

The antitrust economics of tying: a farewell to per se illegality

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I. Introduction

Tying exists when the seller of a product requires his purchasers to take another product as well. The most robust statement one can make about tying is that it is ubiquitous. Consider the following examples: shoes are sold in pairs; hotels sometimes offer breakfast, lunch or dinner tied with the room; there is no such a thing as an unbundled car; and no self-respecting French restaurant would allow its patrons to drink a bottle of wine not coming from its cellar. In a certain sense, as Robert H. Bork noted in his famous book,

Every person who sells anything imposes a tying arrangement. This is true because every product or service could be broken down into

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smaller components capable of being sold separately, and every seller refuses at some point to break the product down any further. . . .¹

The other robust statement about tying is that it typically involves both costs and benefits. Tying may result in lower production costs. It may also reduce transaction and information costs for consumers and provide them with increased convenience and variety. The pervasiveness of tying in the economy shows that it is generally beneficial—it could not survive in competitive markets if it were not. Tying may also cause harm. This could happen when the tying firm enjoys monopoly power and tying leads to the exclusion of competitors; it could not happen when the tying firm lacks significant market power.

For a long period of time, competition laws on both sides of the Atlantic failed to recognize that tying involves costs *and* benefits. They have taken a hostile approach towards tying under the assumption that “tying agreements serve hardly any purpose beyond the suppression of competition.”² With the United States Supreme Court’s decision in *Jefferson Parish* in 1984, however, the United States law on tying adopted a modified per se illegality rule that recognizes the welfare enhancing effects of tying.³ In its 2001 decision in *Microsoft III*, the D.C. Circuit Court of Appeals, to take the efficiency effects of tying into account, adopted a rule of reason approach to the analysis of tying cases with respect to computer software platforms.⁴ European Community (EC) law has not

¹ ROBERT H. BORK, *THE ANTITRUST PARADOX* 378–79 (1978).

² *Standard Oil Co. of California et al. v. United States*, 337 U.S. 293, 305 (1949).

³ *Jefferson Parish Hospital Dist. No. 2 et al. v. Hyde*, 466 U.S. 2 (1984).

⁴ *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) [hereinafter *Microsoft III*]. The appeals court had heard two previous and somewhat related cases. *United States v. Microsoft Corp.*, 159 F.R.D. 318 (D.D.C. 1995), *rev’d*, 56 F.3d 1448 (D.C. Cir. 1995) [hereinafter *Microsoft I*] resulted in a consent decree, in which Microsoft agreed to end certain volume discounting practices and not to tie the sales of other products to Windows. In *United States v. Microsoft Corp.*, 980 F. Supp. 537 (D.D.C.

experienced a similar movement to a recognition that even firms with market power may enter into tying without harming and possibly benefiting consumers.⁵

In this article, we show that modern economic thinking supports a rule of reason approach toward tying. The argument is as follows: (1) Tying is so common in competitive markets that it must provide efficiencies; economic theory identifies many possible sources of these efficiencies. (2) The economic literature finds that tying may have anticompetitive effects (putting possible efficiencies to one side) when certain necessary conditions hold; market power is just one of those necessary conditions. (3) No economic theory finds that market power (or dominance) is a sufficient condition for tying to have anticompetitive effects; nor does any economic theory find that market power and the absence of separate demand are sufficient conditions for tying to have anticompetitive effects (the *Jefferson Parish* test). (4) One must conduct a factual analysis to determine whether tying has anticompetitive effects—economic theory by itself only says that tying *might be* anticompetitive (in the same sense that owning a knife might enable one to engage in lethal actions). (5) One must also conduct a factual analysis to determine whether tying has procompetitive effects—again economic theory by itself only says that tying *might be* efficient; however the pervasiveness of tying in competitive markets provides considerable support to the existence of these efficiencies generally. (6) A rule of reason analysis is the appropriate framework for conducting the factual analysis described in points (4) and (5).

1997), *rev'd*, 147 F.3d 935 (D.C. Cir. 1998) [hereinafter *Microsoft II*], the D.C. Circuit Court of Appeals found that Microsoft had not violated the consent decree because it was held that Windows was an integrated product of which Internet Explorer was a part.

⁵ Especially for multinationals the legal treatment of tying is important in these two jurisdictions. The U.S. accounted for 33% of global production in 2001 while the EU accounted for 25%. Percentages are based on authors' calculations. World Bank, *Total GDP 2001* (visited Jan. 27, 2003) <http://www.worldbank.org/data/databytopic/GDP.pdf>. Many companies have to design products and conduct themselves under the more restrictive of these two sets of laws since the cost of customizing to products and business practices can be prohibitive.

We have a modest proposal and a radical one. Our modest proposal is a three-step rule of reason analysis that screens out ties that could not be anticompetitive—because the necessary conditions do not hold—and then balances anticompetitive and procompetitive effects in the final stage. Our radical proposal is to make tying legal except in circumstances in which there is strong evidence that it harms consumers; this is modified per se legality. Our reasoning is that tying is generally efficient and that economists have provided the courts with little guidance on how to distinguish ties that, on net, are anticompetitive from those that are procompetitive. Therefore, society faces substantial risk that the courts will condemn many procompetitive ties in ferreting out the few anticompetitive ties.

The article proceeds as follows. In sections II and III, we describe the main features of U.S. and EC tying law and consider their recent evolution, or lack thereof. Section IV compares the approach to tying on both sides of the Atlantic and explains their differences. In section V, we review the economic literature on tying and summarize its main implications for the analysis of tying cases. In section VI, we consider the advantages and disadvantages of rules that range from per se illegality at one extreme to per se legality at the other extreme. We explain why either our modest or our radical proposal are superior to the modified per se illegality rule that is currently employed on both sides of the Atlantic. Section VII concludes.

II. U.S. case law: from per se illegality to rule of reason

Tying under U.S. law has been defined as “an agreement by a party 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.”⁶

The assessment of tying arrangements under U.S. antitrust law has undergone significant changes over time. We can distinguish at least three different approaches. First, the early period of the per se approach: early cases reflect a strong hostility toward tying

⁶ Northern Pacific Railway Co. et al. v. United States, 356 U.S. 1, 5-6 (1958).

arrangements that were regarded as having no redeeming features, “[serving] hardly any purpose beyond the suppression of competition.”⁷ Second, the modified per se illegality approach: *Jefferson Parish* moved to an approach in which the criteria for tying are used as proxies for competitive harm and, arguably, efficiencies.⁸ Third, the rule of reason approach: *Microsoft III* introduced a rule of reason approach toward tying, recognizing that, at least in certain circumstances,⁹ even the modified per se approach would lead to an overly restrictive policy toward tying arrangements.

A. *The per se illegality approach*

Early cases viewed tying arrangements largely as a means of restricting competition, with few, if any, redeeming features. In *United States Steel v. Fortner*, the Court held that tying arrangements “generally serve no legitimate business purpose that cannot be achieved in some less restrictive way.”¹⁰

*Northern Pacific Railway v. United States*¹¹ is a good example of the early approach. The railroad was the owner of millions of acres of land in several Northwestern States and territories. In its sales and lease agreements regarding this land, Northern Pacific had inserted “preferential routing” clauses. These clauses obliged purchasers or lessees to use Northern Pacific for the transportation of goods produced or manufactured on the land, provided that Northern Pacific rates were equal to those of competing carriers.

The Supreme Court took the view that Northern Pacific had significant market power. Not only was its land “strategically located

⁷ *Standard Oil Co. et al. v. United States*, 337 U.S. 293, 305–06 (1949).

⁸ *Jefferson Parish Hospital Dist. No. 2 et al. v. Hyde*, 466 U.S. 2 (1984).

⁹ See *Microsoft III*, *supra* note 4.

¹⁰ *United States Steel Corp. et al. v. Fortner Enterprises*, 394 U.S. 495, 503 (1969).

