package licensing and tying, *see infra* note 518.

313. As Justice O'Connor noted among the "benefits" of the tying arrangement, the hospital assumed responsibility for selecting the anaesthesiologist, and ensuring that the care provided to the patient would be suitable. *See* 466 U.S. at 43-44.

there was insufficient market power in the tying product was that seventy percent of patients residing in the parish elected to enter other hospitals, thus making East Jefferson's "dominance" in the relevant product market "far from overwhelming"³¹⁴ by simple analogy to the parable of flour and sugar proposed in *Northern Pacific*.³¹⁵ While suggesting a number of plausible legal theories in support of the decision, the majority opinion identifies only the "forcing" issue, which is inconsistent with the body of antitrust and patent tying precedent, and with the Court's professed intention to preserve the established rule. For this reason, *Jefferson Parish* is of little value considered apart from its particular facts, leaving "uniqueness" and market share suspended in a queasy balance, and the circumstances appropriate for applying the per se tying standard in doubt. The authority of the majority opinion is further eroded by enactment of Section 271(d)(5), since Congress has now expressly overruled the holding of the Court quoted above that it is "far too late" to question the proposition that tying arrangements involving patents "pose an unacceptable risk of stifling competition and therefore are unreasonable per se."³¹⁶

Justice O'Connor in a concurring opinion did not temporize, but urged outright rejection of the venerable per se rule.³¹⁷ The concurring opinion is noteworthy for its direct attack on the underlying concepts of the tying doctrine consistently accepted and applied in the previous seventy years, including the "common misconception . . . that a patent or copyright, a high market share, or a unique product that competitors are not able to offer suffices to demonstrate market power."³¹⁸ Tying arrangements are not generally anticompetitive, but entail "economic benefits" that should "enter the rule-of-reason balance."³¹⁹ Economic

314. See *id.* at 26.

315. *Northern Pac. Ry. v. United States*, 356 U.S. 1, 6-7 (1958); see *infra* note 336 and accompanying text.

316. 466 U.S. at 9.

317. See *id.* at 35 (joined by Burger, Powell and Rehnquist, J.J.).

318. At least with respect to patents, the misconception is common to the majority opinion and all Supreme Court precedent addressing the question. Justice O'Connor appears to conclude that precedent indicates that a patent conveys "market power" in the sense of an economic monopoly, or market "dominance." But see *Northern Pac. Ry. v. United States*, 356 U.S. 1, 10 n.8 (1958); *supra* note 231 and accompanying text. The presumption serves a different purpose in eliminating the need for economic evidence on market share and substitutes where a statutory exclusive right prevents free competition, and the benefit of the proscribed practice is assumed to be slight. See 356 U.S. at 5-6.

319. See 466 U.S. at 41. For this reason, even if market power and leverage are present, a tie-in may be innocuous. See *infra* note 325. This analysis distorts Justice White's dissent in *Fortner I*, 394 U.S. at 514 n.9, where he was careful to qualify his list of possible justifications, observing:

justifications may exist for tying practices, such as cost reduction by joint packaging or shipping, and when such factors are present, an opposite and equal per se rule applies. Evidently it is not necessary to consider the possible anticompetitive effect of the tie-in, since a substantial economic advantage "should be the end of the tying inquiry."³²⁰

Justice O'Connor considers that tying arrangements are only economically harmful in "rare cases" where leverage is exercised.³²¹ The concurring opinion thus adopts the extension of monopoly theory, by granting that there is cause for antitrust concern "where power in the tying product market is used to create *additional* market power in the tied product market."³²² However, the traditional analysis is significantly modified by the imposition of three "threshold" criteria. First, there must be power in the tying product market.³²³ In addition, there must be a "substantial threat that the tying seller will acquire market power in the tied-product market."³²⁴ Finally, there must be a "coherent economic basis for treating the tying and tied products as distinct. . . . [T]he tied product must, at a minimum, be one that some consumers might wish to purchase separately *without also purchasing the tying product*."³²⁵

tial basis for an affirmative defense, were not sufficient to avoid the imposition of a per se proscription, once market power has been demonstrated.

Id. Justice O'Connor omits this substantial caveat, since in her view market power, and even monopoly power, is no impediment if "benefits" can be shown.

320. See 466 U.S. at 40.

321. See *id.* at 36. Indeed, Justice O'Connor considers that tying arrangements are frequently beneficial, and that in the absence of market power they "can be only procompetitive in the tying product market." *Id.* at 37.

322. *Id.* at 36 (emphasis in original).

323. See *id.* at 37. Justice O'Connor observes that the Court has failed to define how much market power is necessary, in vacillating from "minimal showing" to "market dominance" standards. Unfortunately, this key question that could resolve the issue is left unanswered. See *id.* at 37 n.6. In Justice O'Connor's view, it is unnecessary to resolve the market power issue, because the functional relationship between the tying and tied products is alone sufficient to immunize the arrangement, no matter what quantum of market power is present.

324. *Id.* at 38. Justice O'Connor appears to suggest that the tie-in at issue, which affected only four anaesthesiologists and one relatively small hospital, might in fact affect an "insubstantial" amount of commerce in the market for hospital services or anaesthesiological services. See *id.* at 45-46. The problem is that Justice O'Connor appears to envision a far greater "threat," particularly since the acquisition of a high market share itself does not "suffice to demonstrate market power." *Id.* at 37 n.7.

325. *Id.* at 39 (emphasis in original). The three criteria that can insulate an "innocuous" tying arrangement do not demonstrate its harmfulness if present, since "[u]nder the rule of reason a tie-in may prove acceptable even when all three are met." *Id.* at 41. In the proposed balance, even when market power sufficient for "forcing" of buyers exists,

it may be entirely innocuous that the seller exploits its control over the tying product to "force" the buyer to purchase the tied product. For when the seller exerts market power only in the tying product market, it makes no difference to him or his

Thus, Justice O'Connor would immunize any tie in which the tied product has no substantial market apart from the tying product, on the theory that "the seller of the tying product can acquire no *additional* market power by selling the two products together."³²⁶ Tying "normally does not increase the profit that the seller with market power can extract from sales of the *tying* product."³²⁷ On this assumption, there is no objection even to a monopolist's decision to tie a second wanted or unwanted product to realize his monopoly profit, instead of simply charging a supracompetitive price for the monopolized article in the first instance.³²⁸ For these reasons, there is no objection to "spreading" the monopoly, i.e., to using the monopoly power that exists in one market to increase market share in the tied product market, at least when the tied product has no separate use other than with the tying product.³²⁹

According to the new theory of tying arrangements proposed by Justice O'Connor, even assuming that the hospital had market power, and that a substantial threat existed that this market power would be extended to acquire market power over the provision of anaesthesiological services, there is no objection to the tie because no one is

customer whether he exploits that power by raising the price of the tying product or by "forcing" customers to buy a tied product.

Id. at 41-42 (citing Markovits, *Tie-Ins, Reciprocity, and the Leverage Theory*, 76 *YALE L.J.* 1397, 1397-98 (1967); Burstein, *A Theory of Full-Line Forcing*, 55 *NW. U.L. REV.* 62, 62-63 (1960)).

326. 466 U.S. at 39 (emphasis in original) ("[w]hen the tied product has no use other than in conjunction with the tying product, a seller of the tying product can acquire no additional market power by selling the two products together."). While the opinion adverts to the seemingly innocuous example of flour and sugar, its effect would extend to substantially eradicate the tying antitrust precedent of the Court. For example, an effective monopolist in the tying product market, such as the electronic computing machines market in *International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936), that successfully employed a tying arrangement to obtain a monopoly of the punch card market would be immunized from antitrust liability because the punch cards have "no use other than in conjunction with the tying product." *Id.*

327. 466 U.S. at 36 (emphasis in original).

328. *See id.* at 39 n.8.

329. *See id.* at 39-40. Justice O'Connor hesitates to extend this principle to circumstances in which the tied product is a staple that has a substantial use apart from use with the tying product:

The antitrust law is properly concerned with tying when, for example, the flour monopolist threatens to use its market power to acquire additional power in the sugar market, perhaps by driving out competing sellers of sugar, or by making it more difficult for new sellers to enter the sugar market.

Id. at 36-37. However, such activity poses no threat of economic harm unless the three criteria are met. *See id.* at 37-40.

interested in buying anaesthesia apart from operating room services.³³⁰

More generally, the sole factor to be considered under the antitrust laws is consumer welfare, determined by two factors: the price of the tied product, and the amount of the product produced.³³¹ Efficiency of production is a business justification permitting a tie, even when there is market power in the tying product and extension of that power to acquire market power in the tied product.³³² The interests of competitors in the marketplace have no weight in this balancing.

A broader objection, antithetical to the premises upon which the entire edifice of tying, if not antitrust law, was built, thus infuses Justice O'Connor's opinion. Her argument is not simply that the per se tying rule is a misnomer, or that a heightened requirement of market power should be imposed. Instead, her concurring opinion expresses a radically divergent concept of the purpose of antitrust law, and the permissible limits of "extension" of monopoly market power into second markets, that would return to a vision last embraced by the Court in *A.B. Dick*³³³ and *United Shoe I.*³³⁴ This volte-face is required, even in derogation of the legislative policy fixed in the Clayton Act, by the antithetical model of public good propounded by the economic critics.

In this analysis, questions of public policy, such as the tying prohibition, are reduced to purely abstract terms, such as the frequently-cited parable of the flour and sugar.³³⁵ This model first appeared in *Northern Pacific*, where the requirement of market power over the tying product was illustrated by a homey example:

Of course where the seller has no control or dominance over the tying product so that it does not represent an effectual weapon to pressure buyers into taking the tied item any restraint of trade attributable to such tying arrangements would obviously be insignificant at most. As a simple example, if one of a dozen food stores in a community were to refuse to

330. See *id.* at 42-43. The principal objection of the majority opinion, that a buyer is "forced" to purchase an unwanted tied product, may be "entirely innocuous . . . [f]or when the seller exerts market power only in the tying product market, it makes no difference to him or his customers whether he exploits that power by raising the price of the tying product or by "forcing" customers to buy a tied product." See *id.* at 41-42.

331. See *id.* at 43 (arrangement found unobjectionable because the "link" imposed "will affect neither the amount of anesthesia provided nor the combined price of anesthesia and surgery for those who choose to become the hospital's patients").

332. See *id.* at 43-44.

333. *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912).

334. *United States v. United Shoe Mach. Co.*, 247 U.S. 32 (1918).

335. Justice O'Connor invokes this model six times. See 466 U.S. at 33, 36, 37, 38, 39.

sell flour unless the buyer also took sugar, it would hardly tend to restrain competition in sugar if its competitors were ready and able to sell flour by itself.³³⁶

However, flour and sugar, as actual commodities in the marketplace, have the distinction of nearly perfect competition in the economic sense.³³⁷ The choice of specific examples is thus not neutral, but in each case implies a definite market relationship that can be selected to determine the desired outcome, even where competition is imperfect, and sellers clearly have "some measure of control over price."³³⁸ Cited outside this context, such pure abstractions, with the benefit of simplifying assumptions pandemic in economic theory, can readily be manipulated to reach any desired result.³³⁹ The "proper" principle, thus derived, dictates a result that may have little relation to the determinative market relationships involved in the specific tying issue.

In the antitrust tying analysis, the increasing importance to the Court of economic theoretical models, and demand relationships analyzed with reference to simplifying abstractions, is clear from *Jefferson Parish*. Because the market power requirement newly applied by Section 271(d)(5) to patent misuse tying arrangements involves similar economic issues, the economists' concept of market power, and criticism of traditional legal leverage theory, is now explored in greater detail.

336. *Northern Pac. Ry. v. United States*, 356 U.S. 1, 7 (1958). There the Court determined that the uniqueness of the tying product, land, was sufficient to provide leverage to induce large numbers of purchasers and lessees to give it preference in the tied product, freight services at regulated market rates. *See id.* The fungible commodity model was again cited in *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 509 (1969) (wheat, unfinished steel). In *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610 (1977) the Court determined that no market power was shown in a completely fungible tying commodity, credit. The Court returned to the paradigm of flour in *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 11-12 (1984).

337. *See* P. SAMUELSON & W. NORDHAUS, *ECONOMICS* 503-04 (12th ed. 1985) (citing potatoes, tobacco, wheat, and cotton as examples of commodities meeting a "strict definition of perfect competition"). Their producers do not individually face a downward-sloping demand curve, and there would be no benefit from reducing production since no increase in price or monopoly profit could be obtained. *See id.* at 503.

338. *Id.* at 504.

339. *See infra* note 367 and accompanying text.

III. ECONOMIC MARKET POWER: CRITICISM OF THE PRESUMPTION

The presumption of market power from ownership of a patent or copyright in antitrust tying violations has been extensively criticized on the basis of economic theory,³⁴⁰ providing the "foundation for one of the primary fronts of attack on the antitrust laws today."³⁴¹ More generally, the judicial condemnation of tying arrangements has been questioned, since often the tie-in fails to satisfy formal requirements posed by economic theory for the "extension" of monopoly.³⁴² A separate and narrower factual objection is often made that, contrary to the presumption, patents frequently convey little if any actual economic power in the market for the patented product.³⁴³

Economic criticism of the antitrust presumption has been influential in the debate leading to amendment of Section 271(d). My purpose is to trace the main outlines of the objections to the established tying doctrine advanced by the Chicago school of economists,³⁴⁴ and to examine the increasing influence of their theoretical constructs in the development of

340. At least one hundred scholarly analyses of the antitrust tying prohibition have appeared since *International Salt*. A more than cursory treatment of the debate is impossible in the present account, which concentrates on the legal and economic sources most often cited by the courts. See, e.g., Bowman, *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957); Turner, *supra* note 211; Burstein, *A Theory of Full-Line Forcing*, 55 NW. U.L. REV. 62 (1960); Pearson, *supra* note 211; Markovits, *Tie-Ins, Reciprocity, and the Leverage Theory*, 76 YALE L.J. 1397 (1967); Note, *supra* note 141; Dam, *supra* note 274; R. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 171-80 (1976); W. BOWMAN, PATENT AND ANTITRUST LAW: A LEGAL AND ECONOMIC APPRAISAL 64-119 (1973); R. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 365-81 (1978); Note, *supra* note 143; Landes & Posner, *supra* note 132; Craswell, *Tying Requirements in Competitive Markets: The Consumer Protection Issues*, 62 B.U. L. REV. 661 (1982); Kaplow, *Extension of Monopoly Power through Leverage*, 85 COLUM. L. REV. 515 (1985); Note, *The Presumption of Economic Power*, *supra* note 107; Krattenmaker, Lande & Salop, *Monopoly Power and Market Power in Antitrust Law*, 76 GEO. L.J. 241 (1987); Brown, *supra* note 14.

341. Kaplow, *supra* note 340, at 515. ("Restrictive practices seen by courts as devices to extend monopoly are instead argued to be benign or even efficient techniques by which firms maximize their profits given the market conditions they face.")

342. See *infra* notes 416-25 and accompanying text. Some critics deny the possibility of "extension of monopoly" entirely. See Burstein, *supra* note 340, at 63-64 ("Why do we see again and again in the court reports cases involving the tying of rivets, staples, windshield wipers, repair parts, varnish, etc. when the tying monopolist's share of the market for the tied product remains miniscule [sic]? The game is afoot, and the extension-of-monopoly hypothesis is surely a rusty flintlock!"); R. BORK, *supra* note 340 at 365-66, 372 (the "fallacious transfer-of-power theory" has been "demolished" by economic criticism).

343. See *infra* notes 472-92 and accompanying text.

344. See generally, Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979).

the law respecting tying. It is not an object of the present analysis to judge the internal consistency of the economic counterargument, or extensively to review the tenets of economic theory as applied to the history of tying cases in the courts. Instead, the focus of attention will be the adoption of economic theory, and its interpretation, by the principal antitrust commentators, to explore the fundamental conflict between pure price theory and the governing legal principles of market power that have been applied in antitrust disputes.

A. *The Theoretical Dispute: Prerequisites for "Leverage"*

In an influential early article outlining the economic theory of tying, Professor Ward Bowman distinguished the innocuous use of tying arrangements to maximize revenue provided by a legitimate patent monopoly, from "leverage," defined generally as the power to create a second monopoly beyond the first.³⁴⁵ Measured by this standard, he concluded that judicial decisions involving tying contracts, unchallenged since *Motion Picture Patents*³⁴⁶ and *United Shoe II*,³⁴⁷ "are based upon a false notion of leverage."³⁴⁸ While accepting the longstanding judicial premise that it should be unlawful to attempt to "extend" the scope of a legal monopoly in a tying product to a second monopoly in a tied product,³⁴⁹ Bowman concluded on the basis of economic precepts that the application of this doctrine in the courts has been overbroad in critical respects. He considered five classes of activity traditionally condemned under patent and antitrust tying doctrine,³⁵⁰ and concluded that the existence of leverage is only probable when the tying and tied products

345. See Bowman, *supra* note 340, at 20. The influence of this article may be appreciated not only from its virtually universal citation by commentators, but also from its prominence in the Supreme Court discussion of tying theory. See, e.g., *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 512 n.2, 513 nn.6-7 (1969) (White, J., dissenting); *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610, 617 n.7 (1977); *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 15 n.23 (1984); *id.* at 39 n.9 (O'Connor, J. concurring). Bowman's economic argument elaborates the work of Aaron Director at the University of Chicago. See Director & Levy, *Law and the Future*, 51 NW. U.L. REV. 281 (1956); Posner, *supra* note 344, at 925. Bowman and Robert Bork are cited as representative "diehard" proponents of the Chicago school by Posner, *id.* at 932, and Bowman's exegesis is accepted as authoritative herein.

346. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

347. *United Shoe Mach. Corp. v. United States*, 258 U.S. 451 (1922).

348. Bowman, *supra* note 340, at 20.

349. See *id.* at 30.

350. See *infra* notes 358-425 and accompanying text.

are complementary and are used in variable proportions.³⁵¹ Because of the wide acceptance of Bowman's thesis,³⁵² it will be helpful to consider in some detail the postulates of his economic model. The application of Bowman's categories to specific decisions condemning ties also will illuminate the profound divergence between economists and the judiciary, on the nature and harmful consequences of tying agreements.

According to the alternative economic model proposed by Bowman, the factual requisites for "leverage" are clearly defined, and are predicated upon a substantial monopoly over the tying product.³⁵³ More particularly, they include a pricing relationship, in which the price of the tying product is reduced to induce the tie, and the price of the tied product is raised to a level adequate to more than compensate for the sacrifice of return on the tying product.³⁵⁴ A supernormal price for the

351. See *infra* notes 416-25 and accompanying text. Bowman's conclusion has been judged myopic by critics who consider that he grossly underestimated the potential for harm from tying practices. Slawson objects to Bowman's assumption that only an "extension" of monopoly warrants prohibition of tying arrangements as "incorrect now, and . . . incorrect when he made it." Slawson, *supra* note 146, at 271. He urges that ties invariably reduce competition, even in the absence of market power. See *id.* at 264. The postulates of the Chicago school upon which Bowman's arguments are predicated are attacked in a far-ranging and brilliant critique in Kaplow, *supra* note 340, who concludes that "leverage, even as defined by proponents of the fixed sum argument, is more plausible in some settings than they are willing to admit." *Id.* at 520; see also Kaplow, *The Patent Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1815 (1984). Alternative economic explanations of tying arrangements are advanced by Burstein, *supra* note 340; Bauer, *A Simplified Approach to Tying Arrangements: A Legal and Economic Analysis*, 33 VAND. L. REV. 283 (1980); Craswell, *supra* note 340; and L. SULLIVAN, HANDBOOK OF THE LAW OF ANTITRUST § 152 (1977).