¹¹ *Northern Pacific Railway Co. et al. v. United States*, 356 U.S. 1 (1958).

in checkerboard fashion amid private holdings and within economic distance of transportation facilities” but “[t]he very existence of this host of tying arrangements is itself compelling evidence of [Northern Pacific’s] great power, at least where, as here, no other explanation has been offered for the existence of these restraints.”¹² It concluded that the preferential routing clauses amounted to illegal tying.¹³

1. THE ELEMENTS OF THE PER SE APPROACH Given the assumption that tying had no redeeming features, a per se prohibition was an almost inevitable policy conclusion: any tying arrangement by a seller with significant market power in the market for the tying product was per se illegal provided the effects of the arrangements in the market of the tied product exceeded a certain de minimis threshold (“a ‘not insubstantial’ amount of commerce”).¹⁴

(a) *Market power* Despite the fact that tying has generally been considered under section 1, rather than section 2, of the Sherman Act,¹⁵ a certain degree of market power by the seller in the market of the tying product has consistently been one of the prerequisites of illegal tying. The seller’s market power did not, however, have to amount to monopoly power within the meaning of section 2 of the Sherman Act. According to the Supreme Court, the relevant question was whether “a party has sufficient economic power with respect to the tying product to appreciably restrain free competition in the market for the tied product.”¹⁶

“Sufficient economic power” could be established in a number of ways, not all of which were related to the concept of market power.

¹² *Id.* at 8–9.

¹³ *Id.*

¹⁴ *Jefferson Parish Hospital Dist. No. 2 et al. v. Hyde*, 466 U.S. 2, 16 (1984); *Northern Pacific Railway Co. et al. v. United States*, 356 U.S. 1, 11 (1958).

¹⁵ *See* 15 U.S.C. §§ 1, 2 (2002); 15 U.S.C. § 14 (2002); and 15 U.S.C. § 45 (2002).

¹⁶ *Northern Pacific Railway Co. et al. v. United States*, 356 U.S. 1, 2 (1958).

Early Supreme Court cases¹⁷ were concerned with sellers forcing customers to accept unpatented products in order to be able to use a patent monopoly, and the patent rights were deemed to give the seller "sufficient economic market power." In later cases, "sufficient economic power" was "inferred from the tying product's desirability to consumers or from uniqueness in its attributes"¹⁸ or from the fact that "the seller has some advantage not shared by his competitors;"¹⁹ and as mentioned earlier, in *Northern Pacific Railway v. United States* the mere "existence of [a] host of tying arrangements in itself"²⁰ was regarded as "compelling evidence of [a firm's] great power"²¹ in the absence of other explanations. Not surprisingly, in this case, the Court did not take the preliminary step of defining the relevant market.

(b) *Tying arrangements* Firms with significant market power were prohibited from entering into tying arrangements, i.e. to force customers to purchase a tied product along with the "separate" tying product. The firms were subject to this prohibition independently of any anticompetitive effects or efficiency gains. In what follows, we first address what it means to have "two separate products" and then what it means to "force" a purchase.

In early cases, tying involved products that were intuitively separate, such as land and transport services²² or projectors and motion pictures²³ and, as the court of appeals in *Microsoft III* pointed out, "[t]he requirement that a practice involve two separate products before being

¹⁷ *International Salt Co., Inc. v. United States*, 332 U.S. 392, 395-96 (1947); *International Business Machines Corp. v. United States*, 298 U.S. 131 (1936).

¹⁸ *United States v. Loew's Inc. et al.*, 371 U.S. 38, 45 (1962).

¹⁹ *United States Steel Corp. et al. v. Fortner Enterprises, Inc.*, 429 U.S. 610, 620-21 (1977).

²⁰ *See Northern Pacific Railway Co. et al. v. United States*, 356 U.S. 1, 8 (1958).

²¹ *Id.*

²² *Id.*

²³ *Motion Picture Patents Co. v. Universal Film Manufacturing Co. et al.*, 243 U.S. 502 (1917).

condemned as an illegal tie started as a purely linguistic requirement: unless products are separate, one cannot be 'tied' to the other."²⁴

In subsequent cases, the issue of separate products arose but was addressed in an ad hoc manner—on the basis of a wide range of different factors, such as whether the bundled products were generally sold "as a unit with fixed proportions,"²⁵ whether components are charged separately, or whether other players in the industry sell products individually or as a bundle.²⁶ The courts did not develop any systematic standard, nor did their analysis take into account the underlying policy considerations of tying, such as foreclosure and efficiencies.

Establishing "separate products" is not enough, however. A key element of tying "is the forced purchase of a second distinct commodity;"²⁷ in other words, what distinguishes illegal tying from legal bundling is the "seller's exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all or might have preferred to purchase elsewhere on different terms."²⁸ Where the buyer is given the option to purchase products individually or as a bundle, and the option to purchase individual products is economically feasible, no tying occurs.

(c) *A substantial amount of commerce in the tied product* For a tying arrangement to be illegal under the per se approach, "a 'not insubstantial' amount of interstate commerce"²⁹ in the tied product had to be affected. The Supreme Court said that the relevant question was "whether a total amount of business substantial enough in terms of dollar volume so as not to be merely *de minimis*, is foreclosed to

²⁴ *Microsoft III*, *supra* note 4, at 128.

²⁵ *Arlie Mack Moore et al. v. Jas. H. Matthews & Co. et al.*, 550 F.2d 1207, 1215 (9th Cir. 1977).

²⁶ *Times-Picayune Publishing Co. et al. v. United States*, 345 U.S. 594, 614 (1953).

²⁷ *Id.*

²⁸ *Jefferson Parish Hospital Dist. No. 2 et al. v. Hyde*, 466 U.S. 2, 12 (1984).

²⁹ *Id.* at 2.

competitors by the tie-in.”³⁰ In *United States v. Loew’s*, for example, the Supreme Court held that as little as \$60,000 was not insubstantial.³¹

(d) *Exceptional justifications and defenses* U.S. courts have, in certain circumstances, accepted justifications for tying arrangements that would otherwise be caught by the prohibition. During the development period of a new industry, a tying arrangement was held to be justified for a limited period on the basis that selling an integrated system would help in assuring the effective functioning of the complex equipment.³² The Supreme Court also held, however, that the protection of goodwill may not serve as a defense for tying the purchase of supplies to a leased machine where such protection can be achieved by less restrictive means, e.g. through quality specifications to third parties.³³

2. THE PER SE ILLEGAL APPROACH IN CONTEXT Under the per se illegality approach, the courts accepted that some form of economic or market power was a necessary condition for harmful tying. In light of their assumption that tying did not have any redeeming features, they did not address whether market power was also a sufficient condition. Nor did they appear to have recognized that tying was a ubiquitous phenomenon among firms with little or no market power and therefore must have served some “purpose beyond the suppression of competition.”³⁴

Nevertheless, the hostility against tying was largely directed against contractual tying while technological integration frequently escaped the per se prohibition. In *ILC Peripherals Leasing v. IBM*,³⁵ for example, IBM’s integration of magnetic discs and a head/disc

³⁰ *Fortner Enterprises, Inc. v. United States Steel Corp. et al.*, 394 U.S. 495, 501 (1969).

³¹ This figure is \$361,461 in 2002 U.S. dollars. *United States v. Loew’s Inc. et al.*, 371 U.S. 38, 49 (1962).

³² *Jerrold Electronics Corp. et al. v. United States*, 365 U.S. 567 (1961).

³³ *Id.*

³⁴ *Standard Oil Co. of California et al. v. United States*, 337 U.S. 293, 305–06 (1949).