352. Later economic critics have denied the possibility of leverage even in the limited circumstances envisioned by Bowman. See Note, *An Analysis of Tying Arrangements: Invalidating the Leveraging Hypothesis*, 61 TEX. L. REV. 893 (1983); R. BORK, *supra* note 340, at 365-66, 380-81; Note, *Tying Arrangements and the Computer Industry*, *supra* note 107, at 1035 n.51; *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 510-11 (7th Cir. 1982) (Posner, J.), *cert. denied*, 462 U.S. 1107 (1983); Pearson, *supra* note 211, at 652 ("Tying arrangements do not involve leverage, but are simply an exercise of market power, necessary under some circumstances if the holder of the power is to extract the greatest profit from that power."); *but cf. id.* at 643-45, 649 (anticompetitive consequences of tying arrangements result from market power in tying product).

353. See *infra* text accompanying note 421.

354. See *infra* notes 422-24 and accompanying text. Pricing theory is central to Bowman's argument, which is based on the premise that a rational producer will act solely to maximize profit. See Posner, *supra* note 344, at 928:

Director's conclusions resulted simply from viewing antitrust policy through the lens of price theory. Each of his ideas was deducible from the assumption that businessmen are rational profit-maximizers, the deduction proceeding in accordance with the tenets of simple price theory, i.e., that demand curves slope downward, that an increase in the price of a product will reduce the demand for its complement, that resources gravitate to the areas where they will earn the highest return, etc.

tying product is a *sine qua non* of leverage,³⁵⁵ and the social harms from tying are the increased price of the tied product and the accompanying reduction in its supply,³⁵⁶ which exemplify the textbook definition of injury to competition in economic theory.³⁵⁷

1. Tying and Tied Product Consumed in Fixed Proportions

In a first class of activity, in which the tying and tied product are consumed in fixed proportions, Bowman denies the possibility of leverage because there is no theoretical possibility of supernormal pricing of the tied product.³⁵⁸ Employing the example of a nut and bolt, he argues that the value of the combination will be fixed in the market and that even if a patentee has the right to fix any price for a tying nut, the market will demand a corresponding decrease in the price of the tied bolt.³⁵⁹ The amount realized for the combination will be the same as if the optimum price were set for the tying product, and the seller has only established a new method of exercising an already-existing monopoly.³⁶⁰ Although such a tie may be used to evade price regulation of the tying product, in the absence of price regulation there is no economic objection to a fixed-proportion tie.³⁶¹

Bowman's first example reveals a number of fundamental assumptions that underlie the economic theory. First, the price fixed in the market for the combination is determined by the value of the functionally related package to the purchaser, because whenever products such

tioned by Kaplow, *supra* note 340, at 547-52 (price theory focus may obscure the most reasonable explanation of the behavior in question). See *infra* notes 463-65 and accompanying text.

355. See Bowman, *supra* note 340, at 21; Note, *supra* note 142. (tied market sales must "more than compensate" for sacrifice in profit on tying product).

356. See generally Bowman, *supra* note 340.

357. This assumption is basic to the economic criticism. See, e.g., R. BORK, *supra* note 340, at 101; Dam, *supra* 274; Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 40-41, 45 (1984) (O'Connor, J., concurring). See also notes 509-10, *infra*, and accompanying text.

358. See Bowman, *supra* note 340, at 21-23.

359. See *id.* at 21 n.9. See also, R. POSNER, *supra* note 340; but see Kaplow, *supra* note 340, at 526-27 (the cost of such a monopolistic practice is minimal, and has been overestimated by economic critics).

360. See Bowman, *supra* note 340, at 23. See also R. POSNER, *supra* note 340, at 173; R. BORK, *supra* note 340, at 140, 373. Burstein agrees that tying arrangements are contrived because "in general, auxiliary mechanisms are necessary if the full possibilities of monopoly profit are to be realized." Burstein, *supra* note 340, at 62.

361. See Bowman, *supra* note 340 at 22. See R. BORK, *supra* note 340, at 372; R. POSNER, *supra* note 340, at 183; Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 28 n.47 (1984) (majority opinion); *id.* at 36 n.4 (O'Connor, J., concurring).

as a nut and bolt, a left shoe and right shoe, or a cup and saucer are used together, "from the buyer's point of view the two together might as well be a single product."³⁶² Such package sales are tantamount to the sale of a single item.³⁶³ Second, because the value of the package is determinative, it makes no difference whether the monopolist sets a profit-maximizing price for the monopolized bolts or reduces the price of the bolts and "shifts" the monopoly profit by increasing the price of tied nuts.³⁶⁴ Regardless of the derivation of profit from the tied product, the tying product, or the combination, the total amount that will be realized is the same.³⁶⁵ Third, the focus of attention is solely on the buyer and on the increased price and reduced supply of the combination imposed by the monopolist.³⁶⁶ Competing sellers in the tied market are of no concern; indeed the selection of examples such as a nut and bolt, cup and saucer, and left and right shoe largely eliminates the interests of competing sellers, since few buyers would seek to purchase a cup from Wedgwood and a saucer from Noritake.³⁶⁷

It is important to appreciate the scope of Bowman's fixed proportion rule and its tendency to immunize otherwise historically actionable cases of tying or patent misuse from judicial condemnation. The fixed

362. Bowman, *supra* note 340, at 21 ("Certainly the buyer of a fifteen dollar pair of shoes does not care when he is told that the left shoe costs ten dollars and the right one only five."). See Turner, *supra* note 211 (fixed proportion sale should be regarded as "prima facie" the sale of a single product); Posner, *supra* note 344, at 929; R. BORK, *supra* note 340, at 373. It has been suggested that the "single product" defense should also apply to package licenses and post-expiration royalties. See Note, *An Economic Analysis of Royalty Terms in Patent Licenses*, 67 MINN. L. REV. 1198, 1219 (1983); USM Corp. v. SPS Technologies, Inc., 694 F.2d 505, 511 (7th Cir. 1982) (Posner, J.), *cert. denied*, 462 U.S. 1107 (1983).

363. Posner considers that there is nothing in the traditional legal thinking about tie-ins that permits a distinction between cases such as a mimeograph machine and its paper, and a left and right glove. R. POSNER, *supra* note 340, at 181; see also R. BORK, *supra* note 340, at 379.

364. See also Pearson, *supra* note 211, at 646.

365. The "fixed sum argument" is criticized at length by Kaplow, *supra* note 340, at 517-19. He counters that the "basic mistake in [this] central thesis is that antitrust law should be indifferent to the exploitation of monopoly power because extant power is a fixed sum and thus will result in the same damage regardless of how it is deployed." *Id.* at 515-16.

366. See Bowman, *supra* note 340 at 23 n.11. The effect on "competition," which is defined as the amount of the tied product actually sold, is the only pertinent consideration. See *id.* at 23. Bowman's failure to consider a possible social interest in competitors' market access is noted by Turner, *supra* note 211, at 63 n.42 (arguing Bowman "apparently gives no recognition to the interest of competing sellers of the tied product").

367. The issue is not whether a purchaser would desire a cup without a saucer, a refrigerator carton without dry ice, or surgery without anaesthesia, but whether the market is such that a significant number of buyers would prefer to purchase the two from different suppliers. See *supra* notes 335-39 and accompanying text.

proportion rule would readily apply, for example, to the combination of three furnace switches in *Mercoïd I*,³⁶⁸ which were functionally interrelated but regularly purchased from competing manufacturers.³⁶⁹ As a result, the *Mercoïd* defendants would be immunized³⁷⁰ from liability under the rule. All patent licenses for components of combination patents would also be immunized from antitrust scrutiny, as would patented processes tied to the sale of supplies, such as those condemned in *B. B. Chemical*.³⁷¹

The increasing influence of Bowman's fixed proportion rule is manifest in recent Supreme Court tying decisions. While the Court was criticized for its failure to recognize the significance of fixed proportion sales in *Fortner I*,³⁷² the Court corrected itself in *Fortner II*,³⁷³ citing Bowman and noting that leverage would not be possible because credit and pre-fabricated housing were sold in fixed proportions. Similarly in *Jefferson Parish Hospital*,³⁷⁴ no antitrust violation was found because anaesthesia and surgery were sold in fixed proportions.

The fixed proportion immunity is absolute in its terms, and would apply equally to immunize those tying arrangements where there is "dominant" economic power in the tying product and those where there is no power.³⁷⁵ Nor is the immunity limited to nonstaple tied supplies or components, as in the limited extension of the patent monopoly permitted by Congress in response to *Mercoïd I*; the codified distinction is immaterial to the economic fixed-proportion justification.³⁷⁶

2. Tied Product Used as a Counting Device

In a second basic class of activity exemplifying his disagreement with the courts, Bowman considers that if different buyers use different quantities of a single tied product with one unit of the tying product, and if the tying product is worth more to intensive users, then the tied product

368. *Mercoïd Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661 (1944).

369. See Bowman, *supra* note 340, at 35. Turner similarly considers the functional relation of the combination, rather than the market demand relation, in categorizing the three switches as a single product. See Turner, *supra* note 211, at 68.

370. See Bowman, *supra* note 340, at 33, 34.

371. *B.B. Chem. Co. v. Ellis*, 314 U.S. 495 (1942).

372. *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495 (1969).

373. *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610, 617 (1977) (citing Bowman, *supra* note 340).

374. *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 28 n.47 (1984) (citing Dam, *supra* note 274, at 15-17; Turner, *supra* note 211, at 67-72).

375. See Turner, *supra* note 211, at 63 n.42.

376. See 35 U.S.C. § 271(d)(1)-(3) (1982). See *supra* notes 102-06 and accompanying text.

merely serves as a counter to measure the intensity of use of the tying product.³⁷⁷ In effect, the increased purchase of the tied product establishes a higher price for the intensive use of the tying product, and once again the arrangement is imposed in lieu of the proper differentiated pricing of the tying product without the tie-in.³⁷⁸ A patentee such as the owner of the stapling machine in the *Button-Fastener* case³⁷⁹ could use a mechanical meter to measure the use of the machine by intensive users, when staples are sold competitively, and charge the same royalty rate as by "counting" with tied staples. In either event, the total output of staples is exactly the same, and no "new" monopoly, i.e., one not already immanent in the patented machine, is created.³⁸⁰ In this case as in the fixed-proportions example, it is essential that the tied commodity be priced at a supracompetitive level when the tying product is sold com-

377. See Bowman, *supra* note 340, at 23. Posner considers that the tied product is typically a "trivial adjunct" to the tying product. R. POSNER, *supra* note 340, at 197. Burstein agrees that "counting" cases are characterized by a durable machine as the tying good and tied supplies that are used in the production process, e.g., computers and punch cards (*International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936)); applying machines and steel strapping (*Signode Steel Strapping Co. v. Federal Trade Comm'n*, 132 F.2d 48 (4th Cir. 1942)); can-closing machinery and cans (*United States v. American Can Co.*, 87 F. Supp. 18 (N.D. Cal. 1949)); automobiles and repair parts (*Pick Mfg. Co. v. General Motors Corp.*, 80 F.2d 641 (7th Cir. 1935), *aff'd per curiam*, 299 U.S. 3 (1936)); stapling machines and staples (*Rupp & Wittengeld Co. v. Elliot*, 131 F. 730 (6th Cir. 1904)); dispensers and toilet paper (*Morgan Envelope Co. v. Albany Perforated Wrapping Paper Co.*, 152 U.S. 425 (1894)); mimeograph machines and supplies including ink (*Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912)); riveting machines and rivets (*Judson L. Thomson Mfg. Co. v. Federal Trade Comm'n*, 150 F.2d 952 (1st Cir.), *cert. denied*, 326 U.S. 776 (1945)). See also Burstein, *supra* note 340, at 64; Kaplow, *supra* note 340, at 540-41.

378. See Bowman, *supra* note 340, at 24. Among economic critics, discussion of Bowman's price discrimination theory has largely supplanted leveraging, which is widely dismissed as a "discredited" hypothesis. See, e.g., R. BORK, *supra* note 340, at 366, 372; R. POSNER, *supra* note 340, at 172-74, 183; Note, *Tying Arrangements and the Computer Industry*, *supra* note 107, at 1055. On the use of tying arrangements to effect price discrimination, see generally, Note, *supra* note 141, at 100; Pearson, *supra* note 211, at 647; R. BORK, *supra* note 340, at 376-78 (price discrimination possible in both fixed or variable proportion ties, and equally beneficial in both); Stigler, *United States v. Loew's Inc.: A Note on Block-Booking*, 1963 SUP. CT. REV. 152 (illustrating price discrimination by block-booking). Posner, while agreeing that tying can be used as a method of price discrimination, considers that such discrimination "enables a monopolist to earn a higher profit." See R. POSNER, *supra* note 340, at 173.

379. *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896).

380. See Bowman, *supra* note 340, at 24. Profit maximization on only a single product, as in this example, "does not provide the only rational explanation of tying practices when variable proportions" of the tying and tied product are used. See *id.* For this reason, Bowman concludes that the tying arrangement in *Button-Fastener*, which involved only tied staples, was more clearly a counting device without leverage than that in *A.B. Dick*, where various supplies were tied to the patented mimeograph machine. See *id.* at 35.

petitively at cost;³⁸¹ the exclusion of competitors from the tied product market is irrelevant.³⁸²

Once again, it appears that the presence or absence of market power is immaterial, and it is evident that only the interest of the purchaser of the package of staples and stapling machines or of computers and punch cards need be considered. While "metering" ties permit profit maximization through price discrimination, they do not "extend" monopoly.³⁸³ As Bowman concedes,³⁸⁴ this argument essentially calls for a return to the era before *Motion Picture Patents*,³⁸⁵ because the economic thesis is indistinguishable from the justification for tying arrangements originally accepted in the *Button-Fastener* case³⁸⁶ and *A.B.*

381. See *id.* at 24.

382. See Turner, *supra* note 211, at 63 n.42. Turner in no way recognizes the interests of competing sellers of the tied product, suggesting their exclusion would be immaterial.

383. Some economists consider that price discrimination promotes efficiency. Compare Bowman, *supra* note 340, at 19 n.4, 24. Panel Discussion *The Value of Patents and Other Legally Protected Commercial Rights*, 53 ANTITRUST L.J. 535, 542, 550 (1984); R. BORK, *supra* note 340, at 397-98 (output, rather than efficiency, may be greater with price discrimination); Note, *supra* note 362, at 1221 n.139; Posner, *supra* note 344, at 926 *with id.* at 934-35 ("if price discrimination is not perfect, . . . it may lead to a smaller, rather than a larger output than single-price monopoly"). As Kaplow observes, promotion of efficiency "would be a benign interpretation only if it could be assumed that price discrimination were not undesirable. Of course, direct attempts at price discrimination are illegal under the Robinson-Patman Act." Kaplow, *supra* note 340, at 522. The possibility of illegal price discrimination under 15 U.S.C. § 13(a) (1982), is acknowledged but discounted in Bowman, *supra* note 340, at 23 n.11, 33.

384. See Bowman, *supra* note 340, at 24 n.16.

385. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917). The evil of tying in the patent context eluded Justice Holmes, who dissented in *Motion Picture Patents*. Since a patentee has the legal right to refuse to sell a patented invention, and he may demand an exorbitant price, tying is no more than an exercise of these legally-sanctioned prerogatives. *Id.* at 519. Justice Holmes' conclusion is based on the same assumptions as the current economic criticism: that a buyer will consider the value of the tied package only in relation to the total price, and that competitors' interests in the market for the tied item need not be considered. *Cf. id.* at 520.

386. *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896). The extent of Justice Lurton's learning on this subject has not been sufficiently admired. In his landmark *Button-Fastener* opinion for the Sixth Circuit, then Judge Lurton clearly grasped the basic argument that the value of the package to the buyer would determine acceptance of the tie, and that a reduced rate for the package would benefit the consumer:

The great consuming public would be benefited, rather than injured, for the monopoly could endure so long only as shoes were supplied at a less price than had prevailed before the invention. Now, if the patentees, by retaining to themselves the exclusive use of their invention, are able, legitimately and lawfully, to acquire a monopoly of the manufacture of shoes, and destroy the shoe market for those who before had shared it, why may they not, by a system of restricted licenses, permit others to use their devices on condition that only some minor part of the shoe, — the pegs, the tips, the thread, or the buttons, or the button fasteners, — shall be bought from them?

Id. at 295. Noting that the tied staples were "made the counters by which the royalty pro-

Dick.³⁸⁷ The insignificance of market power considerations in Bowman's analysis is further underscored by his inclusion of *United Shoe II*³⁸⁸ and *International Business Machines*³⁸⁹ in a discussion of possible counting cases,³⁹⁰ because each manufacturer occupied a dominant position in the market for the tying product.³⁹¹ Application of this economic standard alone would substantially eradicate Supreme Court precedent on the question of antitrust tying because the tying arrangement in *International Salt* evidently also could be immunized by being described as a counting device.³⁹²

3. Technological Interdependence and Goodwill

Bowman rejects any social justification of tying-in relatively inexpensive supplies, such as computer cards or replacement automobile parts, to the more complex and expensive tying products in which they are used.³⁹³ The justifying argument is often made that the goodwill of the seller will be affected if the technologically integrated product malfunctions due to a failure in the supplies,³⁹⁴ but this justification has seldom

portioned to the actual use of the machine" was determined, he denied any possibility of "extension" of monopoly:

So long as their invention controls the market for button-fastening appliances, and to the extent that their machines shall supersede other modes of clinching staples, just so long will they be enabled to control the market for staples. Their monopoly in an unpatented article will depend upon the merit of their patented device, and the extent to which other clinching devices are superseded by it.

Id. at 296.

387. *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912).

388. *United Shoe Mach. Corp. v. United States*, 258 U.S. 451 (1922).

389. *International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936).

390. See Bowman, *supra* note 340, at 24 and 35. But see *id.* at 36 (concluding that *United Shoe II* was a complementary products case and not a counting case).

391. See *supra* notes 219-23 and accompanying text; *Standard Oil Co. of Cal. v. United States*, 337 U.S. 293, 301-02 (1949).

392. *International Salt Co. v. United States*, 332 U.S. 392 (1947). Bowman does not apply his theory to *International Salt*, but other commentators have drawn this conclusion. See Bauer, *supra* note 351, at 294-95 (1980); M. HANDLER, H. BLAKE, R. PITOFSKY & H. GOLDSCHMID, CASES AND MATERIALS ON TRADE REGULATION 1144 (2d ed. 1983); Note, *The Presumption of Economic Power*, *supra* note 107, at 1141 n.11; cf. Turner, *supra* note 211, at 52-53 (positing that dominance in relevant markets need not be shown, but not expressly referring to *International Salt* as a counting case); Dam, *supra* note 274, at 15-16. While the courts have seldom adverted to the counter defense since its express rejection in *Motion Picture Patents*, Rep. Kastenmeier suggested qualified immunity of counter-type tying arrangements "unless such a practice—on balance—has a generally anticompetitive effect." 134 CONG. REC. H10,648-49 (daily ed. Oct. 20, 1988).