³⁵ *See ILC Peripherals Leasing Corp. v. International Business Machines Corp.*, 448 F. Supp. 228, 233 (N.D. Cal. 1978).

assembly was not held to amount to an unlawful tying arrangement. Similarly, IBM in the 1970s integrated memory into its CAUs platform. IBM was challenged by a peripheral manufacturer. The district court dismissed the tying claim on the basis that courts were not well placed to decide on product design decisions.³⁶

The hostile approach toward tying was revised in *Jefferson Parish*, where the Supreme Court accepted that tying could have some merit and struggled to devise a test that distinguished good tying from bad tying.

B. The modified per se approach

In *Jefferson Parish*³⁷ four Justices sought a rule of reason approach.³⁸ Five Justices coalesced around an approach that kept the per se prohibition but made some significant nods toward recognizing efficiencies. The majority view seems to have been influenced more by deference to precedent rather than a conviction that a per se prohibition was the most appropriate way to deal with tying arrangements. The *Jefferson Parish* case concerned the tying of hospital services and anesthesiological services. In 1977 Edwin Hyde, an anesthesiologist, applied for admission to the medical staff of East Jefferson Hospital. The hospital denied the application as it had entered into an agreement with Roux & Associates (Roux), a professional medical corporation, to provide all of the hospital's anesthesiological services. Dr. Hyde then sued East Jefferson Hospital, among others, under section 1 of the Sherman Act, seeking an injunction to compel his admission to the medical staff. The decisions by the various courts that considered this arrangement turned on whether the hospital had market power. The Supreme Court and the trial court concluded that it did not, but the Supreme Court took this case as an opportunity to reconsider the per se approach.

³⁶ See *Telex Corp. v. International Business Machines Corp.*, 367 F. Supp. 258 (N.D. Okla. 1973).

³⁷ *Jefferson Parish Hospital Dist. No. 2 et al. v. Hyde*, 466 U.S. 2 (1984).

³⁸ Justice O'Connor, with whom Chief Justice Burger, Justice Powell and Justice Rehnquist joined, argued for the contract to be analyzed under the rule of reason.

1. THE ELEMENTS OF THE MODIFIED PER SE APPROACH (a) *The tying criteria as proxies for competitive harm* Contrary to the early cases, the Supreme Court in *Jefferson Parish* recognized that tying may, at least in certain circumstances, be welfare enhancing:

[N]ot every refusal to sell two products separately can be said to restrain competition. If each of the products may be purchased separately in a competitive market, one seller's decision to sell the two in a single package imposes no unreasonable restraint on either market, particularly if competing suppliers are free to sell either the entire package or its several parts. . . . Buyers often find package sales attractive; a seller's decision to offer such packages can merely be an attempt to compete effectively—a conduct that is entirely consistent.³⁹

At the same time, the majority opinion of the Supreme Court in *Jefferson Parish* felt compelled to continue to work on the basis of a per se prohibition of tying arrangements:

It is far too late in the history of our antitrust jurisprudence to question the proposition that certain tying arrangements pose an unacceptable risk of stifling competition and therefore are unreasonable "*per se*."⁴⁰

Caught between these propositions the Court tried to fence in the per se rule. It focused on the underlying rationale of the rule against tying, namely impairing competition on the merits in the tied market, and approached the definitional questions in relation to the tying criteria (e.g. whether two separate products were involved or whether the seller had market power in the tying market) from the position of "whether the arrangement may have the type of competitive consequences addressed by the rule."⁴¹ In effect, the criteria for illegal tying were used as proxies for anticompetitive harm to provide a safe harbor for some tying arrangements and to thereby screen out some false positives.

Starting with the question, "whether there is a possibility that the economic effect of the arrangement is that . . . petitioners have foreclosed competition on the merits in a product market distinct from

³⁹ *Jefferson Parish Hospital Dist. No. 2 et al. v. Hyde*, 466 U.S. 2, 19 (1984).

⁴⁰ *Id.* at 14.

⁴¹ *Id.* at 21.

the market for the tying product,"⁴² the Supreme Court rejected an approach that relied on the functional relationship to determine whether one or two products were involved. Instead, the Court focused on the character of demand for the two products:

[I]n this case, no tying arrangement can exist unless there is a sufficient demand for the purchase of anesthesiological services separate from hospital services to identify a distinct product market in which it is efficient to offer anesthesiological services separately from hospital services.⁴³

To answer the question whether there is sufficient demand for the tied product separately from demand for the tying product, the Supreme Court looked at actual market practice for hospitals that did not insist on providing a package including anesthesiological services. It found that patients frequently request separate anesthesiological services and concluded, "the hospital's requirement that its patients obtain necessary anesthesiological services from Roux combined the purchase of two distinguishable services in a single transaction."⁴⁴

The use of the tying criteria as proxies for competitive harm also led the Supreme Court to use a definition of economic power that was more focused on the economic concept of market power: "[W]e have condemned tying arrangements where the seller has some special ability—usually called 'market power'—to force a purchaser to do something that he would not do in a competitive market."⁴⁵

In *Jefferson Parish*, a 30% market share led the Court to conclude that the defendant did not have the requisite market power.⁴⁶ That is how the hospital escaped per se illegality.

(b) *The separate-product test as a proxy for efficiencies* While the Supreme Court in *Jefferson Parish* viewed its separate-product test predominantly as a proxy for competitive harm (on the basis that tying arrangements do not foreclose manufacturers of tied products if

⁴² *Id.*

⁴³ *Id.* at 22.

⁴⁴ *Id.* at 24.

⁴⁵ *Id.* at 13–14.

⁴⁶ *Id.* at 7–8.

there is no consumer demand for the stand-alone tied products in the first place), the court of appeals in *Microsoft III* pointed out that the separate-product test could also be viewed as a proxy for the net welfare effect of a tying arrangement. The reasoning of the court of appeals runs along the following lines:

First, consumers value choice: "assuming choice is available at zero cost, consumers will prefer it to no choice."⁴⁷ For consumers to relinquish choice and to buy products as a bundle, bundling must provide efficiencies (e.g. reduced transaction costs or better performance) that compensate for the reduction in choice.

Second, the share of consumers buying a bundle rather than individual products gives an indication of the relative strengths of the tying efficiencies compared to the benefits of choice. Where all (or almost all) consumers prefer to buy bundles, there is a strong presumption that the tying efficiencies dominate the consumer choice benefits.

Third, "[o]n the supply side, firms without market power will bundle two goods only when cost savings from joint sale outweigh the value consumers place on separate choice. So bundling by all firms implies strong net efficiencies."⁴⁸

2. THE MODIFIED PER SE APPROACH IN CONTEXT *Jefferson Parish* was followed by *Eastman Kodak v. Image Technical Services*,⁴⁹ which dealt with the claim that Kodak had illegally tied the sale of replacement parts for its high-volume photocopier and micrographics equipment (tying product) to the purchase of Kodak's repair services (tied product). The Supreme Court accepted the possibility of illegal tying even in the absence of market power in the primary market, significantly expanding the scope of illegal tying.⁵⁰ At the same time however, the Court in *Kodak* confirmed the modified per se rule and the separate-products test developed in *Jefferson Parish*.

⁴⁷ *Microsoft III*, *supra* note 4, at 135.

⁴⁸ *Id.* at 135.

⁴⁹ *Eastman Kodak Co. v. Image Technical Services, Inc. et al.*, 504 U.S. 451 (1992).

⁵⁰ *Id.*

The modified per se approach under *Jefferson Parish* and *Kodak* clearly raised the standard for establishing illegal tying and reduced the risk of false positives. Nevertheless, it remained fundamentally a per se approach. It did not assess the impact of the individual tying arrangements in the circumstances of a given case. Moreover, it assumed that on average the competitive harm of tying arrangements is greater than their efficiency gains, at least where the criteria for tying were satisfied. A closer look at when this assumption is likely to hold is warranted.