393. See Bowman, *supra* note 340, at 28.

394. See, e.g., *Federal Trade Comm'n v. Sinclair Refining Co.*, 261 U.S. 463, 475 (1923); *International Business Machs. Corp. v. United States*, 298 U.S. 131, 138-39 (1936); *Standard Oil Co. of Cal. v. United States*, 337 U.S. 293, 306 (1949); *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 514 n.9 (1969) (White, J., dissenting).

been accepted by the Supreme Court.³⁹⁵ Because Bowman considers that the buyer and seller have identical interests in performance, he concludes without extensive discussion that no social justification exists which would permit tie-ins to protect the reputation of the tying product seller.³⁹⁶ Alternatives such as product specifications should be sufficient to provide the same assurance.³⁹⁷ Of course, to the extent that single supply-type products such as computer cards or salt tablets are used as counters to measure use of the tying product, even the possibility of "leverage" is denied.

4. Economies of Joint Production or Sale

In cases such as the combined sale of shoelaces and shoes, or of the many parts of a single automobile, the "tying" arrangement has been justified as beneficial on the assumption that economies resulting from joint production and sale could be passed on to the consumer.³⁹⁸ From an economic standpoint, Bowman agrees that in such instances, there is no possibility of leverage. Where "the cost of producing and selling the combination is less than the cost of producing and selling the parts separately, and the price of the combination to the consumer is reduced, no tie-in can be said to exist. Cost justification excludes the use of a tie-in."³⁹⁹

The courts have approached the cost justification argument differently, generally avoiding an inquiry into efficiencies of production or

395. The Supreme Court has "uniformly rejected . . . 'goodwill' defenses, . . . finding that the use of contractual quality specifications are generally sufficient to protect quality without the use of a tying arrangement." *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 25 n.42 (1984). *But see Pick Mfg. Co. v. General Motors Corp.*, 80 F.2d 641 (7th Cir. 1935), *aff'd per curiam*, 299 U.S. 3 (1936); *Federal Trade Comm'n v. Sinclair Refining Co.*, 261 U.S. 463 (1923); *Dehydrating Process Co. v. A.O. Smith Corp.*, 292 F.2d 653 (1st Cir.), *cert. denied*, 368 U.S. 931 (1961).

396. *See Bowman, supra* note 340, at 28. Bork disagrees, considering this justification worthy of more respect than it has been accorded. *See R. BORK, supra* note 340, at 380; *see also R. POSNER, supra* note 340, at 175-76 (balance of costs "almost always" favors goodwill defense); *Slawson, supra* note 146, at 267-68.

397. *See Bowman, supra* note 340, at 28. Turner agrees that this is not a useful social function of a tie-in. *See Turner, supra* note 211, at 64.

398. *See R. BORK, supra* note 340, at 378-79; *cf. Pearson, supra* note 211, at 628 (asserting that economies of scale may exist to the benefit of the producer, but not mentioning the effect on consumers); *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 514 n.9 (1969) (White, J., dissenting).

399. *Bowman, supra* note 340, at 29; *see also Slawson, supra* note 146, at 277 (cost justification "completely eliminates anticompetitive effects"). *But see Note, supra* note 141, at 101 n.79 (justification would have to result not from lower price for the package, "but from economies deriving from refusal to sell the tying good *in addition to* the package. It is hard to imagine situations in which such economies would result.").

reduction in package price in favor of the market-demand based test requiring "two products" for an antitrust tying violation.⁴⁰⁰ This has allowed courts to avoid tricky economic issues that the cost reduction associated with tying would ordinarily entail. Thus, courts have generally not considered the economies of scale in production and distribution that an efficient tying monopolist would enjoy,⁴⁰¹ or the additional question whether such cost savings are passed along to the consumer through lower prices.⁴⁰² Efficiencies in production that would benefit the consumer were early rejected as a defense to a Sherman Act violation,⁴⁰³ and in the tying context the courts have avoided a defense that could be simply contrived by suitable pricing of the separate components.⁴⁰⁴

In the analysis frequently applied by the Court, the most basic question concerns the presence of distinct tying and tied product markets, without considering the relationship of the tied commodity price or the package price to the prevailing market price.⁴⁰⁵ However, it has been

400. See *supra* notes 298–300 and accompanying text. Bork would extend the "single product" justification to all tied sales of two products, without regard to economic benefit. See R. BORK, *supra* note 340, at 370–71.

401. See, e.g., R. BORK, *supra* note 340, at 101:

It is a common misconception that a monopolist's increased efficiency redounds only to the monopolist's benefit. . . . If marginal cost is lowered, the intersection with marginal revenue moves to the right, indicating a larger output and a lowered price. That benefits consumers as well as the monopolist.

402. See Bauer, *supra* note 351 ("Presumably, the buyer will appreciate this lower package price and would buy both products without the necessity of the seller's forcing them on it by a tie-in.").

403. The Court often has taken the opposite view of the asserted "benefit" of reduced price in the antitrust context. See, e.g., *United States v. Trans-Missouri Freight Ass'n*, 166 U.S. 290, 324 (1897) ("[I]t is not material that the price of an article may be lowered."); *Fashion Originators' Guild of America v. Federal Trade Comm'n*, 114 F.2d 80 (2d Cir. 1940), *aff'd*, 312 U.S. 457 (1941); *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962):

A third significant aspect of this merger is that it creates a large national chain which is integrated with a manufacturing operation. The retail outlets of integrated companies, by eliminating wholesalers and by increasing the volume of purchases from the manufacturing division of the enterprise, can market their own brands at prices below those of competing independent retailers.

Id. at 344.

404. Efficiency has been recognized as an important factor in justification of closely-related arrangements, such as requirements contracts, which have been distinguished from tying arrangements. See *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320 (1961); *cf.* *Continental T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 54–57 (1977) (vertical restraints produce efficiencies in the interbrand marketing of products, which may outweigh a loss in intrabrand efficiency).

405. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 18–24 (1984); *Former Enters. v. United States Steel Corp.*, 394 U.S. 495, 507 (1969); *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 613 (1953).

suggested by commentators that such a cost justification may have been present⁴⁰⁶ in cases in which only one product was found, such as *Times-Picayune*.⁴⁰⁷

5. Barriers to Entry in Two Markets

It has often been urged that a tie-in can be used to impose a barrier to entry, by requiring a new entrant to obtain the capital necessary for producing both the tying and tied products,⁴⁰⁸ or to undercut the tying manufacturer's price to secure market share.⁴⁰⁹ Without extensive analysis, Bowman denies the possibility of leverage through an economic barrier to entry in two markets.⁴¹⁰ Bowman rejects the possibility of an antitrust violation where the tied product is sold at market price, making it necessary for a competitor to undersell the market price for the tied product in order to offset the advantage of a monopolist in the tying product. His reasoning is consistent with that in the other examples because only the interest of the purchaser and the price of the package are relevant economic factors to be questioned.

406. See Turner, *supra* note 211, at 67 & n.49; Bauer, *supra* note 351, at 327; but see Bowman, *supra* note 340, at 29 n.28.

407. *Times-Picayune*, 345 U.S. 594.

408. See Note, *supra* note 141, at 93; C. KAYSEN & D. TURNER, ANTITRUST POLICY 157 (1959):

A tie-in always operates to raise the barriers to entry in the market of the tied good to the level of those in the market for the tying good: the seller who would supply the one, can do so only if he can also supply the other, since he must be able to displace the whole package which the tying seller offers.

409. In *International Salt*, the Court reasoned that since the tying seller "had at all times a priority on the business at equal prices" a competitor "would have to undercut appellant's price to have any hope of capturing the market, while appellant could hold that market by merely meeting competition." *International Salt Co. v. United States*, 332 U.S. 392, 397 (1947). For this reason, the fact that the tied salt was sold at market price was of no avail. See also Brown, *supra* note 14, at 221 (discussing the necessity of simultaneous entry in both markets, without discussing price undercutting); Kaplow, *supra* note 340, at 537-38 (discussing capital cost requirements and price undercutting); *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 513 (1969) (White, J., dissenting); *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 13 n.19 (1984).

410. See Bowman, *supra* note 340, at 33-34. See also Posner, *supra* note 344, at 929-30 (existing firms have the same annual cost of replacement as new entrants' costs); R. POSNER, *supra* note 340, at 176-77; R. BORK, *supra* note 340, at 374-75 (barriers to entry theory "currently one of the law's most potent empty concepts"). Pearson considers that it is "uncertain" whether absolute capital requirements are a barrier to entry, but assuming this to be the case, that a tying arrangement can only impose such a barrier where there are no reasonable substitutes for the tying product. Otherwise, "the only barrier will be the inability of the market to absorb another producer of the tied product at the efficient level of production." See Pearson, *supra* note 211, at 638.

Although it has been urged that price cuts in the tied product compensated by efficiencies in the *tying* product could be used to foreclose competitors who cannot meet the tied product price,⁴¹¹ presumably Bowman would regard any price cut in the tied product as incompatible with the theoretical possibility of leverage.⁴¹² Moreover, even if effective to exclude competitors from the market for the tied product, efficiencies in the tying product that provide a decisive advantage serve to benefit the consumer.⁴¹³ Bowman basically disagrees with the possibility of leverage suggested in *Fortner I*,⁴¹⁴ because any advantage that United States Steel might have enjoyed due to its size or prowess in the credit markets benefitted the purchaser by reducing the price of the package.⁴¹⁵

6. Product Complementarity in a Variable Proportion Context

According to Bowman, objectionable leverage can exist only when the tying and tied products are complementary⁴¹⁶ and are used in variable proportions.⁴¹⁷ Variable proportion use is an essential requirement of a leverage strategy because a basic tenet of economics suggests that a reduction in the price of the tying product will increase sales, and an increase in the price of the tied product will reduce sales. Moreover, a separate profit-maximizing pricing strategy is required for the tying and tied products,⁴¹⁸ and the tie-in is "only useful to the seller if the

411. See Note, *supra* note 141, at 92-93.

412. See *infra* note 419 and accompanying text.

413. See *supra* notes 398-99 and accompanying text; Pearson, *supra* note 211, at 646.

414. *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495 (1969).

415. Arguably, the increased price of the tied prefabricated housing in *Fortner I* might have been sufficient to offset the loss from the unique credit terms, although the Court assumed that this was not the case. See *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610, 618 (1977). However, according to the economic argument, because there could have been no potential power to raise the price of the tying product, the increased price of the tied product does not permit an inference of "extension" of a non-monopoly.

416. Two products complement each other when an increase in the price of one will not only result in fewer sales of that product but also in fewer sales of the other. See Bowman, *supra* note 340, at 25.

417. Bowman's hypothetical example of the strategy of separately fixing profit-maximizing prices of the tying and tied product is a model of relative clarity in the literature. See Bowman, *supra* note 340, at 25 n.18. It has generally been assumed that variable proportion tying arrangements would be profitable where the tying product is an expensive durable good, and a single tied product is consumed in the use of the tying product. See *supra* note 377.

418. See also Note, *supra* note 143, at 1313 ("special economies in the linking of the two products" are essential); Posner, *supra* note 344, at 935:

The price-discriminating monopolist breaks up his demand curve into a series of separate demand curves for different groups of customers. Within each of these submarkets he sells the output that equates his marginal revenue to his marginal cost.

maximizing price of the tied product is above its competitive price."⁴¹⁹ The essential question in distinguishing variable proportion leverage from innocuous "counting" is "whether a monopoly over the tied product, or part of it, add[s] any profit over what could be achieved by manipulating the price of the tying product in the absence of [monopoly] control over the tied product."⁴²⁰ If increasing the price of the tying product reduces the demand for a functionally related tied product used in variable proportions, it is possible to create the equivalent of another, or new, monopoly in the tied product.

The creation of a "new monopoly" has four essential elements: (1) "market power," i.e., a substantial monopoly over the tying product;⁴²¹ (2) reduction of the supernormal profit-maximizing price of the tying product;⁴²² and (3) a supernormal price for the tied product;⁴²³ (4) that is sufficient to more than compensate for the reduction in price of the tying product.⁴²⁴ If these conditions are satisfied, the tie creates "the equivalent of another monopoly" over the tied product, or "the equivalent of a monopoly by a single seller" over both.⁴²⁵

A significant difficulty of this economic analysis lies in distinguishing practices that merely maximize profit from those that unlawfully extend monopoly power.⁴²⁶ This determination requires investigation of the potential for a supernormal profit-maximizing price of the tying product and the relation of the prices of the tying and tied products.⁴²⁷ Due to

419. Bowman, *supra* note 340, at 26 n.19.

420. *Id.* at 25 n.18.

421. *See id.* at 31. Market power is discussed more fully *infra* notes 443-524 and accompanying text.

422. *See id.* at 25, 34. Such a discount is essential. *See Note, supra* note 143, at 1305 n.1; *Note, supra* note 141, at 95; *cf. Burstein, supra* note 340, at 70 (price of tying durables is typically discounted to reduce risk of long-term lease).

423. Bowman, *supra* note 340, at 25, 34.

424. *Id.*

425. *Id.* at 25. *See generally, Dam, supra* note 274, at 25-26; *Note, supra* note 143, at 1315. Turner agrees that "economic power in the sale or lease of the tying product is a near certainty when the seller both gets a profit on the tying product and sells the tied product at a noncompetitive price." Turner, *supra* note 211, at 63. Because Northern Pacific sold its land at a profit, he concludes that market power was present. *See id.* at 66. However, Turner distinguishes cases in which the tying product is "given away," including *Federal Trade Comm'n v. Sinclair Refining Co.*, 261 U.S. 463 (1923) and possibly *International Salt Co. v. United States*, 332 U.S. 392 (1947). *See Turner, supra* note 211, at 65-66. In his view, only the ability to charge a range of profitable tying product prices proves market power in the tying product. *See id.* Posner considers that "tying can rightly be described as a method of obtaining a second monopoly only when the users of the tying product are also the principal customers for the tied product." R. POSNER, *supra* note 340, at 173.

426. *See Kaplow, supra* note 340, at 519.

427. This indeed may be impossible. The difficulties of determining the relevant economic data are discussed *infra* notes 440-42 and accompanying text.

this uncertainty, it appears impossible to determine whether most anti-trust tying cases have involved profit maximization by benign counting devices, or unlawful "extension" of the monopoly by economic "leverage" through the tying arrangements.⁴²⁸ The Supreme Court has typically failed to require any consideration whatsoever in tying cases, of such basic economic factors as the price of the tied product, or the potential for supernormal profit in the tying product. For this reason Bowman expresses some doubt whether *United Shoe*,⁴²⁹ *A.B. Dick*⁴³⁰ and *Button-Fastener*⁴³¹ can be explained as "counting" cases, and considers a counting explanation of *Motion Picture Patents* "even less convincing."⁴³²

The elusive but critical distinction between practices that merely maximize profit and those that unlawfully extend monopoly power has led to confusion among critics of the leverage doctrine. Bowman mischaracterizes *Carbice* as a fixed-proportion tie,⁴³³ although the tying product was a refrigerator shipping carton, which evidently was used repeatedly

428. See Bowman, *supra* note 340, at 35 ("Factors given no attention in the opinions and illuminated only by ambiguous evidence must be considered before determining whether such cases as *Button-Fastener*, *A.B. Dick*, *Motion Picture Patents* or *Shoe Machinery* are 'counting' cases or 'complementarity' cases."). Kaplow rejects this critical distinction as "both indeterminate and irrelevant." Kaplow, *supra* note 340, at 524 n.34. His extensive critique maintains that the distinction accepts price discrimination as neutral, although it is illegal; that the distinction is economically arbitrary in failing to distinguish the net welfare effects of each practice; that it fails to consider the effects of long-run phenomena, and incorrectly employs an essentially static economic model (see *id.* at 523-531); that it overlooks the "free rider" problem in overestimating the self-correcting processes of the marketplace; and that it tends to assume the existence of perfect markets, eliminating considerations of risk, particularly in capital markets. See *id.* at 522-39.

429. *United States v. United Shoe Mach. Co.*, 247 U.S. 32 (1918); see Bowman, *supra* note 340, at 27.

430. *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912); see Bowman, *supra* note 340, at 35.

431. *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896); see Bowman, *supra* note 340, at 27 n.21, 35.

432. Bowman, *supra* note 340, at 35 ("Although the record does not show that separate prices were set on the projection machine and the films to produce a return larger than could be received from either, the case is consistent with this rationale, and the alternatives offered are unsatisfactory. Similarly, the complicated *Shoe Machinery* case, while not susceptible of an easy explanation, in certain aspects fits the analysis of complementarity."). Kaplow considers that the leveraging hypothesis provides an alternative explanation, particularly where a sufficient quantity of the tied good is produced by the tying seller, and observes that this has often been the case in Supreme Court tying cases, e.g., *United States v. Loew's, Inc.*, 371 U.S. 38 (1962); *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958); *International Salt Co. v. United States*, 332 U.S. 392 (1947); *International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936); and *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917). See Kaplow, *supra* note 340, at 542 n.110.

433. See Bowman, *supra* note 340 at 35. Bowman analyzes each of *Carbice Corp. v. American Patents Dev. Corp.*, 283 U.S. 27 (1931); *Mercoid Corp. v. Mid-Continent Invest. Co.*, 320 U.S. 661 (1944); and *B.B. Chem. Co. v. Ellis*, 314 U.S. 495 (1942) as process monopolies, though the only process claims at issue were in *B.B. Chemical*.

with the tied product, dry ice, to produce revenue varying with use.⁴³⁴ More recently, the tied computer hardware in *Digidyne*⁴³⁵ similarly has been misconceived as a device for counting use of the tying copyrighted software.⁴³⁶ Generally in counting cases, the argument has been that a tied supply is consumed in variable proportions when used with a durable tying good, in order to effect price discrimination.⁴³⁷ However, in *Digidyne*, the tied central processing unit hardware was evidently purchased and used in fixed proportions to the tying operating system software⁴³⁸ and in any event the hardware was not consumed in using the software. Bowman's counting case also appears to have been taken as an example of leverage extending monopoly, as a result of the indistinct boundary in economic terms between permitted and proscribed activity.⁴³⁹ Under Bowman's economic model, the crucial distinction between innocuous counting and extension of monopoly depends on examination of concepts seldom considered by courts, and perhaps incapable of proof in litigation, if they can be quantitatively determined at all.

Courts have the duty to decide cases before them and have recognized the importance of standards of economic proof that are capable of administration and ascertainment by judges,⁴⁴⁰ and critics of the antitrust presumption have conceded that pricing concepts central to the Chicago school theory of tying are difficult if not impossible to apply in practice.⁴⁴¹ Even efforts to establish proxies for market power, such as the

434. See *Carbice*, 283 U.S. 27.

435. *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336 (9th Cir. 1984), cert. denied, 473 U.S. 908 (1985).

436. See Note, *The Presumption of Economic Power*, supra note 107, at 1156.

437. See supra note 377.

438. Competing manufacturers of central processing unit hardware sought to obtain a license for use of the operating system software, but Data General refused, precipitating the antitrust tying action. See *Digidyne*, 734 F.2d at 1338. Sales of the operating system software were thus primarily to original equipment manufacturers, rather than final users of the equipment. See *id.* at 1342.

439. See Note, supra note 143, at 1314; but cf. *id.* at 1315.

440. See *Standard Oil Co. of Cal. v. United States*, 337 U.S. 293, 309-10, n.13 (1949) (economic standard of proof "if not virtually impossible to meet, at least most ill-suited for ascertainment by courts" should be avoided).

441. See, e.g., Krattenmaker, Lande & Salop, supra note 340, at 247 n.37 (marginal cost "controversial to define and difficult to measure"); Note, supra note 141, at 95-96 (determination of monopoly profits presents "severe problems of factual inquiry"); R. POSNER, supra note 340, at 180 ("The limitations of economic science and of the judicial process are such as to make one doubt that the antitrust laws are capable of distinguishing systematic price discrimination not only from sporadic discrimination but from cost-justified price differences."); *id.* at 188-92 (exemplary discussion of marginal cost, where "measurement problems abound"); Note, supra note 143, at 1316 ("no demonstrated instance of such a tying arrangement has ever been recorded. It may be entirely the creature of theory.")

availability of acceptable substitutes, are "enormously time-consuming and expensive as well as delusive."⁴⁴²

From this discussion of Bowman's examples, it appears that the most fundamental criticism of the antitrust tying doctrine is that the per se rule against tying fails to satisfy certain formal requirements posed by economic theory for "extension" of monopoly. Measured by the standard of price theory, it is difficult to ascertain what, if any, portions of the case law condemning ties under patent or antitrust principles would survive economic dissection. At least one of two fatal deficiencies appears in most leading cases: either the availability of substitutes for the tying product or the absence of a supracompetitive price for the tied product. These two deficiencies are discussed in greater detail under the next two headings.

7. Substitutes and Market Power

An essential element of market power leverage in the economic sense is the possibility of obtaining a supernormal price for the tying product.⁴⁴³ This market power cannot exist if other sellers are able to provide the tying product at the same price. The logic of this proposition was acknowledged by the Supreme Court in *Northern Pacific*, where the Court illustrated the importance of substitutes by reference to the exam-

442. Brown, *supra* note 14, at 214. He criticizes the rule of reason standard proposed by critics of the presumption as signifying "endless inquiry into cross elasticities, supply substitutability, scale economies, transaction costs, and learning curves." *Id.* at 213 n.17 (quoting Sullivan, *The Viability of the Current Law on Horizontal Restraints*, 75 CALIF. L. REV. 835, 847 (1987)). See also Turner, *supra* note 211, at 59 (difference between per se rule and requirement of establishing substantial economic power is "enormous"); Dam, *supra* note 274, at 34. Defenders of the presumption agree with Justice Black's classic statement that the per se rule "avoids the necessity for an incredibly complicated and prolonged economic investigation into the entire history of the industry involved, as well as related industries, in an effort to determine at large whether a particular restraint has been unreasonable—an inquiry so often wholly fruitless when undertaken." *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5 (1958).

443. The essential attribute of market power is alternatively described as the potential to impose a supernormal profit-maximizing price see Bowman, *supra* note 340, at 25; "monopoly profits" see Note, *supra* note 141, at 95; supernormal profit potential, or price exceeding average total cost, see Note, *supra* note 143, at 1307, 1311-12. See also, Pearson, *supra* note 211, at 647, 651; Note, *The Presumption of Economic Power*, *supra* note 107, at 1150; Turner, *supra* note 211, at 61. The ability to charge a supracompetitive price for the tying product is widely regarded as an essential element of leverage in a tying arrangement. See, e.g., Note, *supra* note 143, at 1309, 1313; but see Slawson, *supra* note 146, at 264 (no requirement that the tying product seller possess any amount of market power for tie-ins to reduce competition).

ple of flour and sugar.⁴⁴⁴ It is clear that in an economic sense, the essential element of market power is negated if there are acceptable substitutes for the tying product available from others at comparable prices.⁴⁴⁵

However, in the landmark Sherman Act case establishing the antitrust per se rule, International Salt Company offered uncontroverted evidence to no avail that substitute salt machines were available.⁴⁴⁶ The significance of substitutes can hardly have been lost on the Supreme Court that had recently considered the tying misuse of a patented salt-dispensing machine in *Morton Salt*.⁴⁴⁷ Economic commentators agree that there could have been no leverage in the tying arrangement due to the ready availability of substitute salting machinery.⁴⁴⁸ For this reason, even if the tied salt sales did not represent mere counter devices for imposing a differential royalty, the economic critics would deny the theoretical possibility of leverage in view of the absence of a supra-competitive price potential for the tying machines. Moreover, the tying arrangement could not have presented any significant prospect for acquisition of economic power in the enormous market for salt, a basic commodity.⁴⁴⁹ Similarly in *Northern Pacific*, it was considered of no moment that substitute properties were available for the tying land, which was sold at market price.⁴⁵⁰

Although the Court has not accepted the necessity of supernormal price potential in the tying product as an essential element of an antitrust tying violation,⁴⁵¹ it is clearly cognizant of the economic corollary that the availability of substitutes reduces market power in the tying good. Acceptance of the economic argument would demolish pillars such as *International Salt* and *Northern Pacific* upon which "nondifferentiated

444. See *supra* note 336 and accompanying text.

445. See *infra* notes 580-87 and accompanying text.

446. *International Salt Co. v. United States*, 332 U.S. 392 (1947).

447. *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942); see Dam, *supra* note 274, at 19-20.

448. See Note, *supra* note 141, at 87-88; Turner, *supra* note 211, at 52-53; R. BORK, *supra* note 340, at 368.

449. R. POSNER, *supra* note 340, at 172-73; R. BORK, *supra* note 340, at 366-67; cf. Pearson, *supra* note 211, at 637 (no possibility of "monopolization" since other producers of salt could reach the market).

450. See *Northern Pac. Ry. v. United States*, 356 U.S. at 16 (Harlan, J., dissenting) (evidence should have been required of "the relative strength of appellants' landholdings vis-à-vis that of others in the appropriate market").

451. Professor Dam's spirited argument that there was no possibility of supernormal price potential in the tying credit market in *Fortner I* appears to have convinced the Supreme Court to retreat from this suggestion in *Fortner II*, despite factual findings to the contrary by both lower courts. See Dam, *supra* note 274, at 17, 26 (quoted in *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610, 620 n.13 (1977)); cf. 429 U.S. at 616 (summarizing district court findings on market power).

product" antitrust tying doctrine stands.⁴⁵²

8. *Competitive Price for the Tied Product*

Equally inconsistent with or fatal to the presumption of market power in antitrust tying precedent are situations in which the tied product is sold at a price equal to or below its market price. Turning again to *International Salt* and *Northern Pacific*, in each case the tying contracts contained provisions guaranteeing a market price for the tied article.⁴⁵³ The possibility of leverage is negated in economic theory by a competitive price for the tied product, because for Bowman the ability to charge a higher than competitive price for the tied product is an essential requirement even when variable proportion use is present.⁴⁵⁴ Measured by the price theory standard proposed by Bowman, the tying arrangements imposed by *East Jefferson Hospital*,⁴⁵⁵ *Northern Pacific*,⁴⁵⁶ and *International Salt*⁴⁵⁷ are "irrational"⁴⁵⁸ and defy explanation.⁴⁵⁹ If a court

452. Kramer considers that this is the implicit result of *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984), and that the tying doctrine has now reverted to the status of *International Salt Co. v. United States*, 332 U.S. 392 (1947). See Kramer, *supra* note 153, at 1062, 1067 (*Jefferson Parish* silently overruled *Northern Pac. Ry.*).

453. See *International Salt*, 332 U.S. at 394 n.5 and 395 (over 90% of the contracts guaranteed salt at competitive rates for the Lixator machines); *Northern Pacific*, 356 U.S. at 13, 17. Such provisions are not extraordinary in tying cases. See *Signode Steel Strapping Co. v. Federal Trade Comm'n*, 132 F.2d 48 (4th Cir. 1942); *United States v. American Can Co.*, 87 F. Supp. 18 (N.D. Cal. 1949).

454. See *supra* note 419 and accompanying text.

455. Any economic benefit from increased anaesthesiological fees would have accrued to the anaesthesiologists, and not to the tying agent, the hospital. See *Jefferson Parish*, 466 U.S. at 28 n.47. Kaplow urges that it is inappropriate to analyze the behavior of a hospital using the profit-maximizing model "rather than one that considers more directly the welfare of various groups of doctors that might be powerful in influencing the hospital's decision-making process." Kaplow, *supra* note 340, at 548 n.129.

456. *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958); see *infra* notes 466-71 and accompanying text.

457. *International Salt Co. v. United States*, 332 U.S. 392 (1947). See Peterman, *The International Salt Case*, 22 J.L. & ECON. 351, 352-59 (1979). It has been suggested that the tying arrangement was imposed by *International Salt* as a metering device for the use of its machines, imposed to effect price discrimination by counting. See sources cited *supra* note 392. This is an impossible rationale under Bowman's theory, since a market price for salt was guaranteed by the Lixator contracts. See *supra* note 186 and accompanying text.

458. See Posner, *supra* note 344, at 940; R. POSNER, *supra* note 340, at 182. See also, Pearson, *supra* note 211, at 646 (reason is not clear why General Motors imposed the tie-in in *United States v. General Motors Corp.*, 121 F.2d 376 (7th Cir.), *cert. denied*, 314 U.S. 618 (1941)).

459. The only Supreme Court reference to the possibility of a supracompetitive price for the tying product appears to be Justice Stones' analysis of IBM's profits for tied punch cards in *International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936). There the government was charged a substantial premium for use of the machines without the tied cards, presumably to offset profits lost from sales of the punch cards. See *supra* note 170.

should be able to "safely assume that sellers will tie only when the practice is profitable,"⁴⁶⁰ particularly when the practice exposes them to treble damage liability under antitrust law, there should be grave doubt as to the resolving power of the economic lens through which these cases are viewed.⁴⁶¹ The Chicago economists have been strangely silent in explaining the tying provisions' existence, which they agree could provide no economic benefit.⁴⁶² A serious question exists whether the economic critique provides a sound basis for wholesale demolition of the established antitrust edifice, when as Posner admits, "to this day very few of Director's ideas have been subjected to systemic empirical examination."⁴⁶³ Kaplow's most provocative suggestion is that in imposing tie-ins, manufacturers may not have been concerned with profit maximization at all, but with competing goals ignored by price theory, such as sales and growth maximization.⁴⁶⁴ This theory "has striking implications for much of antitrust" since in important tying cases "virtually all of the practices connected with the leverage issue operate to increase the sales or growth of the firm."⁴⁶⁵

Consider this theory's application to *Northern Pacific*. The relevant tying arrangement required purchasers and lessees of land to ship the products produced on the land with the railroad at the prevailing market rate.⁴⁶⁶ The utility of such an arrangement, which after all failed to provide a supernormal price in either the tying or tied product, has defied all but far-fetched explanations.⁴⁶⁷ Whether or not it can be justified under

460. See Note, *supra* note 141, at 95 n.46.

461. See Note, *The Presumption of Economic Power*, *supra* note 107, at 1141 n.11; Turner, *supra* note 211, at 61; Dam, *supra* note 274, at 22; Kaplow, *supra* note 340, at 539 ("all the regularly debated theories have rather weak claims to explaining observed behavior").

462. Critics of the Chicago school have not had similar difficulty in explaining business advantages from the tying arrangements. See sources cited *supra* note 351.

463. Posner, *supra* note 344, at 931 n.13.

464. Kaplow, *supra* note 340, at 550-52. Posner agrees that this possibility exists. See R. POSNER, *supra* note 340, at 205 (monopolist might decide "deliberately or through ignorance, to exclude competition at the price of forgoing all or most of its monopoly profits").

465. Kaplow, *supra* note 340, at 551. Kaplow considers that in a substantial majority of Supreme Court tying cases, where the seller was producing a sufficient quantity of the tied good, "the leverage hypothesis is a possible alternative explanation." *Id.* at 542 n.110 (e.g., *United States v. Loew's, Inc.*, 371 U.S. 38 (1962); *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958); *International Salt Co. v. United States*, 332 U.S. 392 (1947); *International Business Machs. Corp. v. United States*, 298 U.S. 131 (1936); and *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917)).

466. See *Northern Pac. Ry. v. United States*, 356 U.S. 1 (1958).

467. Kaplow considers that the most plausible explanation of the tying arrangement in *Northern Pacific* may have been evasion of price regulation, as suggested by Bowman, i.e., increasing the price of the land to evade the limitation by regulated shipping rates. Kaplow, *supra* note 340, at 522 n.26; cf. Bowman, *id.* at 22. A less likely explanation is offered by Bork, who urges that the tying arrangement was imposed as part of a package to attract

the tenets of the Chicago school, the practice appears eminently reasonable and advantageous. Assuming that the railroad had high fixed costs in equipment, maintenance of 6,888 miles of roadbed,⁴⁶⁸ and labor costs imposed by featherbedding contracts, and that it was prevented by rate regulation from profiting by raising freight prices to captive producers near its advantageously located track, any device which increased utilization of the existing capacity would improve profits. A supernormal price in the tied product is immaterial. The tying contract, imposed on buyers who were largely indifferent to choice of shippers at the same rate,⁴⁶⁹ imposed virtually no "cost" in terms of foregone choice.⁴⁷⁰ In all probability it was highly effective in increasing utilization of capacity among a group of shippers relatively sparsely counselled by antitrust lawyers or market economists able to appreciate its futility.⁴⁷¹

B. The Market Power of Patents

In addition to Bowman's critique of the improper application of leverage in antitrust tying cases, a second criticism of the presumption of market power is based on the theory that most patents do not confer monopoly power.⁴⁷² This notion has been advanced by courts,⁴⁷³ the

freight customers by lowering the price of land. R. BORK, *supra* note 341, at 376. The Supreme Court considered that the land was sold at fair market value, and the evidence supports this conclusion. See *Northern Pacific*, 356 U.S. at 8; Cummings & Ruhter, *The Northern Pacific Case*, 22 J.L. & ECON. 329, 338 (1979). Cummings and Ruhter examine and reject a number of hypotheses: leverage, evasion of price controls, metering, monopolistic pricing of related inputs and risk sharing. See *id.* at 336-41. Their explanation is also wobbly: that the tie was imposed to obtain information on competitors' pricing. See *id.* at 341-44.

468. See Cummings & Ruhter, *supra* note 467, at 341 n.49.

469. See 356 U.S. at 12.

470. Cf. Kaplow, *supra* note 340, at 526-27.

471. I am indebted to the economic critics for the technique of assuming the facts necessary to lead to my conclusion.

472. See, e.g., Panel Discussion, *supra* note 383. ("vast majority of all patents confer very little monopoly power"); Note, *The Presumption of Economic Power*, *supra* note 107, at 1150; Turner, *supra* note 211, at 53, 57 ("distinctiveness" may confer "no economic power at all"); Note, *supra* note 143, at 1306; Lavey, *supra* note 146, at 437; Pearson, *supra* note 211, at 644 ("In a real sense, desirability or uniqueness is present whenever the tying product is copyrighted, patented or sold under a brand name. . . . This kind of desirability or uniqueness confers very little market power, or none at all."); Note, *supra* note 362, at 1198 n.5; R. POSNER, *supra* note 340, at 172 n.3.

473. See, e.g., *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 37 n.7 (1984) (O'Connor, J., concurring); *A.I. Root Co. v. Computer/Dynamics, Inc.*, 806 F.2d 673, 676 (6th Cir. 1986); *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 511 (7th Cir. 1982), cert. denied, 462 U.S. 1107 (1983). The suggestion is hardly new, having been freely conceded by Justice Black in *Northern Pac. Ry. v. United States*, 356 U.S. 1, 10 n.8 (1958); see *supra* note 218 and accompanying text.

Department of Justice⁴⁷⁴ and legislative opponents of the antitrust presumption.⁴⁷⁵

The factual conclusion that "most" patents do not confer market power appears to be anecdotal, rather than empirical.⁴⁷⁶ Without extensive market⁴⁷⁷ and legal analysis,⁴⁷⁸ it is difficult to conceive of a method for determining whether a given patent's claims confer economic power. The conclusion is necessarily based on unstated dispositive assumptions about the scope of the claims of a "typical" patent,⁴⁷⁹ the availability of substitutes,⁴⁸⁰ the degree of market power required,⁴⁸¹ and the degree of similarity required of a substitute.⁴⁸²

Certainly in the context of patent misuse defenses, most litigated patents must be presumed to confer sufficient economic market power, defined as the ability to raise prices above the price of competing substitutes, in order to justify the substantial costs of defending a patent

474. Defeated in Congress and the Supreme Court on the argument that tying arrangements are innocuous if not frequently procompetitive, the Antitrust Division propounded guidelines announcing that "[t]ying arrangements generally do not have a significant anticompetitive potential" in the absence of "a degree of market power in the tying product that approaches monopoly proportions." Department of Justice, 1985 Vertical Restraint Guidelines, reprinted in 5 Trade Reg. Rep. (C.C.H.) ¶ 50,473, at 56,185 (April 15, 1985) [hereinafter *DOJ Vertical Guidelines*].

475. See, e.g., S. REP. NO. 492, 100th Cong., 2d Sess. 2 (1988) (accompanying S. 438, 100th Cong., 2d Sess. (1988)); 134 CONG. REC. S14,436 (daily ed. Oct. 4, 1988) (remarks of Sen. Leahy) ("S. 438 clarifies that although patents and copyrights constitute legally enforceable property rights, they do not necessarily constitute economic monopolies.").

476. Professor Scherer's often-cited conclusion appears to be based on profitability of patent owners. See Panel Discussion, *supra* note 472, at 547 (remarks of F.M. Scherer); but cf. Caves, Crookell & Killing, *The Imperfect Market for Technology Licenses*, 45 OXFORD BULL. ECON. & STATISTICS 249 (1983).

477. See *infra* notes 580-87 and accompanying text.

478. See *infra* notes 564-615 and accompanying text for a discussion of the legal, as opposed to economic, requirements for substitutes.

479. See, e.g., Lavey, *supra* note 146, at 437-38 (patented product is "unique in the sense that its exact technical characteristics differ from those of other products").

480. See *id.* at 438; Note, *The Presumption of Economic Power*, *supra* note 107, at 1152 n.78 (in usual case, adequate substitutes exist).

481. Judge Learned Hand defended the per se rule on the basis that a lack of market power does not prevent the harm which antitrust law seeks to prevent, in *Fashion Originators' Guild of Am. v. Federal Trade Comm'n*, 114 F.2d 80 (2d Cir. 1940), *aff'd*, 312 U.S. 457 (1941). With respect to a copyright or design patent "monopoly" on dress patterns, he concluded: "It is true that the sanction of that monopoly may be very weak; it depends upon the design's attractiveness above other designs, often not a very important margin of advantage. But the same is true of nearly all monopolies, for there are substitutes for most goods." *Id.* at 85. But see *DOJ Vertical Guidelines*, *supra* note 474, at 56,185.