As we have seen above, the separate-product test acts as a proxy for the effects of tying arrangements on both harm to competitors and consumer welfare. If the separate-product test is not satisfied (i.e. there is no separate demand for the "tied" product), then this leads to the conclusion that (1) there is no competitive harm, given that there is no separate market for tied products that could be foreclosed, and (2) tying is welfare enhancing (otherwise consumers would request products separately). Conversely, if the separate-product test is satisfied, it leads to the conclusion that there could be some competitive harm,⁵¹ and that tying is unlikely to be welfare enhancing.

It is important to note, however, the asymmetric strengths of the conclusion for a negative and positive result of the separate-product test. A negative result of the separate-product test leads to strong conclusions regarding competitive harm and efficiencies, neither of which is dependent on particular assumptions (namely that there can be no competitive harm, and that tying must be motivated by significant efficiencies). A positive result does not lead to any particular conclusion about competitive harm (other than that the possibility exists). Indeed, the fact that there is separate demand for the "tied" product (i.e. that customers are willing to purchase the "tied" product separately, and that some firms are offering the "tied" product separately) allows only the conclusion that tying is not efficient if both of two conditions hold.

⁵¹ Whether competitive harm can be expected is then considered in the second test under *Jefferson Parish*, namely the test of forcing through market power.

First, the market for the tied product is static and not, for example, characterized by innovation. This condition is due to the fact that the separate-product test (both as consumer demand test and as industry custom test) is backward looking, or as the court of appeals put it in *Microsoft III*:

The direct consumer demand test focuses on historic consumer behavior, likely before [technological tying], and the industry custom test looks at firms that, unlike the [tying firm] may not have integrated the tying and the tied goods. Both tests compare incomparables—the [tying firm's] decision to bundle in the presence of integration, on the one hand, and the consumer and competitor calculations in its absence, on the other.⁵²

The more dynamic the industry, the greater the expected error of the separate-product test under *Jefferson Parish*.

The second condition is that all firms in the market for the tied products have similar characteristics (for example similar cost structure) and operate in similar circumstances (e.g. have a similar client base). Without this condition it would not be possible to draw any conclusions from the fact that the majority of firms in a particular market did or did not bundle certain products, as any difference in strategy could be attributable to differences in characteristics or circumstances.

In practice, most industries do not satisfy the above conditions. This is particularly true for the software industry, which is characterized by a high degree of innovation as well as considerable asymmetry in the characteristics and circumstances of the market players. *Microsoft III* was therefore a case predestined to highlight the weakness of the modified per se approach under *Jefferson Parish* due to the underlying assumptions.

C. The rule of reason approach in *Microsoft III*

The U.S. Department of Justice and 21 states raised a number of antitrust charges against Microsoft, ranging from monopoly leveraging to monopoly maintenance and exclusive distribution.⁵³ The

⁵² *Microsoft III*, *supra* note 4, at 140.

⁵³ See *United States v. Microsoft Corp.*, Civil Action Nos. 98-1232 and 98-1233 (TPJ), Direct Testimony of Frederick R. Warren-Boulton, Nov. 18, 1998, at 19-28, 40-60.

plaintiffs also alleged that Microsoft had violated U.S. antitrust law by contractually and technologically bundling the Internet Explorer (IE) with its Windows operating system.⁵⁴

The district court, applying the test under *Jefferson Parish*, held that the combination of IE and Windows met the *Jefferson Parish* conditions and was therefore illegal. The court of appeals rejected the *Jefferson Parish* test and concluded that software platforms such as Windows, should be subject to a rule of reason balancing anticompetitive effects and efficiencies.⁵⁵ In particular the court of appeals held "that integration of new functionality into platform software is a common practice and that wooden application of *per se* rules in this litigation may cast a cloud over platform innovation for PCs, network computers and information appliances."⁵⁶

1. THE RULE OF REASON APPROACH The court of appeals challenged the district court's application of the modified *per se* rule under *Jefferson Parish* on two grounds: first, at a general level, that a *per se* rule was inappropriate in cases like *Microsoft III* which raised a number of novel issues; second, and more specifically, that the separate-product test of the modified *per se* rule developed under *Jefferson Parish* could not be relied on in this case.

(a) *Per se* rule inappropriate in the *Microsoft III* case The court of appeals referred to the Supreme Court's decision in *Broadcast Music, v. CBS*,⁵⁷ which had warned, "[i]t is only after considerable

⁵⁴ See *United States v. Microsoft Corp.*, Civil Action Nos. 98-1232 and 98-1233 (TPJ), Direct Testimony of Franklin M. Fisher, Jan. 5, 1999, at ¶¶ 79-81.

⁵⁵ *Microsoft III*, *supra* note 4.

⁵⁶ *Id.* at 159. Microsoft proposed a test that a three-judge panel of the court of appeals had used to analyze software integration under a consent decree that Microsoft had entered into with the Justice Department to settle a previous case. That test stated that technological tying is presumed legal if the defendant can show a "plausible claim" of benefits from the tie. See *id.* The court, sitting en banc, rejected this as well.

⁵⁷ *Broadcast Music, Inc. et al. v. Columbia Broadcasting System, Inc. et al.*, 441 U.S. 1 (1979).

experience with certain business relationships that courts classify them as *per se* violations.”⁵⁸ According to the court, the overwhelming share of tying cases dealt with by the Supreme Court had involved either the conditioning of the sale or lease of a potential product on the purchase of certain unpatented products (such as *IBM v. U.S.*) or contractual ties (such as *Northern Pacific Railway v. U.S.*).⁵⁹

The *Microsoft III* case, however, was fundamentally different from the tying cases so far addressed by the Supreme Court in at least two respects:

1. “[i]n none of the cases was the tied good physically and technologically integrated with the tying good;”⁶⁰ and
2. the argument was raised that the “tie improved the value of the tying product to users and to makers of the complementary goods.”⁶¹

As a result of these specific characteristics, certain of the general policy conclusions, such as that the efficiencies of tying could be achieved by other less restrictive means, were questionable:

Microsoft argues that Internet Explorer (IE) and Windows are an integrated physical product and that bundling of IE Application Program Interfaces (APIs) with Windows makes the latter a better applications platform for third-party software. It is unclear how the benefits from IE APIs could be achieved by quality standards for different browser manufacturers.⁶²

While the court of appeals did not take any view on the validity of the efficiency claims, it came to the conclusion that

judicial “experience” provides little basis for believing that, “because of their pernicious effect on competition and lack of any redeeming virtue” a software firm’s decisions to sell multiple functionalities as a package should be “conclusively” presumed to be unreasonable and

⁵⁸ *Microsoft III*, *supra* note 4, at 124 quoting *United States v. Topco Assocs., Inc.*, 405 U.S. 596, 607–08 (1972).

⁵⁹ *Id.* at 141–43.

⁶⁰ *Id.* at 144.

⁶¹ *Id.*

⁶² *Id.*

therefore illegal without elaborate inquiry as to the precise harm that they have caused or the business excuse for their use.⁶³

(b) *Failure of the product test as a proxy for efficiencies* As described earlier, the separate-product test of *Jefferson Parish* operates under very narrow assumptions; in particular that all competitors are in a similar situation and that the markets are static. These assumptions seemed to be particularly inappropriate in the case of *Microsoft III*. According to Microsoft, the reason why none of its competitors' products required nonremoval of the Internet browser was that none of them had invested the resources to integrate Web browsing as deeply into its operating system as Microsoft.⁶⁴ Microsoft also contended that the integration of IE into Windows was innovative and beneficial.⁶⁵

The court of appeals argued that the "*per se* rule's direct consumer demand and direct industry custom inquiries are, as a general matter, backward looking and therefore systematically poor proxies for overall efficiencies in the presence of new and innovative integration."⁶⁶ It therefore concluded:

In fact there is merit to Microsoft's broader argument that *Jefferson Parish*'s consumer demand test would "chill innovation to the detriment of consumers by preventing firms from integrating into their products new functionality previously provided by standalone products—and hence, by definition, subject to separate consumer demand."⁶⁷

The D.C. Circuit remanded the government's tying claim to the district court to be considered under the rule of reason.⁶⁸ The government decided to drop the claim.⁶⁹ An appeal of the tying

⁶³ *Id.*

⁶⁴ *Id.* at 138.