482. See Note, *supra* note 141, at 94 (significant differentiation exists whenever seller is able to convince "some buyers that there is no exact substitute for his product" whether through patents, trademarks, brand names, copyrights, advertising, secret production techniques, or other variations which cannot be freely produced). See generally *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956).

infringement suit and the risk of treble damages for willful infringement.⁴⁸³ If not, the rational infringer would simply calculate the cost of infringing production, including the risk of litigation and defense expenses, and shift to an available substitute.⁴⁸⁴

The presumption of market power from the existence of a patent⁴⁸⁵ does not rest upon or represent a factual determination that all or most patents confer actual market power. It is a burden-shifting device,⁴⁸⁶ fashioned in the interests of avoiding extensive requirements of economic proof.⁴⁸⁷ At least when an antitrust counterclaim is raised in a patent infringement action, the presumption states nothing more than the judicial determination that it is reasonably probable that the patent claims protect commercially useful subject matter that is sufficiently distinctive or unique to persuade others to pay a considerable risk premium above the cost of any substitutes on the market, by facing an infringement suit rather than using an available alternative.

For this reason, the fact that some, or even most, issued patents may not confer such economic power is not determinative of the desirability of the presumption.⁴⁸⁸ The real question is not the empirical, statistical determination whether "most" patents provide "market power," but

483. Professor Scherer may concede as much. See Panel Discussion, *supra* note 472, at 547.

484. Different assumptions may apply in the antitrust context. The availability of a tying antitrust defense to void contractual obligations, and the prospect of treble damages for a successful antitrust plaintiff, may encourage the tying defense where patents play a minor role, if any, in "forcing" acceptance of the tie. Dam has persuasively argued that the tying arrangement in *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495 (1969), was merely a tactical device in an underlying dispute over the quality of tied prefabricated housing, employed to attack the contract once it no longer appeared advantageous to the experienced buyer, who had bargained strenuously for the tie. "This dispute was over the quality of goods. . . . The private action was in *Fortner* simply what it has become with increasing frequency, an ace in the hand of a distributor in commercial disagreements with his manufacturer." Dam, *supra* note 274, at 39. It is by no means apparent that patent and antitrust law should be "harmonized," in view of such conflicts in litigants' interests. Cf. Note, *The Presumption of Economic Power*, *supra* note 107, at 1151.

485. The present argument does not address the presumption from a copyright, which may be governed by significantly different considerations. See *supra* notes 108, 206, 208; *infra* note 595.

486. See Slawson, *supra* note 146, at 275-76 (Supreme Court has "never refused to entertain a plausible affirmative defense to a tie-in"); Brown, *supra* note 14, at 218; National Collegiate Athletic Ass'n v. Board of Regents, 468 U.S. 85, 104 n.26 (1984) (suggesting that procompetitive justifications should be considered); but cf. Note, *The Presumption of Economic Power*, *supra* note 107, at 1144 n.30 (presumption is irrebuttable).

487. See *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5 (1958).

488. Turner considers that the advantages of a per se rule are "obvious" and that there is "an enormous difference between a per se test and a test requiring proof of substantial economic power." Turner, *supra* note 211, at 59.

instead a social judgment on the probability of harm:⁴⁸⁹ whether tying arrangements have no redeeming virtue, serving "hardly any purpose beyond the suppression of competition";⁴⁹⁰ are generally "entirely innocuous";⁴⁹¹ or are frequently "procompetitive."⁴⁹²

C. *Conflicting Models of Market Power*

As the preceding synopsis of the economic critique makes clear, the essential concepts of "market power" and "leverage" have significantly different meanings for courts and economists.⁴⁹³ While economists have argued that in theory there is no significant qualitative difference, for antitrust purposes, between "market power" and "monopoly power,"⁴⁹⁴ the courts have distinguished the market power required for monopolization violating Section 2 of the Sherman Act,⁴⁹⁵ the quantum sufficient to prevent mergers under Section 7 of the Clayton Act,⁴⁹⁶ and that neces-

489. In Turner's view (at least in 1958), a per se rule is justified if it protects a legitimate interest and the restrictive practice condemned serves no other legitimate interest, if the interests can be served equally well or nearly as well by less restrictive devices, or if the contribution to legitimate interests, though sacrificed by a per se rule, is comparatively small. See Turner, *supra* note 211, at 59.

490. Standard Oil Co. of Cal. v. United States, 337 U.S. 293, 305-06 (1949); accord Northern Pac. Ry. v. United States, 356 U.S. 1, 6 (1958); Panel Discussion, *supra* note 472, at 542; Slawson, *supra* note 146, at 263-70; and Bauer, *supra* note 351, at 323.

491. Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 41 (O'Connor, J., concurring).

492. See R. BORK, *supra* note 340, at 372; Note, *The Presumption of Economic Power*, *supra* note 107, at 1155. In his dissent in *Fortner I*, Justice White accepted the economic argument that tying arrangements may at times be beneficial to the economy, when they facilitate new entry, foster clandestine price cutting, protect goodwill, and reduce costs through economies of joint production and distribution. See *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 514 n.9 (1969); see also *Digidyne Corp. v. Data General Corp.*, 473 U.S. 908 (1985) (White, J., dissenting from denial of *certiorari*). See also *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 85, 104 n.26 (1984).

493. Surprisingly often, economic critics have failed to distinguish economic principles of "monopoly" from the legal principles of "monopoly" applied by the courts. The differences, where recognized, frequently have been dismissed as undesirable or unconscious deviations from the economic norm. See, e.g., Lavey, *supra* note 146, at 455 ("The correct, unflinching application of economic analysis of market power in antitrust cases is desirable."). A minority of commentators has acknowledged the divergent yet legitimate goals pursued by the judiciary and the extent of the radical cure proposed by economists. See generally Note, *supra* note 141; Dam, *supra* note 274.

494. See Krattenmaker, Lande & Salop, *supra* note 340.

495. 15 U.S.C. § 2 (1982). See *United States v. Aluminum Co. of America*, 148 F.2d 416, 424 (2d Cir. 1945) (over 90% market share sufficient; 60% share "doubtful"; 33% "certainly not" enough).

496. 15 U.S.C. § 18 (1982). See Department of Justice, 1984 Merger Guidelines, 49 Fed. Reg. 26,823-03 (1984).

sary for a tying violation under the Section 3 of the Clayton Act⁴⁹⁷ or Section 1 of the Sherman Act.⁴⁹⁸ In distinction to the economic analysis of leverage through tying, which places decisive emphasis on the relative pricing of the tying and tied goods when substantial monopoly is present, the courts have largely regarded pricing data as irrelevant to antitrust tying violations.⁴⁹⁹ Instead, major emphasis has been placed solely on market power which is only the first element of the economic model.⁵⁰⁰ Economists regard even market dominance as inoffensive if only fixed-proportion or counter-type tying arrangements, which are considered incidental to the legitimate monopoly power provided by a patent, are employed.

The ability to increase the price of the tying product over the competitive market rate is the basic attribute of market power for economists.⁵⁰¹ While recognizing such market power "in an abstract sense," the Court has refused to be bound by it, instead insisting that "theoretical" market power in the economic sense may be insufficient in the absence of "forcing."⁵⁰² Economists have objected that "forcing" in the sense required by the Court does not exist because buyers will accept a tying arrangement only if the total value of the package is superior to the non-tied alternatives available in the market.⁵⁰³ Moreover, as already pointed out, economists do not object if a buyer is "forced" to buy a tied product, as long as it is used in a fixed proportion to the tying product, or is merely a counter to determine the intensity of use of the tying product, and the total supply of the tied product is not reduced for the buying public.⁵⁰⁴

Nor is it a matter of concern to economists whether a patentee merely "shifts" the monopoly profit afforded by a patent to a tied product,

497. 15 U.S.C. § 14.

498. 15 U.S.C. § 1. See *supra* notes 132-38 and accompanying text.

499. See *supra* notes 186-89, 249, 255-58, 302-03 and accompanying text.

500. See *supra* notes 422-24 and accompanying text.

501. The concept is developed in detail in Landes & Posner, *supra* note 132; and Krattenmaker, Lande & Salop, *supra* note 340. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 27 n.46 (1984); *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 85, 109 n.38 (1984).

502. See *Jefferson Parish*, 466 U.S. at 27 (distinguishing theoretical economic "market power" on the basis that "[t]ying arrangements need only be condemned if they restrain competition on the merits by forcing purchases that would not otherwise be made").

503. It has been urged that the abdication of choice faced by buyers who accept a tying arrangement is illusory, since every buyer will bargain for the value of the tied package as a whole and will be happy to accept the best bargain available, tied or not. See Pearson, *supra* note 211, at 634. Acceptance of this argument does not necessarily lead to condonation of tying arrangements. See Slawson, *supra* note 146, at 273-75.

504. See, e.g., Bowman, *supra* note 340, at 20 ("A finding that supply is not restricted is a finding that no monopoly has been created.").

whether staple or nonstaple.⁵⁰⁵ In contrast, the courts have scrutinized the patentee's derivation of profit from a secondary monopoly in unpatented staples rather than in the sale of the patented invention and have condemned the effort to extend the economic benefit of the patent beyond its four corners.⁵⁰⁶

While economists have sought to impose an internally consistent, formal, price-based analysis of market power that is independent of the particular antitrust context, the Court has largely disregarded the economic model in tying violations,⁵⁰⁷ instead applying its own somewhat homespun concepts of "forcing" and "extension" of the patent monopoly.⁵⁰⁸ The alternative concepts fashioned by the Court proceed from a similarly fundamental difference in the perception of the social harm of tying arrangements. For economists, the basic social policy concern of monopoly theory is whether the tying arrangement reduces the supply of the tied product and increases its price above the competitive level set by the market.⁵⁰⁹ This formulation proceeds directly from the economic

505. In one circumstance, the law has recognized the patentee's interest in legitimate "extension" of the patent right to unpatented articles. If the unpatented articles are nonstaples or have no substantial use except with a patented invention, the patentee is permitted to require the purchaser of the patented invention also to buy the nonstaple supply or component in a tying arrangement. See *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176 (1980). This is a much narrower exception than the economic argument for "spreading" monopoly profits. See *supra* notes 364-74 and accompanying text.

506. See *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 517 (1917); *supra* note 68 and accompanying text. This rationale was reaffirmed in *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 510 (1964) (plurality opinion) and in *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 220 (1980) (exception created by 35 U.S.C. § 271 "affects only the market for the invention itself").

507. Pearson condemns the absence of "rational economic analysis" in antitrust jurisprudence:

The present test—the amount of commerce affected in the market for the tied product—is not judgment, but the avoidance of judgment. It amounts to a condemnation of tying arrangements on speculation. Words like "coercion," "foreclosure" and "leverage" do not represent thought, but rather substitutes for thought. We have rule by cliché[é].

Pearson, *supra* note 211, at 653.

508. While the Court has relied on unsophisticated models in condemning tying arrangements without significant theoretical explanation or notable analytical consistency, Kaplow considers that the judicial theory is correctly grounded in a dynamic economic model considering long-run rather than immediate consequences. See Kaplow, *supra* note 340, at 530-31.

509. See Krattenmaker, Lande & Salop, *supra* note 340, at 249-55 ("core concept . . . is a firm's ability to increase profits and to harm consumers by charging prices above competitive levels"); Pearson, *supra* note 211, at 637 (Problems are avoided with "an antitrust policy bottomed on the maximization of consumer wants. . . . [E]xclusionary tactics such as tying arrangements and exclusive dealing seldom interfere with maximizing consumer wants.").

conception of "competition" as a "consumer welfare" program that is concerned primarily, if not exclusively, with the interests of all buyers in obtaining the maximum number of goods at the minimum price.⁵¹⁰

The courts on the other hand have focused on the interests of competitors in gaining access to the market for the tied product, rather than in buyers' collective interests.⁵¹¹ With scant attention to pricing theory⁵¹² or the consumer welfare rationale advanced by economists,⁵¹³ the courts have viewed the legal definition of market power as an integral aspect of a "quasi-tort [of tying as an] unfair method of competition."⁵¹⁴ While the Supreme Court's approach has not been monolithic or entirely consistent, and buyers' interest in "free choice" has often been raised, most significant Supreme Court tying decisions have

510. See R. BORK, *supra* note 340, at 51, 101, 375. "[T]he case is overwhelming for judicial adherence to the single goal of consumer welfare in the interpretation of the anti-trust laws." *Id.* at 89. See also Bork, *Legislative Intent and the Policy of the Sherman Act*, 9 J.L. & ECON. 7 (1966) (consumer welfare was the overriding legislative goal); Lavey, *supra* note 146, at 436; Dam, *supra* note 274, at 39 (tied sales in *Fortner I* benefited the public, by reducing the price of housing); Pearson, *supra* note 211, at 646; Krattenmaker, Lande & Salop, *supra* note 340, at 244.

511. See Note, *supra* note 141, at 92 ("[T]he principal evil at which the doctrine is aimed is the use of tying arrangements to deny competitors free access to the market for the tied product."); Pearson, *supra* note 211, at 635-37; Turner, *supra* note 211, at 60.

512. See, e.g. *Fashion Originators' Guild of Am. v. Federal Trade Comm'n*, 312 U.S. 457 (1941):

[A]n intent to increase prices is not an ever-present essential of conduct amounting to a violation of the policy of the Sherman and Clayton Acts; a monopoly contrary to their policies can exist even though a combination may temporarily or even permanently reduce the price of the articles manufactured or sold. For as this Court has said, "Trade or commerce under those circumstances may nevertheless be badly and unfortunately restrained by driving out of business the small dealers and worthy men whose lives have been spent therein. . . ."

312 U.S. at 467 (quoting *United States v. Trans-Missouri Freight Ass'n*, 166 U.S. 290, 323 (1897)).

513. See Note, *supra* note 141, at 93:

The policy against foreclosure of existing and potential competitors is not designed as part of a theory on the consumer welfare effects of particular market structures. The Court is, rather, reacting to the failure of economic theory to provide workable standards for measuring such broad economic effects. Here, as in other areas of antitrust, the Court is responding to economic indeterminacy with "a method of analysis placing primary emphasis on equality of opportunity, free access to markets by competitive [*sic*: Kauper used "competing"] sellers, and complete freedom of choice by buyers."

(quoting Kauper, *The "Warren Court" and the Antitrust Laws: Of Economics, Populism, and Cynicism*, 67 MICH. L. REV. 325, 332 (1968)).

514. See Note, *supra* note 141, at 93.

conceived "competition" in terms of the interests of competing sellers rather than the price or quantity of goods offered to buyers. The Court's focus on the rights of competitors was emphatic in *Northern Pacific*, where the Sherman Act was described as a "charter of economic liberty" fashioned principally, if not exclusively, to safeguard the interests of competitors.⁵¹⁵ Indeed, the buyers of the land were considered indifferent to the tying requirement imposed.⁵¹⁶ In an extreme example, the Court in *Jefferson Parish* maintained that

when a purchaser is "forced" to buy a product he would not have otherwise bought even from another seller in the tied-product market, there can be no adverse impact on competition because no portion of the market which would otherwise have been available to other sellers has been foreclosed.⁵¹⁷

However, the Court has not unfailingly adhered to this principle, and particularly in the block-booking cases has looked mainly to the interest of the buyer.⁵¹⁸

Considering the opposed legal and economic arguments in the debate over tying policy, the choice of emphasis on the conflicting interests of buyers or of competing sellers will often, if not inevitably, determine the result reached.⁵¹⁹ The determinative question is what authority guides or supports the choice of values. Since *Motion Picture Patents*⁵²⁰ and *United Shoe II*,⁵²¹ the Court has heeded the clear policy declaration in favor of competitors' interests in access to the market provided by the

515. See *Northern Pac. Ry. v. United States*, 356 U.S. 1, 4-5 (1958); *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 85, 104 n.27 (1984).

516. See *Turner*, *supra* note 211, at 61; *Northern Pac. Ry. v. United States*, 356 U.S. at 17 (Harlan, J., dissenting) ("[I]t would appear that the inclusion of the tying clauses in contracts or leases might have been largely a matter of indifference to at least many of the purchasers or lessees of appellants' land.").

517. *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 16 (1984).

518. See, e.g., *United States v. Loew's, Inc.*, 371 U.S. 38 (1962); *United States v. Paramount Pictures, Inc.*, 334 U.S. 131 (1948); cf. *Automatic Radio Mfg. Co. v. Hazeltine Research, Inc.*, 339 U.S. 827 (1950) (package licensing of patents). It is likely that in block-booking and package-licensing arrangements there is little if any "foreclosure" or other exclusion of competitors, since the tied product is seldom a functionally interrelated fungible commodity such as dry ice, ink, or anaesthesia. Possibly the Court turned to the forcing rationale from tacit recognition that others were not prevented from selling competing movies or patents by the tie imposed.

519. See R. BORK, *supra* note 340, at 58-61.

520. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

521. *United Shoe Mach. Corp. v. United States*, 258 U.S. 451 (1922).

Clayton Act.⁵²² The argument against the per se rule, presented by economic followers of the Chicago school, has often failed to recognize that a choice of values exists by positing a quasi-natural law authority for price theory⁵²³ with limited attention to the opposing values applied by the judiciary in fashioning antitrust law.⁵²⁴

Judge Bork in particular is guilty of championing certain economic values over opposing views inherent in traditional antitrust analysis.⁵²⁵ In his discussion of tying, Bork has failed to consider the legislative history of the Clayton Act, which is the preeminent statutory provision specifically directed to the "evil" of tying provisions.⁵²⁶ While the Clayton Act was designed to remedy the perceived failure of the Sherman Act to protect small businesses from the encroachment of "monopoly" even in its incipiency⁵²⁷ and Posner admits that its drafters believed in

522. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 10 n.15 (1984); cf. *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 85, 104 n.27 (1984) (Sherman Act).

523. Kaplow observes that the assumption of profit-maximizing behavior is "invoked so often as to make it almost beyond question in the minds of some." See Kaplow, *supra* note 340, at 547-52. He questions the economic criticism on the basis that the "fixed sum hypothesis is . . . not an inherent physical law, on a par with the conservation of mass plus energy, but a position that when properly examined is at base counterintuitive." *Id.* at 525.

524. See, e.g., Pearson, *supra* note 211, at 635-37 (optimum allocation of resources is sole legitimate concern, requiring adoption of "pure" economic test); Dam, *supra* note 274, at 31 (social objectives pursued by judiciary in *Fortner I* have "little to do with competition in the economic sense"); Note, *supra* note 143, at 1313 (courts' unfavorable treatment of legally differentiated tying products "cannot be justified on grounds of protecting tied-product competition").

525. See R. BORK, *supra* note 340, at 51 ("only legitimate goal of American antitrust law is maximization of consumer welfare"). Bork maintains that leveraging theory has been "thoroughly and repeatedly demolished in the legal and economic literature. That the law's course remained utterly undeflected for so long casts an illuminating, and if you are of a sardonic turn of mind, amusing sidelight upon the relation of scholarship to judicial lawmaking." *Id.* at 372.

526. The more conventional legal approach has been that enactment of a subsequent, narrow, remedial statute such as the Clayton Act alters the public policy with respect to tying imperfectly expressed in an earlier, broader and less definite statute such as the Sherman Act. See *United Shoe Mach. Corp. v. United States*, 258 U.S. 451 (1922); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917); *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 11 (1984) (Clayton Act policy "must be respected" in Sherman Act case).