⁶⁵ *Id.* at 139.

⁶⁶ *Id.* at 140.

⁶⁷ Microsoft Corporation's Appellate Brief at 69, *quoted in Microsoft III, supra* note 4, at 139.

⁶⁸ *Microsoft III, supra* note 4.

⁶⁹ *Id.*

decision to the Supreme Court seems highly remote as the case has evolved.⁷⁰

2. THE RULE OF REASON IN CONTEXT U.S. antitrust policy towards tying had a long journey from the hostile approach of the early per se rule to a modified per se rule willing to consider the possibility of tying efficiencies (with four Justices in favor of a rule of reason) under *Jefferson Parish*, to a neutral position under the *Microsoft III* rule of reason.

This journey is not yet over. *Jefferson Parish* still represents the general position with respect to tying, as the scope of *Microsoft III* was limited by the court of appeals to product integration in “platform software markets” and only then, as a matter of law, in the D.C. Circuit. The overall direction of the journey, however, has been made clear, and *Microsoft III* is unlikely to be the final stop, as the criticism of the court of appeals concerning *Jefferson Parish* is of a general and universal nature.

III. EC tying law: old cases, old ideas

Contrary to U.S. law, the issue of tying under EC law has been addressed largely in the context of the control of unilateral behavior of dominant firms, although tying may also fall within the scope of the control of restrictive agreements.⁷¹

Paradoxically, the fact that the U.S. and the EU have used different policy instruments to deal with tying (control of restrictive

⁷⁰ The Justice Department and nine states entered into a consent decree with Microsoft that the court approved after a Tunney Act hearing. Nine states and the District of Columbia sought further relief that was denied. Two of those nine states are pursuing an appeal. However, since all plaintiffs agreed to drop the tying claim it would not appear that the claim could be the basis for any appeal to the Supreme Court. See Memorandum Opinion and Order, *United States v. Microsoft*, 2002 U.S. Dist. LEXIS 22861 (Nov. 12, 2002) (No. 98-1232); and Memorandum Opinion, Final Judgment, and Order, *New York v. Microsoft Corp.*, 2002 U.S. Dist. LEXIS 22854 (Nov. 18, 2002) (No. 98-1233).

⁷¹ See, e.g., EUROPEAN COMMISSION, GUIDELINES ON VERTICAL RESTRAINTS (2000/C291/01).

agreements under section 1 of the Sherman Act⁷² in the U.S. versus the dominance provision under article 82⁷³ in the EU) has led to a close proximity of the two analytical frameworks. This is partly because the requirement of "sufficient market power" of the tying firm under U.S. law matches more closely the standard of dominance under EC law than the concept of monopoly power under section 2 of the Sherman Act.⁷⁴ Above the level of sufficient market power/dominance, both systems scrutinize tying arrangements.

A comparison between tying under U.S. and EC competition law, however, faces an important handicap, namely that the European Commission and the European Court have dealt with tying in a very small number of cases, none of which is particularly recent.

A. *EC case law*

1. DECISIONS The Commission has issued three negative decisions concerning tying.⁷⁵ All three involved contractual tying, two of which deal with the tying of consumables to the primary product.⁷⁶

*Napier Brown/British Sugar*⁷⁷ The case arose from a complaint by Napier Brown, a sugar merchant in the United Kingdom, which alleged that British Sugar, the largest producer and seller of sugar in the U.K., was abusing its dominant position in an attempt to drive Napier Brown out of the U.K. sugar retail market. In the subsequent

⁷² See 15 U.S.C. § 1 (2002).

⁷³ See TREATY ESTABLISHING THE EUROPEAN COMMUNITY, 1997 O.J. (C 340) 173, at article 82.

⁷⁴ See 15 U.S.C. § 2 (2002).

⁷⁵ *Napier Brown v. British Sugar*, Commission Decision 88/519/EEC, 1988 O.J. (L 284) 41 [hereinafter *Napier Brown/British Sugar*]; *Eurofix-Bauco v. Hilti*, Commission Decision 88/138/EEC, 1988 O.J. (L 065) 19 [hereinafter *Eurofix-Bauco/Hilti*]; *Tetra Pak II*, Commission Decision 92/163/EEC, 1992 O.J. (L 072) 1 [hereinafter *Tetra Pak II*].

⁷⁶ *Eurofix-Bauco/Hilti*, *supra* note 75; *Tetra Pak II*, *supra* note 75.

⁷⁷ *Napier Brown/British Sugar*, *supra* note 75.

proceedings, the Commission objected, among other things, to British Sugar's practice of offering sugar only at delivered prices so that the supply of sugar was, in effect, tied to the services of delivering the sugar.

Having concluded that British Sugar was dominant in the market for "white granulated sugar for both retail and industrial sale in Great Britain,"⁷⁸ the Commission took the view that "reserving for itself the separate activity of delivering the sugar which could, under normal circumstances be undertaken by an individual contractor acting alone"⁷⁹ amounted to an abuse. According to the Commission, the tying deprived customers of the choice between purchasing sugar on an ex factory and delivered price basis "eliminating all competition in relation to the delivery of the products."⁸⁰

*Eurofix-Bauco/Hilti*⁸¹ The *Hilti* case dealt with certain power-actuated fastening (PAF) systems, used in the construction industry. At the time of the investigation, Hilti was the largest manufacturer of nail guns in the European Union (with a share of a little over 50%). Nail guns use nails and cartridge strips, which are specifically adapted to a particular brand of nail gun. Hilti had patent protection for its guns, its cartridge strips and its nails.⁸² This patent protection had not prevented, however, several manufacturers from producing a range of nails having similar characteristics for specific use in Hilti nail guns.

Competing nail producers complained to the Commission that Hilti was engaging in abusive actions that, they claimed, had severely limited their penetration into the market for Hilti-compatible nails.

⁷⁸ *Id.* ¶ 60, at 47.

⁷⁹ *Id.* ¶ 71, at 46.

⁸⁰ *Id.*

⁸¹ *Eurofix-Bauco/Hilti*, *supra* note 75.

⁸² *Id.* Hilti's patent protection for nail guns was due to expire between 1986 and 1996, depending on the country and patent feature involved. Hilti also obtained patents for certain nails in all member states except Denmark. At the time of the investigation these patents had expired in some member states and were due to expire in all member states by 1988.

These practices included, among other things, the tying of the sale of nails to the sale of cartridge strips, the refusal to honor guarantees where customers used third-party nails in their Hilti guns, the refusal to supply cartridge strips to customers who might resell them, and “frustrating or delaying legitimately available licenses of right available under Hilti’s patents.”⁸³

In its analysis, the Commission identified three different product markets, namely (1) nail guns, (2) Hilti-compatible cartridge strips and (3) Hilti-compatible nails.⁸⁴ It took the view that Hilti was dominant in all three relevant markets.⁸⁵ The Commission then concluded that tying the sale of cartridge strips to the sale of nails constituted an abuse of the dominant position:

These policies leave the consumer with no choice over the source of his nails and *as such* abusively exploit him. *In addition*, these policies all have the object or effect of excluding independent nail makers who may threaten the dominant position Hilti holds.⁸⁶

The Commission also came to a conclusion of abuse regarding Hilti’s restriction of its guarantee:

Whilst it may be legitimate not to honour a guarantee if a faulty or sub-standard non-Hilti nail causes malfunctioning, premature wear or breakdown in a particular case, such a general policy in the circumstances of this case amounts to an abuse of a dominant position, in that it is yet another indirect means used to hinder customers from having access to different sources of supply.⁸⁷

Hilti argued that its business practices were motivated by safety and reliability concerns. The Commission rejected these arguments in the circumstances of the case and, furthermore, questioned whether safety and reliability could ever be regarded as an objective justification for an otherwise abusive behavior.⁸⁸ Hilti appealed to the Court of First

⁸³ *Id.* ¶ 98.

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.* ¶ 75 (emphasis added).

⁸⁷ *Id.* ¶ 79.

⁸⁸ *Id.*

Instance, which upheld the Commission's decision.⁸⁹ A further appeal by Hilti to the European Court of Justice was also unsuccessful.⁹⁰

*Tetra Pak II*⁹¹ This case also concerned the tying of consumables to the sale of the primary product. Tetra Pak, the major supplier of carton packaging machines and materials required purchasers of its machines to agree also to purchase their carton requirements from Tetra Pak. The Commission, upheld by the Court,⁹² condemned the tying as abuse of a dominant position.

2. OTHER CASES In addition, the Commission has dealt with a number of tying cases in which the company under investigation abandoned the alleged tying behavior and no formal decision was taken. Of particular interest is the *IBM* case,⁹³ which raised the issue of product integration (or technological tying).

In December 1980, the Commission opened proceedings under article 82 (then article 86) into IBM's business practices with regard to its mainframe computers, the System/370. It alleged that IBM held a dominant position in the common market for the supply of the two key products for the System/370, namely the central processing unit (CPU) and the operating system, as a result of which IBM was able to control the market for the supply of all products compatible with the System/370. The Commission challenged, among other things,⁹⁴ IBM's integration of memory devices with the CPU and the bundling with the

⁸⁹ Case T-30/89, Hilti AG v. Commission 1990 E.C.R. II-163.

⁹⁰ Case C-53/92P, Hilti AG v. Commission 1994 E.C.R. I-667.

⁹¹ *Tetra Pak II*, *supra* note 75.

⁹² Case T-83/91, *Tetra Pak II*, 1994 E.C.R. II-755.

⁹³ EUROPEAN COMMISSION, FOURTEENTH REPORT ON COMPETITION POLICY point 94, [1984] 3 C.M.L.R. 147.

⁹⁴ IBM was also accused of (a) failing to supply the manufacturers in sufficient time with the technical information needed to permit competitive products to be used with System/370; (b) not offering System/370 CPUs without the basic software included in the price (software tying); and (c) discriminating between users of IBM software, i.e. refusing to supply certain software installation services to users of non-IBM CPUs.

basic software applications. In April 1983, the Commission started informal discussions with IBM in parallel with the formal proceedings; these informal discussions ultimately led to a settlement of the case. In August 1984, IBM undertook to offer its System/370 CPUs in the EU either without memory devices or with the minimum capacity required for testing⁹⁵ and the Commission accepted the IBM undertakings.

Soon after the settlement in the IBM case, the integration of the CPU and main memory devices as part of a single product became standard practice in the computer industry.

B. Analysis of tying under EC law

As mentioned earlier, it is difficult to assess the EC policy of tying on the basis of a mere handful of (slightly outdated) cases. Nevertheless, some conclusions can be drawn:

First, the European Commission and European courts seem to have adopted a "unified" approach to the different forms of tying, in other words, contractual tying (including the tying of primary products and consumables) and the integration of products have been assessed in the same way without taking into account the different underlying effects on competition and efficiency considerations (for example, the use of consumables as a metering device).

Second, there is little sign of any development of EC policy toward tying along the lines of U.S. antitrust. Nothing suggests that the position of the European Commission and the European courts has become less hostile over the years.

Third, the formal framework of the tying analysis is almost a carbon copy of the U.S. *per se* approach (both in relation to the first and second phase of U.S. case law), following a four-stage assessment:

1. To establish *market power* (dominance) of the seller in relation to the tying product;
2. To identify *tying* which means to demonstrate that (a) customers are forced (b) to purchase two separate products (the tying and the tied product);

⁹⁵ IBM also undertook to disclose, in a timely manner, sufficient interface information to enable competitors to produce IBM-compatible hardware and software.

3. To assess the *effects of tying on competition*;
4. To consider whether any *exceptional justification for tying* exists.

As the U.S. experience has shown, the same overall framework may lead to different policies depending on the interpretation of the various elements. It is therefore necessary to take a closer look at how each of the stages has been assessed in practice.

1. MARKET POWER Article 82 of the EC Treaty is applicable only to the extent that the Commission is able to establish dominance in a particular market. Not surprisingly, in all tying cases, dominance in the market for the tying product has been a prerequisite for a finding of abusive tying: Tetra Pak was held to have abused its dominant position in the market of machines for packaging by tying the sales of cartons to the sales of their machines; British Sugar had abused its dominant position in the sugar market by tying distribution services to its sales of sugar.

It is worth noting, however, that in certain cases, the Commission has defined the market so narrowly (e.g. Hilti compatible cartridge strips) that a finding of dominance was inevitable. Furthermore, the Commission made clear that a finding of dominance in a market for consumables was not necessarily dependent on a finding of dominance in the primary market, as evidenced in *Hilti*:

Even if it were correct as Hilti argues that nail guns form part of a wider market and compete with other fixing methods in general, this would not alter the analysis given above as far as the relevant markets for Hilti-compatible nails and cartridge strips in particular are concerned and Hilti's dominance thereof. For the independent producers of these consumables the relevant markets on which they compete are those for Hilti-compatible consumables.⁹⁶

2. TYING Tying has been defined by the Commission as (a) bundling two (or more) distinct products,⁹⁷ and (b) forcing the customers to buy the product as a bundle without giving them the choice to buy the products individually.⁹⁸

⁹⁶ *Eurofix-Bauco/Hilti*, *supra* note 75, ¶ 72.

⁹⁷ See JONATHAN FAULL & ALI NIKPAY, *THE EC LAW OF COMPETITION* 166-67 (1999).

⁹⁸ *Id.*

Separate products The example of abusive behavior in article 82 refers to “making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage have no connection with the subject of such contracts”⁹⁹ and the question of whether two products are separate is therefore generally assessed on the basis of “commercial usage.”¹⁰⁰

The Commission and the Court discussed the concept of “commercial usage” in detail in the *Tetra Pak II* case. Tetra Pak had argued that the tying of machines and cartons did not contravene article 82 on the basis that the products were connected by commercial usage. In support, Tetra Pak cited its competitor Elopak, which had stated that the combined sale of machine and cartons was a more efficient way of competing. Both the Commission¹⁰¹ and the Court¹⁰² held that the products were not linked by commercial usage. The Court based its view on the fact that there were “independent manufacturers who specialise[d] in the manufacture of non-aseptic cartons designed for use in machines manufactured by other concerns and who do not manufacture machinery themselves . . . approximately 12% of the non-aseptic carton sector was shared in 1985 between three companies manufacturing their own cartons, generally under licence and acting, for machinery, only as distributors.”¹⁰³ The Court then continued, obiter dictum:

Moreover and in any event, even if such a [commercial] usage were shown to exist, it would not be sufficient to justify recourse to a system of tied sales by an undertaking in a dominant position. Even usage that is acceptable in a normal situation, on a competitive market, cannot be accepted in the case of a market where competition is already restricted.¹⁰⁴

⁹⁹ See TREATY ESTABLISHING THE EUROPEAN COMMUNITY, 1997 O.J. (C 340) 173, at article 82(2)(d).

¹⁰⁰ *Id.*

¹⁰¹ *Tetra Pak II*, *supra* note 75.

¹⁰² *Id.*

¹⁰³ *Id.* ¶ 82.

¹⁰⁴ *Id.* ¶ 137.

Two important points flow from the Court's assessment in *Tetra Pak II*. First, the Court seems to define commercial usage rather narrowly: to establish commercial usage it is not sufficient to show that tied sales are the predominant business practice in the markets in question (or comparable markets); as long as some untied sales occur in the relevant markets (in the *Tetra Pak II* case, 12%¹⁰⁵), the criterion of commercial usage is not satisfied. Second, contrary to the express wording in article 82(d), the Court does not regard absence of commercial usage as a prerequisite for tying; rather, commercial usage seems to be treated similarly to "objective justifications" (see below) which may or may not take tying outside the scope of article 82.