527. See, e.g., Kramer, *supra* note 153, at 1016-23; Fox, *The Battle for the Soul of Antitrust*, 75 CALIF. L. REV. 917, 918-19 (1987); *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 10 & n.15 (1984); *Standard Oil Co. of Cal. v. United States*, 337 U.S. 293, 311-12 (1949). Bork apparently does not contest this view of the legislative purpose, since otherwise his condemnation of congressional intellect would merely be lashing the Bosphorus. See *infra* note 531 and accompanying text. Indeed, he elsewhere acknowledges the explicit or implicit historical preference of antitrust law for small producers over consumers, which is disparaged as "a jumble of half-digested notions and mythologies." R. BORK, *supra* note 340, at 54.

the leverage provided by tying arrangements,⁵²⁸ Bork's account of the statutory offense of tying omits mention of this legislative purpose.⁵²⁹ Elsewhere, he maintains that the legislative intent "is best served by ascribing to Congress a consumer welfare goal in each of the antitrust statutes."⁵³⁰

Accordingly, Bork is willing to invest the economic theories of the Chicago school with authority normally reserved for constitutional provisions. In his view, the will of the legislature can be disregarded by judges convinced of the "intellectual decadence" of the law.⁵³¹ In particular, on surveying the Clayton Act and the Robinson-Patman Act, the "modest" judge with a "rudimentary understanding of market economics" will discern that Congress has blundered. Though these practices are "almost entirely beneficial," Congress has mistakenly concluded that they may somehow injure competition.⁵³² Provided with superior judicial intelligence,⁵³³ the Court is entitled simply to disregard the legislative will where "it knows the legislature is wrong," by refusing to enforce the law until the legislature provides one more to the judges' liking.⁵³⁴

This proposal reverses the customary judicial deference to the legisla-

528. R. POSNER, *supra* note 340, at 183.

529. No trace of the legislative intent to protect small businesses, even at the cost of some inefficiency, appears in the sections dealing with the legislative history of the Clayton and Federal Trade Commission Acts. See R. BORK, *supra* note 340, at 47-49, 63. Instead, Bork suggests that the law's omnipresent concern with the interests of small competitors in the tied-product markets is a result of "activist" judges willing to "force [their] policy views even against the tenor of a statute." *Id.* at 46-47 (criticizing Justice Brandeis' views in *Board of Trade v. United States*, 246 U.S. 231 (1918)); see *id.* at 51-54 (criticizing Judge Learned Hand's views in *United States v. Aluminum Co. of America*, 148 F.2d 416 (2d Cir. 1945)).

530. R. BORK, *supra* note 340, at 84. Bork's approach first assumes that "in enacting statutes such as these . . . few if any congressmen ever focused upon the possibility of a conflict between consumer and small business interests." See *id.* Based on this assumption, courts may disregard the interests of competitors, by adhering solely to the consumer welfare goal. Then, if Congress "really wants different results," it can pass remedial legislation. See *id.* The problem with this analysis is that it is a reasonably good summary of the actual legislative history of the Clayton Act. See Kramer, *supra* note 153, at 1016-23. Fox correctly objects that "Chicagoans ignore legislative history." Fox, *supra* note 527, at 919.

531. See R. BORK, *supra* note 340, at 408.

532. See *id.* at 409.

533. The contrary legislative conclusion underlying the Clayton Act is finally admitted, but dismissed as "nonsense" with the somewhat contemptuous remark that "[n]o court is constitutionally responsible for the legislature's intelligence." *Id.* at 410.

534. See *id.* The aspiring legislator is not left long in doubt as to the formulation of this new and improved Clayton Act. Rather than forbid tying arrangements, it declares forthrightly: "We can discern no way in which tying arrangements, exclusive dealing contracts, vertical mergers, price differences, and the like injure competition or lead to monopoly." *Id.*

ture in matters of economic regulation.⁵³⁵ What is yet more remarkable is Bork's naked endorsement of unrestrained judicial activism in the present context.⁵³⁶ In other contexts, he has persuasively argued that "no argument that is both coherent and respectable can be made supporting a Supreme Court that 'chooses fundamental values' because a Court that makes rather than implements value choices cannot be squared with the presuppositions of a democratic society."⁵³⁷ The anchor of the constitutional order is deference to the "community judgment embodied in the statute" since "value choice" is constitutionally assigned to the legislature.⁵³⁸ Accordingly, courts "must accept any value choice the legislature makes unless it clearly runs contrary to a choice made in the framing of the Constitution."⁵³⁹ There is irony in this attack on robed philosopher kings by one who himself "claims for the Supreme Court an institutionalized role as perpetrator of limited coups d'etat" in the anti-trust arena.⁵⁴⁰ More than a paradox, Bork's social and antitrust prescriptions are policies at war with themselves. It is not mere "majestic imperviousness"⁵⁴¹ for courts to require more than cursory consideration of the case and legislative histories before overruling substantially all antitrust tying precedent on the basis of a theory that is an expression of value judgments, and even according to its proponents has not been empirically tested.⁵⁴²

535. See *Garcia v. San Antonio Metro. Transit Auth.*, 469 U.S. 528 (1985). In *Wickard v. Filburn*, 317 U.S. 111 (1942), the Court taught that conflicts of economic interest under federal regulatory legislation are "wisely left . . . to . . . Congress under its more flexible and responsible legislative process. Such conflicts rarely lend themselves to judicial determination. And with the wisdom, workability, or fairness, of the plan of regulation we have nothing to do." *Id.* at 129. See *United States v. Darby*, 312 U.S. 100, 115, 120-21 (1941); *United States v. Carolene Prods. Co.*, 304 U.S. 144, 151 (1938). Justice Stone's opinion in *Carolene Products* also outlined the exception to the rule, indicating that closer scrutiny is required when legislation affects a preferred right such as those secured by the Bill of Rights or possessed by a racial minority. See *id.* at 152.

536. Earlier, Bork excoriates Justice Brandeis and Judge Learned Hand on the basis that Congress "most certainly did not delegate any such free value-choosing to the courts." R. BORK, *supra* note 340, at 53. See *id.* at 41-47, 51-54.

537. Bork, *Neutral Principles and Some First Amendment Problems*, 47 *IND. L.J.* 1, 6 (1971). For this reason, the Court may not overrule state legislatures on an issue such as contraception, and impose its own "value judgment," without sacrificing judicial legitimacy.

538. See *id.* at 10.

539. *Id.* at 10-11.

540. See *id.* at 6.

541. R. BORK, *supra* note 340, at 365.

542. See Posner, *supra* note 344. While Bork attacks the "sterile circularity of the law's reasoning," his own analysis is predicated upon the assumption that the opposing Chicago economic theories "have been repeatedly and conclusively demonstrated by a number of commentators." R. BORK, *supra* note 340, at 365. Both Bowman and Posner agree that "extension" of monopoly can result from tying arrangements. See *supra* note 425 and accompanying text.

Summary

In determining whether tying arrangements violate antitrust law, courts have avoided the price-based economic analytical model, in favor of an inquiry based on the availability of substitutes⁵⁴³ and the two-products rule.⁵⁴⁴ In contrast to the rationalistic reductionism of the economic model, the tying analysis is purposefully vague and subjective, determining market power by such factors as whether the tying product is sufficiently "distinctive" or "unique"⁵⁴⁵ to "force" buyers⁵⁴⁶ to accept "burdensome" conditions,⁵⁴⁷ such as a tie. The flexibility provided by the tying standard is increased by the two-product rule, which enables courts to disregard evidence of market share,⁵⁴⁸ and by the essentially non-quantitative inquiry into the availability of substitutes.⁵⁴⁹ Even with respect to the single factor of market power, the courts have defied economic theory by finding sufficient economic leverage when substitute tying products are readily available.⁵⁵⁰

Outside the limited enclave of tying arrangements imposed by "legally differentiated" tying products, the Court has placed increasing emphasis on the availability of substitutes in determining market

543. See *supra* notes 147, 258, 275 and accompanying text.

544. See *supra* notes 129, 298-300 and accompanying text.

545. See *supra* notes 130, 136-37, 147, 209, 211, 270, 275-79 and accompanying text.

546. See *supra* notes 140, 296 and accompanying text.

547. See *supra* notes 138, 274 and accompanying text.

548. See *supra* notes 233-35 and accompanying text.

549. For example, the evidence in *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956), suggests the likelihood of monopoly pricing. See *Turner, Antitrust Policy and the Cellophane Case*, 70 HARV. L. REV. 281 (1956); *Krattenmaker, Lande & Salop, supra* note 340, at 256 n.75 (price at which competition from other flexible wrappings constrained further price increases by du Pont was not necessarily the competitive price for cellophane, but rather could have been the monopoly price). It is clear that by virtue of its trade secrets, du Pont had an effective monopoly on the process used to produce cellophane. See 351 U.S. at 392. Nonetheless, by the application of essentially subjective criteria, the Court determined that alternative flexible wrapping materials were "substitutes" and that no violation of the Sherman Act was proved.

550. See, e.g., *United States v. Loew's, Inc.*, 371 U.S. 38, 49 (1962) ("the mere presence of competing substitutes for the tying product . . . is insufficient to destroy the legal, and indeed the economic, distinctiveness of the copyrighted product"); *Northern Pac. Ry. v. United States*, 356 U.S. 1, 10 n.8 (1958) (explaining that in *International Salt*, an uncontroverted offer of proof that "competitive salt machines were readily available which were satisfactory substitutes" was "irrelevant"); *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495 (1969) (completely fungible tying product, money, not preclusive of antitrust liability); *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336, 1345 (9th Cir. 1984), *cert. denied*, 473 U.S. 908 (1985) ("adverse impact on competition . . . is not diminished by the fact that other sellers may be selling products similar to the tying product").

power,⁵⁵¹ thus integrating the standard generally applied in antitrust cases.⁵⁵² The legislative history of the patent misuse amendment emphasizes the availability of substitutes for the patented product, in determining whether "market power" exists under 35 U.S.C. § 271(d)(5).⁵⁵³ Because judges are more accustomed to making such factual comparisons than to analyzing economic pricing or market theory, it is probable that substitutes for the tying product may be considered an important factor in evaluating market power for purposes of patent misuse.

IV. Market Power in Patent Misuse Cases

A. Legislative Intent

Congress has not mandated application of any test, legal or economic, for determining the kind or extent of "market power" necessary for patent misuse under amended Section 271(d)(5). With respect to the change in the judicially-created doctrine of patent misuse, Rep. Kastenmeier⁵⁵⁴ explained:

The proposed amendment requires that the person who engages in tying conduct must possess "market power in the relevant market." The term "market power" is used in this context in order to permit the courts to reasonably assess the potential for anticompetitive effect of a particular practice. We have chosen not to explicitly guide the courts as to the

551. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 26-27 (1984) (majority opinion); *id.* at 37-40 (O'Connor, J. concurring); *United States Steel Corp. v. Fortner Enters.*, 429 U.S. 610, 621 (1977); *Fortner Enters. v. United States Steel Corp.*, 394 U.S. 495, 514-15 (1969) (White, J., dissenting); *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 611-12 nn.30-31 (1953).

552. See, e.g., *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 85, 111-112 & n.43 (1984); *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956).

553. See, e.g., 134 CONG. REC. H10,648 (daily ed. Oct. 20, 1988) (remarks of Rep. Kastenmeier, approving the approach of *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956)).

554. Rep. Kastenmeier introduced H.R. 4972, 100th Cong., 2d Sess. (1988), and the language of the amendment supplied in the House appears to have originated with his earlier tying provision, which preserved the rule against tying the sale of unpatented staples, but provided an exception "which precludes a finding of misuse when the patent owner cannot fairly be said to hold market power." 134 CONG. REC. H698 (daily ed. March 3, 1988). See also H.R. 4086, 100th Cong., 2d Sess. § 2 (1988).

level of "market power" required for a finding of misuse.⁵⁵⁵

The market power requirement is thus adapted, rather than adopted, from antitrust law, and Congress intentionally provided a vague and open-ended definition, with the direction that the Courts should tailor the remedy to fit the particular market context of patent rights.⁵⁵⁶

The somewhat cryptic and redundant requirement that market power be considered "in view of the circumstances" is an indication that courts should consider the specific market in which the tying arrangement is imposed in relation to the patent and the particular product:

Courts should evaluate the question of "market power" in the context of the patent, where a patent license is involved, the product and the market in which the tie-in occurs. This type of fact specific contextual analysis should make the fact-finding process more sensitive to the realities of the market-place.⁵⁵⁷

Congress similarly recognized that antitrust market power is not a single concept, but varies considerably with the particular antitrust context.⁵⁵⁸ In particular, Congress considered and rejected the use of market

555. 134 CONG. REC. H10,648 (daily ed. Oct. 20, 1988) (remarks of Rep. Kastenmeier; case citations omitted). Senator Leahy agreed

that the term "market power" is used in the provision on misuse in no new or unique way. Congress is definitely not attempting to create a definition or usage of the term by a statute that would bind courts in either patent misuse or antitrust litigation. We are neither directing nor guiding the courts with regard to the level of [sic] nature of "market power" required for a misuse finding.

134 CONG. REC. S17,148 (daily ed. October 21, 1988).
556.

We do expect, however, that the courts will be guided—though not bound—by the post [sic] and future decisions of the Supreme Court in the context of antitrust analysis of unlawful tie-ins. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984); *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956).

134 CONG. REC. H10,648 (daily ed. Oct. 20, 1988) (remarks of Rep. Kastenmeier).
557. *Id.*
558.

We have chosen not to adopt a specific modifier to "market power," such as "substantial." This does not mean, however, that the courts would not reach this result. In many of the recent cases courts have developed various approaches to the question of substantiality of "market power," including the use of specific percentages. The absence of a modifier is designed to avoid the use of inflexible rules.

share as determinative of the issue of patent "market power."⁵⁵⁹ However, one element of conventional antitrust analysis was specifically approved by Congress, because the legislative history suggests the importance of substitute products in determining market power:

The use of the term relevant market is designed to import into the courts' analysis the idea that the scope of the product involved focuses the court's attention on the nature of the property right. If a patented product is unique because no practical substitutes exist, the scope of the relevant market would be coextensive with the patent. In the situation where the product is sold in a marketplace context where there are substitute products, the scope of the market should resemble the typical antitrust analysis of relevant market.⁵⁶⁰

These remarks confirm that by providing only a threshold market power requirement for patent misuse, Congress clearly rejected the economic theory that tying arrangements, in whole or in part, should be categorically immunized as socially useful or procompetitive. Moreover, by rejecting evidence of market share as conclusive on the issue of market power, Congress refused to follow the suggestion that tying arrangements are only harmful where there is virtual monopoly power in the tying product.⁵⁶¹ Instead, the legislative directive was to preserve judicial scrutiny of tying arrangements where the tied product is "not a staple article or commodity of commerce suitable for substantial non-infringing use,"⁵⁶² due to the heightened likelihood of anticompetitive effect. Rep. Kastenmeier indicated that while the misuse reform legislation was intended to eliminate the *per se* inference of patent misuse from a tying practice, it was not intended to eradicate wholly the long-established scrutiny of ties involving staple products:

The ability of a party with a patented product to require that the purchaser or the licensee of that product to [sic] use a particular staple could have an anticompetitive effect. Thus, for cases involving the tie-in of staple products, the courts should

559. *See id.* ("Courts should not use rigid percentage of market share as either a floor or ceiling in the determining of 'market power.'").

560. *Id.*

561. *But see DOJ Vertical Guidelines, supra* note 474, at 56,185.

562. 35 U.S.C. § 271(c) (1982). This will always be the case, since nonstaples may be tied even where market power is present, without misuse. *See supra* notes 39-44 and accompanying text.

be sensitive to the potential anticompetitive burden on commerce such a practice may have if the maker of a competing staple has its market substantially diminished as a result of the tie-in.⁵⁶³

Thus it is clear that whatever Congress may have thought of the economic critics' theory of tying arrangements, it considered the primary, if not the sole harm resulting from tie-ins to be possible injury to competing sellers in the tied product market, the principal judicial concern in the antitrust tying context.

In view of the considerable latitude provided to the courts by the drafters of the amended misuse provision, this Article now turns to the question of the extent to which the antitrust tying analysis outlined above, and particularly the emphasis on substitutes in the tying product market, is applicable to determining market power for patent misuse.

B. Legal and Market Substitutes

While economic critics have assiduously attacked "fallacies" underlying the traditional antitrust approach to tying arrangements, their common assumption, that the availability of substitutes for a patented product negates market power, fails to recognize the difference between economic and legal substitutes.

The critical importance of this distinction can be illustrated by the famous example of a patent claiming an improved welding flux composition, containing the combination of silicate, an alkaline earth metal, and calcium fluoride. If the patent owner refused to license the flux unless the user also purchased welding rods used in the process, such a tying arrangement would violate the traditional patent misuse rule, thereby rendering the patent unenforceable against any infringing user or manufacturer of the patented flux.⁵⁶⁴ Under the rule of *International Salt*, the tying arrangement would also constitute a per se antitrust violation, at least where the amount of commerce affected in the tied welding rods is "not insubstantial."⁵⁶⁵

563. 134 CONG. REC. H10,648 (daily ed. Oct. 20, 1988) (remarks of Rep. Kastemeier).

564. See *Linde Air Prods. Co. v. Graver Tank & Mfg. Co.*, 86 F. Supp. 191, 200 (N.D. Ind. 1947), *rev'd on other grounds*, 167 F.2d 531 (7th Cir. 1948), *reinstated on cert.*, 336 U.S. 271 (1949), *adhered to on reh'g*, 339 U.S. 605 (1950).

565. See *International Salt Co. v. United States*, 332 U.S. 395, 396 (1947). The proposed antitrust amendment, which would have eliminated the presumption of market power for patented tying products, evidently would have imposed a market power requirement for an antitrust tying violation similar to that required to show patent misuse. See *supra* note 150.

Under the amended misuse provision, an infringer must show that the patent owner has "market power" in the tying composition in order to raise patent misuse as a defense.⁵⁶⁶ Following the accepted economic analysis, it would be impossible to show market power if suitable substitutes were available for the patented flux. Accordingly, the availability of such a functional substitute at competitive prices, e.g., a welding composition principally composed of a silicate of manganese, which is not an alkaline earth metal, identical in operation and producing the same kind and quality of weld, would negate the possibility of market power in the patented composition.

The substitution of such known functional equivalents was addressed in *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*,⁵⁶⁷ the landmark Supreme Court doctrine of equivalents case. Contrary to the intuitive conclusion that the functionally identical substitute flux did not infringe because it was excluded from the literal scope of the claims, the Court held that the patent claim should be extended to include compositions that perform substantially the same function, in substantially the same way, to obtain substantially the same result.⁵⁶⁸ Consequently, a functional substitute was held to infringe the claims, and could not be considered an effective legal substitute.

The doctrine of equivalents thus brings many economic substitutes in the relevant product and geographic markets within the scope of the patent monopoly. The typical antitrust analysis of substitutes is a complicated question, requiring extensive proof based on functional characteristics and demand interrelationship between functionally similar products.⁵⁶⁹ When the tying product is patented, the conventional analysis is immeasurably complicated by the requirement of further determining whether one or more available economic substitutes, for which a separate market demand exists, is also a legal substitute for a claimed product under the doctrine of equivalents. As the Court explained in *Graver Tank*:

What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case. Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum. It does not require complete identity for

566. See *supra* notes 111-24 and accompanying text.

567. 339 U.S. 605, *reh'g denied*, 340 U.S. 845 (1950).