Forcing Under EC law, as under U.S. law, coercion to purchase two products together is a key element to establish abusive tying. Coercion may take many forms. Coercion is clearly given where the dominant firm makes the sale of one good an absolute condition of another good. This condition may be explicit in an agreement (see, for example, *Tetra Pak II*) or de facto (see, for example, *Hilti*). However, lesser forms of coercion, such as price incentives or the withdrawal of benefits may also be sufficient, if they are so powerful that customers would not choose to buy products individually. An example is Hilti's refusal to honor guarantees where customers used third-party nails in their Hilti guns.

3. ANTICOMPETITIVE EFFECTS It is not clear to what extent it has to be demonstrated under EC law that tying leads to anticompetitive effects in a particular case.

According to the *British Sugar* case, tying does not need to have any significant effect on the tied market. British Sugar tied the supply of sugar to the service of delivering the sugar. The Commission did not regard it as necessary to assess whether the delivery of sugar was part of a wider transport market and whether the tying foreclosed any significant part of such market. The fact that British Sugar had "[r]eserv[ed] for itself the separate activity of delivering sugar"¹⁰⁶ was sufficient as an anticompetitive effect.

¹⁰⁵ *Id.* ¶ 82.

¹⁰⁶ *Napier Brown/British Sugar*, *supra* note 75.

In *Hilti*, the Commission went one step further. It took the view that depriving the consumer of the choice of buying the tied products from separate suppliers was *in itself* abusive exploitation: "These policies leave the consumer with no choice over the source of his nails and *as such* abusively exploit him."¹⁰⁷ In other words, as any tying by definition restricts consumer choice in the way described above, the Commission's position in *Hilti* strongly suggests that foreclosure does not have to be established and that, hence, tying is subject to a per se prohibition (with the possible exception of an objective justification).

4. OBJECTIVE JUSTIFICATION In principle, dominant firms accused of abusive tying may raise the defense of objective justifications. In practice, however, there is so far no example of a successful defense. *Hilti*, for example, argued that tying the sale of its nail guns to the sale of its nails enhanced the safety and reliability of the overall fastening system. The Commission rejected *Hilti*'s justification on a number of grounds, focusing predominantly on the safety aspects:

1. The Commission regarded the existing safety controls and standards in the EU as adequate safeguards rendering *Hilti*'s argument concerning safety invalid.¹⁰⁸
2. The Commission argued that tying was not the least restrictive action necessary to attain the object of safety and that *Hilti*'s behavior was not solely motivated by concerns over safety and reliability.¹⁰⁹
3. Finally, the Commission argued that *Hilti* had "not been able to show any evidence of accidents to operators as a result of the use of these millions of nails produced by [*Hilti*'s competitors]."¹¹⁰

Here, the small number of EC tying cases makes it very difficult to determine whether the threshold of an objective justification is particularly high or whether in the few cases under consideration the justification raised by the dominant firms were just not supported by facts.

¹⁰⁷ *Eurofix-Bauco/Hilti*, *supra* note 75, ¶ 75 (emphasis added).

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.* ¶ 93.

IV. U.S. and EC tying law compared

A. *Where Europe stands . . .*

EC competition law uses almost the same analytical framework for tying as U.S. antitrust policy. This however does not mean that the EC approach toward tying is substantially the same as the U.S. approach. As U.S. antitrust has clearly demonstrated, the same framework allows for a wide range of different policies. Within the same four analytical steps, U.S. policy moved from a position of hostility under the *per se* illegal rule, which did not recognize any legitimate purpose for tying, to a modified *per se* illegal approach, which at least implicitly accepted that tying even by firms with market power may be efficiency enhancing.

A closer look is required to see whether the underlying rationale of EC law with respect to tying is more in tune with *Jefferson Parish* or the early *per se* rule (or indeed reflects an approach which is different from both).

1. THE RELEVANCE OF PROXIES One of the key features distinguishing the modified *per se* approach from the early *per se* approach was the use of the separate-product test (or consumer demand test) as a proxy both for competitor harm (on the basis that no competitor of the tied good can be foreclosed if there is no separate demand for it) and, implicitly, for efficiencies (on the basis that firms without market power only tie products if the efficiencies from tying outweighs the loss of choice).

In principle, the criterion of "commercial usage" suggested by the wording of article 82 is capable of evaluating competitor harm and efficiencies in much the same way as the consumer demand test does in the U.S. In *Tetra Pak II* however, the Court made clear that it did not consider the "commercial usage" criterion as a proxy for efficiencies or consumer harm.¹¹¹ In fact, the Court's statement that "[e]ven [commercial] usage [of bundled products] . . . which may be acceptable in a normal situation, on a competitive market, cannot be accepted in the case of a market where competition is already

¹¹¹ *Tetra Pak II*, *supra* note 92.

restricted,"¹¹² demonstrates that it will not consider such a possibility. If taken at face value, this statement (namely that the separate-product test is not a necessary precondition to establishing tying) would result in a policy toward tying that would be not only more draconian than *Jefferson Parish's* modified per se rule, but even considerably harsher than the strict U.S. per se rule that prevailed until 1984.

As far as the requirement to establish an adverse effect on competition is concerned, the position is a mirror image of the separate-product test. *Jefferson Parish* has raised the threshold of abusive tying from the mere de minimis standard of a "not insubstantial amount of commerce"¹¹³ under the early per se rule to "a substantial potential for impact on competition."¹¹⁴ EC competition law, again, is much closer to the early per se rule than to *Jefferson Parish*. Under EC law a reduction in consumer choice in itself seems to be abusive, which suggests that no foreclosure (de minimis or otherwise) has to be demonstrated.

2. SUMMARY OF EC AND U.S. COMPARISONS A direct comparison of EC and U.S. competition law of tying leads to a number of conclusions.

First, a comparison of the underlying principles of U.S. and EC law in respect of tying suggests that EC law is in many respects much closer to the early U.S. cases under the per se approach than to the more recent U.S. cases since *Jefferson Parish*. The exception is the EC assessment of market power, which is more closely related to the modified per se approach. This, however, is more a reflection of the use of a different policy instrument than the particular policy against tying.

Second, in Europe a literal interpretation of the principles set out by the Court and the Commission would lead to an extremely wide definition of abusive tying. A dominant car manufacturer, for example, who does not offer his cars without engine or shock absorbers, i.e. who bundles the various car components, clearly risks contravening article 82, despite the fact that all other nondominant

¹¹² *Id.* ¶ 6.

¹¹³ *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2, 16 (1984).

¹¹⁴ *Id.*

manufacturers act in the same way (*Tetra Pak II*) and that this does not foreclose any component manufacturer (*British Sugar*).

Third, the cases in which tying has been found to be abusive under EC competition law are less extreme than the principles on which the prohibitions have been based. In other words, most of the bold statements of principle were made obiter dicta.

B. . . . And why

There are a number of possible explanations for the position of EC competition policy in relation to tying and the divergence with respect to the current U.S. approach.

First, in Europe it has taken longer for new developments in economic theory to affect competition policy. While U.S. antitrust has been influenced by Chicago school and post-Chicago school theories, pre-Chicago school considerations still play a role in Europe, albeit at times dressed up in post-Chicago clothing. The Commission's statement of objections and decision concerning General Electric's proposed acquisition of Honeywell was telling. As Evans and Salinger point out:

the DG-Comp's analysis reflects a reversion to pre-Chicago thinking in which some courts presumed that a harm to competitors necessarily resulted in a harm to competition and consumers. Whether dressed up in a formal model or not, both ultimately come down to that what is bad for a competitor must be bad for competition.¹¹⁵

Second, EC competition law imposes a "special responsibility"¹¹⁶ on dominant firms not to allow their conduct to impair undistorted competition. This special responsibility facilitates the finding of an abuse; in particular it seems to make it easier to reach the conclusion that behavior that is efficient, if carried out by a firm with market power, is harmful to competition if undertaken by a dominant firm without the competition authorities assessing in detail whether the behavior of the dominant firm might be efficiency enhancing.