568. See 339 U.S. at 608.

569. See *infra* notes 580-87 and accompanying text.

every purpose and in every respect. In determining equivalents, things equal to the same thing may not be equal to each other and, by the same token, things for most purposes different may sometimes be equivalents. Consideration must be given to the purpose for which an ingredient is used in a patent, the qualities it has when combined with the other ingredients, and the function which it is intended to perform. An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was.⁵⁷⁰

Elaborating on the manifestly counterintuitive proposition that "things equal to the same thing may not be equal to each other," the courts have intentionally fashioned the doctrine of equivalents into one of the most complex and unpredictable factors in patent enforcement. The essentially subjective nature of the standard makes it difficult to determine whether a device or composition, outside a definite and art-recognized literal limitation of the claims, will be held to be an equivalent until the case is decided on appeal. As the Federal Circuit has explained:

the doctrine of equivalents has been judicially created to ensure that a patentee can receive full protection for his or her patented ideas by making it difficult for a copier to maneuver around a patent's claims. In view of this doctrine, a copier rarely knows whether his product "infringes" a patent or not until a district court passes on the issue.⁵⁷¹

This inherent difficulty is well illustrated by the frequent disagreement of the nation's most experienced patent judges on questions facially so simple as whether a screw fastening together vertical and horizontal support members for a swimming pool is the equivalent of an integral tab formed in the horizontal support for the same purpose.⁵⁷² In

570. 339 U.S. at 609.

571. *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 19 (Fed. Cir. 1984).

572. *See Coleco Indus. Inc. v. U.S. Int'l Trade Comm'n*, 573 F.2d 1247 (C.C.P.A. 1978). There the majority held that in a claimed swimming pool with horizontal support members with end portions having depending retaining elements to limit movement of the horizontal members relative to vertical support members and to each other, the substitution of screws for integral tabs formed in the horizontal members would satisfy the *Graver Tank* test, by using substantially the same means, functioning in substantially the same way, to accomplish substantially the same result. *See id.* at 1255. The concurring opinion maintained that the screw was not substantially the same means and did not function in substantially the same way as the integral tab. *See id.* at 1259. This disagreement on the equivalence of a screw holding together the frame of a swimming pool reveals the profun-

cases where the accused device is more technically challenging than a screw, or less familiar to district judges, the fragility of the equivalents analysis is more evident. Recently the Federal Circuit has divided sharply on questions of equivalence involving computer programmed fruit sorting machines⁵⁷³ and electrodeless discharge lamps.⁵⁷⁴ These decisions confirm that *Graver Tank* is certainly among the most frequently lauded patent decisions of the Supreme Court in recent times.⁵⁷⁵ However, they also indicate that *Graver Tank* provides a standard which is so far from determinate that it is impossible to predict whether a functionally identical substitute for a patented invention is infringing or non-infringing, even though it is unquestionably outside the literal scope of the patent claims.⁵⁷⁶

Apart from the basic factual question⁵⁷⁷ of whether the accused device is an equivalent by function, manner, and result, infringement also requires resolution of the legal question of whether a patentee is "estopped" from asserting equivalency or limited to a narrow range of equivalents by statements or amendments made in the prosecution history.⁵⁷⁸ A subsidiary question is equally elusive: whether limitations introduced by the patentee in response to rejections were "required" by

dity of the equivalents analysis.

573. *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931 (Fed. Cir. 1987), cert. denied, 485 U.S. 961 (1988), 485 U.S. 1009 (1988). The confusion that prevails under the doctrine of equivalents is apparent from the harshness of the dissent, which accuses the majority of overruling the leading Federal Circuit equivalents cases *sub silentio* and refusing to follow the clear command of *Graver Tank*. See *id.* at 940-41.

574. *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528 (Fed. Cir. 1987).

575. Indeed, *Graver Tank's* wisdom is often extolled by judges unable to agree on the application of its diaphanous tripartite standard to a single element of an accused product. See *Pennwalt*, 833 F.2d at 933, 935, 940, 952, 954.

576. Anyone proposing that substitutes are available for minor improvement patents in the usual case should be required to demonstrate this assumption on the basis of *Graver Tank* and *Perkin-Elmer*, with particular attention to the public policy which is supposed to be "to temper unsparing logic and prevent an infringer from stealing the benefit of an invention." *Graver Tank*, 339 U.S. at 608 (quoting *Royal Typewriter Co. v. Remington Rand*, 168 F.2d 691, 692 (2d Cir. 1948)).

577. See *Graver Tank*, 339 U.S. at 609.

578. For this reason, although the screw in *Coleco Indus. v. U.S. Int'l Trade Comm'n.*, 573 F.2d 1247 (C.C.P.A. 1978) satisfied the *Graver Tank* equivalents test, the court held that the patentee was estopped from extending the scope of the claims under the doctrine of equivalents. An "estoppel by admission" was raised by statements made during prosecution, to distinguish the invention from a copending application that disclosed screws. Extending the traditional "file wrapper estoppel" rule, the court determined that a patentee having argued a narrow construction for his claims before the Patent and Trademark Office should be precluded from arguing a broader construction for the purposes of infringement. See *id.* at 1258.

the prior art, or made for some other purpose.⁵⁷⁹

The antitrust analysis of market power based on the existence of functional substitutes in the relevant geographical and product markets has emphasized precisely those factors that would also indicate equivalence for purposes of patent infringement. In *United States v. E.I. du Pont de Nemours & Co.*,⁵⁸⁰ the Court evaluated the market power necessary for a violation of Section 2 of the Sherman Act by examining the availability of substitutes for cellophane in the relevant product market for "flexible packaging materials." Although each manufacturer is the sole producer of the particular commodity it makes, "its control in the [antitrust] sense of the relevant market depends upon the availability of alternative commodities for buyers."⁵⁸¹ This is because of the economic axiom that "[i]t is inconceivable that price could be controlled without power over competition or vice versa."⁵⁸² Accordingly, the Court determined whether du Pont had monopoly power over cellophane by asking whether the company had power over its price in relation to competition with other commodities.⁵⁸³

The test for available substitutes is "largely gauged by the purchase of competing products for similar uses considering the price, characteristics and adaptability of the competing commodities."⁵⁸⁴ Further, in defining the relevant product market for determining the control of price and competition, "no more definite rule can be declared than that commodities reasonably interchangeable by consumers for the same purposes make up that 'part of the trade or commerce' monopolization of which may be illegal."⁵⁸⁵ Accordingly, the availability of other flexible wrapping materials "functionally interchangeable" with cellophane and "sold at the same time to same customers for same purpose at competitive prices" prevented a finding of monopoly,⁵⁸⁶ despite du Pont's seventy-

579. See, e.g., *Bayer A.G. v. Duphar Int'l Research B.V.*, 738 F.2d 1237, 1243 (Fed. Cir. 1984); *Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 871 (Fed. Cir. 1985); *Mannesmann Demag Corp. v. Engineered Metal Prods. Co., Inc.*, 793 F.2d 1279, 1284-85 (Fed. Cir. 1986); *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 939 n.2 (Fed. Cir. 1987) (*en banc*), *cert. denied*, 485 U.S. 961 (1988), 485 U.S. 1009 (1988); *Sun Studs, Inc. v. ATA Equip. Leasing, Inc.*, 872 F.2d 978, 987 (Fed. Cir. 1989).

580. 351 U.S. 377 (1956) (the "Cellophane" case).

581. *Id.* at 380 ("i.e., whether there is a cross-elasticity of demand between cellophane and the other wrappings").

582. *Id.* at 392.

583. See *id.* at 393-94.

584. *Id.* at 380-81.

585. *Id.* at 395. "In determining the market under the Sherman Act, it is the use or uses to which the commodity is put that control." *Id.* at 395-96.

586. *Id.* at 394, 399. Cellophane was widely used in wrapping the same products in competition with other flexible wrapping products, and there was a very considerable degree of functional interchangeability between cellophane and films such as Pliofilm, foil, glassine, polyethylene, and Saran. See *id.*

five-percent market share and complete control of the trade secret method used to prepare the product.⁵⁸⁷

Without going more deeply into the antitrust market power test applied in the *Cellophane* case,⁵⁸⁸ its application to the facts of *Graver Tank* is instructive. The patented welding flux and the infringing composition were evidently perfect functional substitutes, both permitting electric arc welding of thick metal sheets in a single pass.⁵⁸⁹ They were clearly part of the same relevant market for arc welding fluxes, since they were "reasonably interchangeable by consumers for the same purposes."⁵⁹⁰ For the identical purpose, they performed in substantially the same way, to reach the same result.⁵⁹¹ Accordingly, the infringing composition was undoubtedly a perfect substitute under the *Cellophane* rule, since it was purchased "for similar uses considering the price, characteristics and adaptability of the competing commodities."⁵⁹² There was evidently "high cross elasticity of demand" since a slight decrease in the price of the accused flux would persuade a considerable number of users to switch to the infringing composition.⁵⁹³ Under the *Cellophane* rule, the existence of perfect competing substitutes would negate the possibility of economic market power, by denying the patentee the ability to control the price of the flux.⁵⁹⁴

To return to the question of misuse under Section 271(d)(5), the existence of exact functional and economic substitutes for the patented

587. See *id.* at 379, 391-92 ("If cellophane is the 'market' that du Pont is found to dominate, it may be assumed it does have monopoly power over that 'market.' . . . [I]t may be practically impossible for anyone to commence manufacturing cellophane without full access to du Pont's technique.").

588. While agreeing on the theoretical standard for determining market power, the Court was fragmented on the standard's application to agreed facts regarding the market shares of various materials. Justice Reed's opinion for the Court commanded only three votes. Justice Frankfurter concurred in the judgment and in the conclusion that the relevant market included materials other than cellophane. See *id.* at 413. Justice Warren dissented, joined by Justices Douglas and Black, see *id.* at 414, and Justices Clark and Harlan did not participate.

589. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 336 U.S. 271, 275-76 (1949).

590. *Cellophane*, 351 U.S. at 395.

591. See *Graver Tank*, 339 U.S. at 608.

592. *Cellophane*, 351 U.S. at 380-81.

593. See *id.* at 400.

594. Market power resulting from the ability to charge a supracompetitive price without losing market share to the competing product would clearly not exist. See *id.* at 400 ("[G]reat sensitivity of customers in the [relevant] markets to price or quantity changes" prevents monopoly control over price). Although monopolization under Section 2 might still be found where only two producers competed "over limited products in narrow fields" such as the welding flux market, see *id.* at 395, this result could be avoided by assuming for analytical purposes that a number of competing manufacturers would have entered the field if the price were supracompetitive.

composition, outside the literal language of the claims, would not preclude a finding of market power. On the contrary, the doctrine of equivalents sweeps many economic substitutes within the scope of narrowly-drafted claims.⁵⁹⁵

The unavoidable effect of the doctrine of equivalents⁵⁹⁶ supports the wisdom of the presumption of antitrust market power for a patented product. The difficulty presented by the doctrine of equivalents has not been considered by economists, who assume that "substitutes" are commonly available for patented products.⁵⁹⁷ "[Their] argument is based on the utopian belief that a copier should be able to look to the patent claims and know whether his [or her] activity infringes or *not*.' Although this may be a desirable goal for the patent laws, it is not the law as it exists."⁵⁹⁸ The economic criticism of the presumption of economic power from a patent is not only based on "over-sophisticated rationalizations";⁵⁹⁹ it is also premised on facile assumptions, failing to consider elementary tenets of patent law that necessarily interact with pure economic factors in a determination of market power in a patented product "in view of the circumstances."⁶⁰⁰

This is not to suggest that there are never substitutes for patented inventions, but rather that determination of such substitutes may require an exceedingly complicated legal analysis, entirely apart from market analysis. Even if the definition of substitutes under the doctrine of equivalents were practicable, the "realities of the marketplace" for

595. The analysis of the market power conveyed by a copyright is fundamentally different from that provided by a patent, because copyright infringement requires copying and application of a "substantial similarity" test in evaluating infringement by a non-identical or derivative work. See, e.g., *Atari, Inc. v. North American Philips Cons. Elec. Corp.*, 672 F.2d 607, 614 (7th Cir.), cert. denied, 459 U.S. 880 (1982); *Walker v. Time Life Films, Inc.*, 784 F.2d 44, 48-51 (2d Cir.), cert. denied, 476 U.S. 1159 (1986); *Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1162 (9th Cir. 1977). Any meaningful comparison of patent and copyright market power must take these differences into account, along with the limited rights provided by copyright, see 17 U.S.C. § 102(b) (1988), and the plethora of statutory limitations on copyrights. See 17 U.S.C.A. §§ 107-112, 115-19 (Supp. 1990).

596. The Federal Circuit has applied the doctrine of equivalents as a matter of course, suggesting that all claims are entitled to some range of equivalents. The range of equivalents may vary from minute to vast depending on the extent and closeness of the prior art. See *Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 805 F.2d 1558, 1568-69 (Fed. Cir. 1986), reh'g denied, 846 F.2d 1369 (Fed. Cir. 1988); *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528, 1532 (Fed. Cir. 1987).

597. See *supra* notes 476-82 and accompanying text.

598. *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 19 (Fed. Cir. 1984) (emphasis in original) (quoting Nies, J., dissenting).

599. See *Brown, supra* note 14, at 219.

600. See 35 U.S.C.A. § 271(d)(5) (Supp. 1990).

patented inventions⁶⁰¹ may require a fundamentally different approach from the antitrust analysis in defining the relevant product market. Particularly in the "thin" markets commonly encountered for patented technology,⁶⁰² courts considering the issue of available noninfringing substitutes have defined the relevant product market narrowly, requiring that an acceptable substitute offer the particular advantages of the patented invention. For example, in *Central Soya Co. v. George A. Hormel & Co.*,⁶⁰³ a patent owner sued to recover lost profits, under a test that required proof of the "absence of acceptable non-infringing substitutes"⁶⁰⁴ for the patented product, a pork loin fritter produced by a method of breading raw meat under pressure sufficient to elongate it in a defined range.⁶⁰⁵ The infringer argued that substitute pork loin fritters were available, but the Federal Circuit considered that such substitutes were not "acceptable" for the patented product "because no other breaded sliced pork product would have both the appearance and mouth feel developed by [the patented] method of embedding bread crumbs in a slice of meat."⁶⁰⁶

Thus, when the question of substitutes for a patented product has arisen in the context of lost profit damages, the Federal Circuit has defined the relevant product market narrowly, to require that asserted substitutes provide all the functional or cost advantages of the patented

601. See *supra* note 557 and accompanying text.

602. See Caves, Crookell & Killing, *supra* note 476 (cited by Rep. Kastenmeier, 134 CONG. REC. H698 (March 3, 1988), also cited in *Patent Licensing Reform Act of 1988: Hearing before the Subcomm. on Courts, Civil Liberties and the Administration of Justice of the Comm. on the Judiciary of the House of Representatives on H.R. 4086, 100th Cong., 2d Sess. 183 (1988) (statement of Prof. Merges) (Markets for specific technologies are often very "thin," with few direct substitutes available for particular inventions or components.)*

603. 723 F.2d 1573 (Fed. Cir. 1983).

604. *Id.* at 1578

605. See *id.* at 1575. The Federal Circuit approved use of the four-part test for lost profit damages fashioned in *Panduit Corp. v. Stahl Bros. Fibre Works*, 575 F.2d 1152, 1156 (6th Cir. 1978). It is clear that the *Panduit* analysis is not the sole method for establishing entitlement to lost profits. See *Bio-Rad Labs., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 616 (Fed. Cir.), *cert. denied*, 469 U.S. 1038 (1984). As the Federal Circuit has developed the rule, the basic criterion is whether a patent owner has made a reasonable showing that particular sales would have been made "but for" sales of the infringing product. See *Central Soya*, 723 F.2d at 1579 (proof that available substitutes were infringing not required where 80% of infringing sales were to former customers of patentee); *Gyromat Corp. v. Champion Spark Plug Co.*, 735 F.2d 549, 553 (Fed. Cir. 1984) (suggesting that a narrow definition of the product market which excluded competing substitutes is irrelevant when two suppliers competed directly for sales in the limited market); *Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc.*, 761 F.2d 649, 653 (Fed. Cir.), *cert. denied*, 474 U.S. 902 (1985) (direct competition for amphibious vehicles sufficient for lost profits recovery, despite assertions that non-infringing substitutes were available).

606. 723 F.2d at 1579.

technology to be "acceptable." In *Gyromat Corp. v. Champion Spark Plug Co.*,⁶⁰⁷ the infringer asserted that lost profits were precluded for sales of air atomized, short-stroke industrial paint sprayers because of available substitutes, in particular, long-stroke systems supplied by other manufacturers.⁶⁰⁸ The Federal Circuit found that these substitutes were not "acceptable" because they cost about fifteen percent more than the short-stroke systems, had different operating characteristics and were inferior to the patented sprayers for certain work.⁶⁰⁹ Patented devices accounted for only twenty-five percent of the total desuperheater market in *Yarway Corp. v. Eur-Control USA, Inc.*,⁶¹⁰ but the competing desuperheaters were not "acceptable" substitutes, because they were not "equal or equivalent" to the patented machines.⁶¹¹ Once again, an extremely narrow relevant product market was defined to include only the patented and accused machines, which constituted a "special niche" or "minimarket" as the "relevant market" for determining lost profits.⁶¹²

These cases clarify the appropriate rule for determining substitutes in markets for patented technology. The "[m]ere existence of a competing device does not make that device an acceptable substitute."⁶¹³ In order to be an *acceptable* substitute in the relevant market, a commercially competing device must have "all beneficial characteristics" of the patented device,⁶¹⁴ since a product lacking these advantages "can hardly be termed a substitute 'acceptable' to the customer who wants those advantages."⁶¹⁵

Significant departures from existing antitrust criteria have been required both in the definition of substitutes and the relevant product market for patented technology, "in view of the circumstances" peculiar to the exclusive statutory right furnished by patents.

607. 735 F.2d 549 (Fed. Cir. 1984).

608. *See id.* at 553.

609. *See id.*

610. 775 F.2d 268 (Fed. Cir. 1985).

611. *See id.* at 275.

612. *See id.*

613. *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 901 (Fed. Cir.), *cert. denied*, 479 U.S. 852 (1986).

614. *See id.* at 901.

615. *Id.* at 901-02 (quoting *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1162 (6th Cir. 1978)).

C. The Test for Patent Misuse Market Power

The discretion conferred by Congress to define the standard of market power required under the patent misuse amendment is wide.⁶¹⁶ The courts⁶¹⁷ should exercise the discretion conferred by Congress to fashion a workable standard of market power in patent misuse cases, differing from the substitutes analysis applied in antitrust monopolization cases. The Federal Circuit has indicated that distinct policy considerations underlying patent and antitrust law may require divergent analysis of whether a tying arrangement involves "two products."⁶¹⁸ It is now necessary to consider market power in the law of patent misuse, but the patent and antitrust standards may nonetheless diverge. Market power stemming from a patent requires principal consideration of the legal scope of the patent claims and the functional relationship of equivalence. The mere presence of competing substitutes for the tying product may well be insufficient to destroy the legal, and indeed the economic, market power of a patent.⁶¹⁹ Patent market power differs from general market power in antitrust cases not only because of the elastic scope of patent rights, but also because of the patentee's ability to sue for up to treble

616. See *supra* notes 555-59 and accompanying text.

617. The Federal Circuit has exclusive appellate jurisdiction in patent cases. See 28 U.S.C.A. § 1295(a) (Supp. 1989). This jurisdiction includes all patent cases in which district court jurisdiction was based on 28 U.S.C. § 1338, including those with antitrust counterclaims arising under 28 U.S.C. § 1337. Although the Federal Circuit will apply the law of the regional circuit in deciding antitrust questions presented in a patent suit, construction of the market power requirement as it relates to patent misuse under 35 U.S.C. § 271(d)(5) is clearly committed to the Federal Circuit. See *Argus Chem. Corp. v. Fibre Glass-Evercoat Co.*, 812 F.2d 1381, 1384 (Fed. Cir. 1987); *Korody-Colyer Corp. v. Gen. Motors Corp.*, 828 F.2d 1572, 1578 (Fed. Cir. 1987); *Xeta, Inc. v. Atex, Inc.*, 852 F.2d 1280, 1282 (Fed. Cir. 1988).

618. See *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661 (Fed. Cir. 1986). Applying Ninth Circuit law with respect to the antitrust claims, which requires that "consumer behavior" (i.e., market demand) be examined to determine the separability of products in determining whether there is a tying arrangement for antitrust purposes, the Federal Circuit instructed:

The law of patent misuse in licensing need not look to consumer demand (which may be nonexistent) but need look only to the nature of the claimed invention as the basis for determining whether a product is a necessary concomitant of the invention or an entirely separate product. The law of antitrust violation, tailored for situations that may or may not involve a patent, looks to a consumer demand test for determining product separability.

Id. at 670 n.14.

619. See *supra* notes 602-15 and accompanying text; *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 901 (Fed. Cir.), *cert. denied*, 479 U.S. 852 (1986); *cf.* *United States v. Loew's, Inc.*, 371 U.S. 38, 49 (1962) (copyright); and *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336, 1345 (9th Cir. 1984) (copyright), *cert. denied*, 473 U.S. 908 (1985).

damages,⁶²⁰ prejudgment interest,⁶²¹ and attorney fees.⁶²² In addition, the market power provided by a patented product or process has often been the promethean ability to reduce the cost of production remarkably, and to establish a new prevailing market price that admits no competition.⁶²³ A patent's market power may thus provide clear domination, where the price of the product is substantially lowered, and the patent would not have permitted any supranormal price over the prevailing market rate before the invention.

In fashioning a test for determining whether an accused infringer has shown "market power" in the market for a tying patented product, the courts should avoid the conventional antitrust approach, which examines market share and the existence of substitutes, in favor of tests which preserve the threshold character of the misuse defense and do not require protracted market and infringement analysis. In order to invoke the affirmative defense of patent misuse under Section 271(d)(5), the accused infringer should be able to demonstrate sufficient market power, under established standards in "nondifferentiated" antitrust tying cases: distinctiveness,⁶²⁴ desirability,⁶²⁵ uniqueness,⁶²⁶ and economic barriers to entry,⁶²⁷ including research and development costs to design around the patent.⁶²⁸

620. The statutory measure of relief for patent infringement is "damages adequate to compensate for infringement but in no event less than a reasonable royalty for the use made of the invention. . . ." 35 U.S.C. § 284 (1982).

621. See *General Motors Corp. v. Devex Corp.*, 461 U.S. 648 (1983).

622. Reasonable attorney fees may be awarded to the prevailing party "in exceptional cases." 35 U.S.C. § 285 (1982).

623. Judge Lurton's opinion in *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896) demonstrates a subtle appreciation of this unique circumstance. See *supra* note 386. *Button-Fasteners* is exemplary of revolutionary inventions that have eliminated competition in the relevant market by providing a patented machine or method able profitably to produce a product at a price far lower than the prevailing market price. Though the cost to consumers of shoes is reduced, and the owner of the patented product is only able to sell the more efficient means of production at a price *below* that of substitutes offered by the most efficient competitors in the relevant market, the market power conveyed by the patent is nonetheless clear domination.

624. See *United States Steel Corp. v. Fortner Enterprises, Inc.*, 429 U.S. 610, 621 (1977); *Fortner Enterprises, Inc., v. United States Steel Corp.*, 394 U.S. 495, 505 n.2 (1969); cf. *United States v. Loew's, Inc.*, 371 U.S. 38, 46 (1962).

625. See *Fortner*, 394 U.S. at 503; *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336, 1345 (9th Cir. 1984), *cert. denied*, 473 U.S. 908 (1985) ("attractiveness").

626. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 17 (1984); *Fortner*, 429 U.S. at 620-21 (1977); *Fortner*, 394 U.S. at 503; *Northern Pac. Ry. v. United States*, 356 U.S. 1, 7 (1958).

627. See *Jefferson Parish*, 466 U.S. at 14; *Fortner*, 429 U.S. at 621; *Fortner*, 394 U.S. at 505 n.2; cf. *Int'l Salt Co. v. United States*, 332 U.S. 392, 397 (1947).

628. See *Digidyne*, 734 F.2d at 1342 (cost of designing around copyrighted software).

For example, in *Digidyne Corp. v. Data General Corp.*,⁶²⁹ the Ninth Circuit found a violation of the antitrust laws in a computer manufacturer's refusal to license operating system software except to purchasers of tied central processing units and peripherals. The district court considered that the relevant market was the operating systems market as a whole, and that reasonably interchangeable substitutes for the operating system were available in this market.⁶³⁰ The court of appeals reversed, indicating that the tying prohibition does not require monopoly power in the tying product market, but only sufficient market power to enable the seller to restrict competition in the tied product.⁶³¹ For this reason:

If a seller's product is distinctive, not available from other sources, and sufficiently attractive to some buyers to enable the seller by tying arrangements to foreclose a part of the market for a tied product, the adverse impact on competition in the tied product is not diminished by the fact that other sellers may be selling products similar to the tying product.⁶³²

629. 734 F.2d 1336 (9th Cir. 1984), *cert. denied*, 473 U.S. 908 (1985). The *Digidyne* decision has been extensively discussed, in the opinion of Justice White dissenting from denial of certiorari, and in the legislative history of the antitrust and patent misuse reform bills. See S. REP. NO. 492, 100th Cong., 2d Sess. 1, 3, 4 (1988) (accompanying S. 438, 100th Cong., 2d Sess., as amended (1988)); 134 CONG. REC. S14,435 (daily ed. Oct. 4, 1988) (remarks of Sen. Leahy). The influence of this decision, which encouraged if it did not directly provoke enactment of the patent misuse provision, is indicated by Brown, *supra* note 14 (reproducing earlier Senate testimony); Note, *Tying Arrangements and the Computer Industry*, *supra* note 107; Note, *The Presumption of Economic Power*, *supra* note 107 (all reproduced in the legislative history relating to the Senate antitrust provision. See *Intellectual Property Antitrust Protection Act of 1987: Hearing on S. 438 before the Subcomm. on Technology and the Law of the Comm. on the Judiciary, United States Senate*, 100th Cong., 1st Sess. 73-93, 229-75 (Oct. 20, 1987)).

630. After a forty-five day trial limited to the economic issue of market power, the jury concluded that sufficient market power was present. *In re Data General Corp. Antitrust Litigation*, 529 F. Supp. 801, 804 (N.D. Cal. 1981). The district court granted a motion for judgment notwithstanding the verdict on the basis that the relevant market was the market for general purpose minicomputers and microprocessors, and that no reasonable juror could find that within this large and dynamic market there was market power to restrain trade through an illegal tie-in. See *id.* at 821.

631. See 734 F.2d at 1339-40.

632. *Id.* at 1345. Reaching a seemingly inconsistent conclusion in *A.I. Root Co. v. Computer/Dynamics, Inc.*, 806 F.2d 673 (6th Cir. 1986), the Sixth Circuit considered the tied sale of operating software to applications software and computer hardware, but held that the seller did not possess the requisite economic power for an illegal tie, since it controlled only two to four percent of the small computer market. The court distinguished *Digidyne* on the basis that there was no evidence that the operating software at issue was "particularly unique or desirable." See *id.* at 677. Congress has since disapproved of the "rigid" use of market share as a floor in determining market power for patent misuse. See *supra* note 559 and accompanying text.

The court of appeals determined that substantial evidence supported the jury verdict that operating software was "sufficiently unique and desirable" to force a substantial number of buyers to buy central processing units and peripherals that they would have preferred not to buy.⁶³³ Among other factors, the evidence indicated strong customer preference for the copyrighted operating system software,⁶³⁴ technical advantages over competing products, such as running speed,⁶³⁵ and the power to "lock-in" users of the operating system who spent millions of dollars in designing application software that could not be converted for use with other operating system software.⁶³⁶ An additional factor indicating the distinctiveness of the tying software was testimony that the cost of designing around the copyright would be enormous.⁶³⁷ Each of these factors is equally pertinent to a determination of market power for patent misuse, although the expense of establishing antitrust market power may be prohibitive, as the forty-five day trial limited to issues of market power in *Digidyne* illustrates.⁶³⁸

Simpler measures of market power for a patented product are desirable. One powerful index of market power is the decision of a party accused of infringement to continue use of the patented invention, faced with the risk of an infringement suit, rather than merely shifting to an available substitute.⁶³⁹ Damages are routinely increased up to three times when willful infringement is found,⁶⁴⁰ and attorney fees are

633. See 734 F.2d at 1341.

634. See *id.*

635. See *id.* at 1341 & n.2.

636. See *id.* at 1342. The ire of the critics is directed not at the economic market power standard, but at the Ninth Circuit's alternative reliance on the presumption of market power from ownership of a copyright. See *id.* at 1341-42.

637. See *id.* at 1342 (Creating and testing a compatible system would require "millions of dollars and years of effort.").

638. See *In re Data General Corp. Antitrust Litigation*, 529 F. Supp. 801, 804 (N.D. Cal. 1981).

639. See *TWM Mfg. Co. v. Dura Corp.*, 789 F.2d 895, 900 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 852 (1986) (absence of noninfringing substitutes indicated by infringer's "election to infringe, despite having expended only minimal sums when notified of infringement"); *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1160 (6th Cir. 1978) (absence of substitutes and "uniquely favorable position" of patented product in relevant market were demonstrated by deliberate decision to infringe despite advice of counsel that "an expensive infringement suit was inevitable") (quoting *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1123 (S.D.N.Y. 1970), *modified*, 446 F.2d 295 (2d Cir. 1971), *cert. denied*, 404 U.S. 870 (1971)).

640. See *TWM*, 789 F.2d at 902 (Federal Circuit has "repeatedly affirmed enhanced awards based on findings of willful infringement"). Even if infringement is not willful, the provision of damages "in no event less than a reasonable royalty" in 35 U.S.C. § 284 merely establishes a floor below which damages may not fall. See *Stickle v. Heublein, Inc.*, 716 F.2d 1550, 1561 (Fed. Cir. 1983); *Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1568 (Fed. Cir. 1984); *Bandag, Inc. v. Gerrard Tire Co.*, 704 F.2d 1578, 1583 (Fed. Cir. 1983). "Reasonable" royalties are not intended to provide infringers with

frequently awarded to make the patentee whole in this "exceptional" case,⁶⁴¹ supporting the conclusion that most litigated patents clearly involve market power.⁶⁴²

Licensing activity by the patentee may provide the most direct evidence of market power, since any license directly states a conclusion about the availability and cost of substitutes for the patented product. In the absence of patent protection, a competitor would not be required to pay any royalty, and could choose freely between the patented technique and available substitutes.⁶⁴³ A royalty for this reason indicates a degree of coercion, or of "tribute" which the licensee is forced to pay to obtain the patented technology in preference to the closest available substitutes. If the economic critics are correct that most patents provide little market power, then there will be little interest in paying a royalty rather than using the substitutes which are assumed to be freely available.⁶⁴⁴ Extensive licensing activity provides virtual assurance that no legally nonequivalent substitutes are available in the relevant market, or that the desirability of the patented product is sufficiently great to "force" significant numbers of buyers in the market to pay the license premium over the market rate, in order to obtain the patented product.

This test may lead to the conclusion that all licensed patents confer

the equivalent of compulsory licenses, and the statutory scheme contemplates royalty awards sufficient to avoid this temptation. See *Fromson v. Western Litho Plate & Supply Co.*, 853 F.2d 1568, 1574-75 (Fed. Cir. 1988); *TWM*, 789 F.2d at 900; *Panduit*, 575 F.2d at 1158. For these reasons, royalties of 20 or even 30% of infringing sales are routinely affirmed in patent infringement cases. See *TWM* 789 F.2d at 899 (royalty of 30% on gross sales); *Bio-Rad Labs., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 617 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 1038 (1984) (reasonable royalty approaching one-third of selling price, where industry royalty rate runs from three to 10% of sales). See generally Skenyon and Porcelli, *Patent Damages*, 70 J. PAT. & TRADEMARK OFF. SOC'Y 762 (1988).

641. A finding of willfulness does not compel an award of increased damages under Section 284 or attorney fees under Section 285, but the Federal Circuit evidently approves of both remedies in the exercise of the district court's discretion when willful infringement is found. See *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 1580-81 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1034 (1987); *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 1428-29 (Fed. Cir. 1988). At least when willful infringement is found, the compensatory purpose of Section 285 is "best served if the prevailing party is allowed to recover his reasonable expenses in prosecuting the entire action." *Central Soya Co. v. George A. Hormel & Co.*, 723 F.2d 1573, 1578 (Fed. Cir. 1983) (quoting *Codex Corp. v. Milgo Elec. Corp.*, 541 F. Supp. 1198, 1201 (D. Mass. 1982)).

642. A good-faith belief that a patent is invalid or not infringed will not eliminate the clear risk of "reasonable royalty" damages considerably higher than any hypothetical royalty that would have been agreed to by willing parties absent litigation.

643. See *TWM*, 789 F.2d at 900 (absence of acceptable noninfringing substitutes indicated by infringer's "failure to design its own device, despite the alleged availability of other suspensions now characterized . . . as 'acceptable'").

644. See *Panduit*, 575 F.2d at 1160-61 (absence of substitutes indicated by infringer's continued manufacture after issuance of patent).

market power. This result is not unreasonable, particularly if potential infringers are aware of the risk of infringement under the doctrine of equivalents by functionally similar competing products. The proper question in such circumstances is whether the total value, including the risk factor, makes a competitor willing to pay a premium over the market price for a patented product.

In the absence of licensing activity, such as when the patentee refuses to license and exercises the prerogative of exclusive manufacture, evidence of the profit derived from the patented product may demonstrate market power, without evidence of market share or substitutes.⁶⁴⁵ Similarly, evidence of the infringer's profitability related to the accused product may indicate market power, and this evidence is generally available to an accused infringer who asserts patent misuse.⁶⁴⁶

An advantage of basing market power on licensing activity or hypothetical reasonable royalties is the courts' familiarity with these criteria. One of the most direct measures of market power in the patented product may be the reasonable royalty commonly determined in assessing patent infringement damages.⁶⁴⁷ If a court is able to determine that a hypothetically willing licensor and licensee would have agreed on a substantial "reasonable" royalty for the right to use the patented invention, it would be difficult to conclude that the patentee lacked market power.⁶⁴⁸ For this reason, a demand for substantial damages or lost profits may entail a significant risk for a patentee who imposes a tying arrangement, even under amended Section 271(d)(5).

645. See *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1111 (Fed. Cir. 1987) (70% profit on gross sales price of patented bottle loading fingers was reasonable estimate of lost profits); *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 22 (Fed. Cir. 1984) (61.8% cost rate reasonably fair estimate of lost profits); *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 1423 (Fed. Cir. 1988) (profit margin of 25% of dealer price).

646. See *TWM*, 789 F.2d at 899 (reasonable royalty of 30% based on infringer's 52.7% gross profit projection at time infringement began, rather than actual profit); *Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc.*, 761 F.2d 649, 653 (Fed. Cir.), *cert. denied*, 474 U.S. 902 (1985) (lost profits properly based on infringer's profits).

647. Under 35 U.S.C. § 284, the measure of damages for infringement may be either lost profits or a reasonable royalty, determined by reference to a hypothetical, arms-length negotiation between a willing licensor and licensee, that takes into account the facts of infringement and litigation. See *Stickle v. Heublein, Inc.*, 716 F.2d 1550, 1563 (Fed. Cir. 1983); *Bio-Rad Labs., Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 617 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 1038 (1984); *Studiengesellschaft Kohle, m.b.H. v. Dart Indus.*, 862 F.2d 1564, 1568, 1571 (Fed. Cir. 1988).

648. One recent survey of Federal Circuit law on infringement damages concludes that "reasonable royalty damages are almost always much higher and quite often bear little relationship to any royalty the parties would have actually agreed upon." Skenyon & Porcelli, *supra* note 640, at 763.

CONCLUSION:
AVOIDING A TRAGIC MISCONSTRUCTION
OF THE PATENT MISUSE AMENDMENT

If the availability of substitutes is employed as the measure of market power for patent misuse purposes, the determination of misuse will become inextricably intertwined with the elusive question of equivalents. This is undesirable because it would ensure that the former "threshold" defense of patent misuse could not be established without consideration of the legal equivalence of competing functional substitutes. Moreover, the simple misuse defense permitted in the past would seldom be presented without an antitrust counterclaim, where the sword of "market power" in a patented product hangs by the thread of equivalence over the patentee's head. The balance of terror imposed by damages up to three times the actual amount for patent infringement⁶⁴⁹ and treble damages under the antitrust laws would guarantee that patent infringement actions involving tying misuse defenses would become "more complicated and protracted, rather than simpler and shorter."⁶⁵⁰ The forty-five day trial limited to market power issues in *Digidyne*⁶⁵¹ would become the rule rather than the exception.

These considerations strongly support an alternative measure of market power for patent misuse, based not upon the elaborate antitrust analysis of market share in the relevant product market, but upon factors that would preserve the threshold character of the affirmative defense.

The same considerations also support the continued viability, if qualified,⁶⁵² of the presumption of market power in antitrust law from ownership of a patent. In particular, the difficulty of determining the scope of patent claims, and the inclusion of many competing functional substitutes under the doctrine of equivalents, support the presumption on the basis originally proposed by the courts: it avoids an incredibly protracted and often fruitless trial not only of economic facts,⁶⁵³ but of legal equivalence and patent construction.

To date, the economic criticism of the presumption has proceeded from highly simplified assumptions regarding the nature of patent rights, ignoring the practical difficulties of proof peculiar to patent issues. Congress and the courts would be justified in disregarding the economic model entirely, in favor of the established presumption, until a workable

649. See *supra* note 640.

650. Senator Leahy's apprehension that the patent misuse amendment might result in this "tragedy" is well-founded. See 134 CONG. REC. S17,149 (daily ed. Oct. 21, 1988).

651. *In re Data General Corp. Antitrust Litigation*, 529 F. Supp. 801, 804 (N.D. Calif. 1981).

652. See *supra* note 484.

653. See *supra* note 442.

model for determining market power in patented inventions is reduced to practice by the theoretical economic critics.