¹¹⁵ David S. Evans & Michael Salinger, *Competition Thinking at the European Commission: Lessons From the Aborted GE-Honeywell Merger*, 10 GEO. MASON L. REV. 489, 520 (2002).

¹¹⁶ Case 322/81, *Michelin v. Commission*, ¶ 10 [1983] E.C.R. 3461.

Third, the administrative proceedings under EC law provide greater control in the selection of tying cases than the court-based U.S. system. The wide definition of abusive tying coupled with the small number of negative decisions suggests that the Commission uses implicit "prescreening" criteria that are not reflected in a comparison of the explicit assessment criteria.

At this stage, it is difficult to determine which of the possible explanations is actually correct. The next Commission or Court decision on tying may provide an answer.

V. Lessons from economic theory and evidence

Modern economic thinking largely supports the adoption of the rule of reason approach to the analysis of tying cases adopted by the D. C. Circuit Court of Appeals with respect to software in *Microsoft III*. The economic literature shows that tying typically generates consumer benefits or lowers production costs. The same literature also shows that tying creates anticompetitive effects meriting regulatory intervention in special circumstances; those circumstances have been identified as special cases of models that themselves are based on stylized assumptions.¹¹⁷ In the following sections we will review the history of economic contributions that have led to this consensus.

A. *The Chicago school*

A few decades ago, economists associated with the Chicago school¹¹⁸ explained how tying could provide increased convenience

¹¹⁷ For an alternative discussion of the economic theory of tying, see Eric Emch, *Portfolio Effects in Merger Analysis: Differences Between the EU and U.S. Practice and Recommendations for the Future*, in this issue of *The Antitrust Bulletin*.

¹¹⁸ See, e.g., Aaron Director & Edward H. Levi, *Law and the Future Trade Regulation*, 51 Nw. U. L. Rev. 281 (1956); GEORGE J. STIGLER, *THE ORGANIZATION OF INDUSTRY* (1968); RICHARD A. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* (1976); and BORK, *supra* note 1.

and lower transaction costs.¹¹⁹ They also showed that, as a matter of theory, there are many circumstances in which businesses cannot use tying to leverage a monopoly position in one market in order to secure extra profits elsewhere—a result known as the single monopoly profit theorem. In short, the Chicago school claimed that tying conduct produces many benefits from a social viewpoint, at no competition cost, and that it should therefore be treated as *per se* legal.

1. THE WELFARE INCREASING EFFECTS OF TYING (a) *Reduction in production and distribution costs* Tying may give rise to both economies of scale and scope in production and distribution. For example, machines may be utilized to manufacture two or more products allowing the producer to reduce the size or complexity of its factories. Also, the specialization of labor allows manufacturers to combine the various products that are part of the tie or bundle more efficiently than end users would do. Not so long ago, for example, electrical appliances and plugs were sold separately in Europe. Such a commercial practice was everything but user-friendly or efficient.

Marketing and distribution costs may also be reduced when various products or services are combined. In media markets, for example, economies of scope between delivery infrastructures and content allow cable operators and asymmetric digital subscriber line (ADSL) providers to bundle Internet access, pay-TV and telephony, in what is known as a triple play. The software industry provides another useful example of these types of savings. Indeed, learning-by-doing and other scale effects of integrated software make industry vendors more efficient assemblers than consumers and able to take advantage

¹¹⁹ Chicago economists also noted that tie-ins can be used to accomplish price discrimination. Economic theory has shown that price discrimination can, in principle, be pro- or anticompetitive, depending upon a series of structural factors, but that it is most often welfare increasing. See DENNIS W. CARLTON & JEFFREY M. PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 289–91 (3d ed. 2000). Hence, tying practices aimed at facilitating price discrimination should be typically considered welfare increasing and thus procompetitive. This is more or less the case under U.S. law; however, EC competition law treats price discrimination as nearly *per se* illegal. See RICHARD WHISH, *COMPETITION LAW* 657–62 (4th ed. 2001).

of joint manufacturing and joint shipment of software products that might otherwise be distributed separately.¹²⁰

(b) *Reduction in transaction costs* Tying reduces the costs of searching for the most appropriate combinations of products that satisfy a complex need. And it greatly simplifies use. At one time, software technologies such as tool bars, modem support, power management and sound were all formally offered as stand-alone products. Today, they are universally offered as an integrated, “bundled” part of the operating system. The widespread use of bundled software is itself a function of better technology—faster speed and expanded memory. But, perhaps most importantly, it is a response to consumers who value the ease of use of bundled software.¹²¹ This is not the only example of reduced transaction costs through tying or bundling. While over the last few years many consumers have gained considerable experience with selecting and purchasing stocks and other financial products online, most individual consumers still opt for a financial service “bundle” composed of stock selection, purchase, and financial advice.¹²²

(c) *Product improvement* When products are tied or bundled, the whole may be worth more than the sum of its parts; the resulting combined product offers benefits to consumers above and beyond the individual components added together. To take a simple example, today consumers enjoy breakfast cereals featuring a dizzying array of

¹²⁰ See Steven J. Davis, Kevin M. Murphy & Jack MacCrisken, *Economic Perspectives on Software Design: PC Operating Systems and Platforms*, in MICROSOFT, ANTITRUST AND THE NEW ECONOMY 361 (David S. Evans ed., 2002), for an explanation of the forces and factors that determine whether and when new features and functions are included in commercial operating systems products.

¹²¹ See David S. Evans, A. Jorge Padilla & Michele Polo, *Tying in Platform Software: Reasons for a Rule of Reason Standard in European Competition Law*, 25 *WORLD COMPETITION* 509 (2002).

¹²² According to Jupiter Communications—an information-technology consulting company—in 2002, almost a third of all stock trading would take place over the Internet. See Annelia Wynyard & David Snow, *The Online Trading Trade Off*, *TECH TV*, Oct. 7, 1998 (visited Feb. 13, 2003) <http://www.techtv.com/news/print/0,23102,2144866,00.html>.

combinations of ingredients (fruits, nuts, grains); shapes (flakes, squares, doughnuts); textures; and tastes. For example, Apple-Cinnamon Cheerios is simply a bundle of grains, shaped into crunchy doughnuts, and flavoring (apple and cinnamon). Arguably, this product is an improvement over the first cereal products mass-produced at the turn of the 19th century, and an improvement to the consumer in terms of convenience and health benefits from assembling all the ingredients for the cereal herself. According to an econometric study, the introduction of Apple-Cinnamon Cheerios in 1990 into the U.S. market increased consumer welfare by approximately \$66.8 million per year.¹²³ Likewise, other studies have shown that the introduction of the minivan—a product based on assembling the components of existing products (trucks and cars)—in the mid-1980s resulted in consumer welfare gains of approximately \$560 million per year.¹²⁴

(d) *Quality assurance* Because firms bring skill, knowledge, experience, and other resources to tying or product integration, allowing consumers to assemble the individual components themselves may affect the quality of the final product to the detriment of both producers and consumers. For example, in earlier decades of the electronics industry, hobbyists and other interested consumers could find the component parts of radios and other simple electronic equipment and with some effort, assemble them by themselves. However, with the increasing sophistication—miniaturization, digitization, and other complexities—of electronics equipment, it is nowadays more difficult to ensure that the final product will meet with consumer satisfaction. When the consumer assembles the product, it may not be clear if any malfunctions are the fault of the consumer or the component suppliers. Equipment manufacturers may

¹²³ This figure is \$97 million in 2002 U.S. dollars. Jerry A. Hausman, *Valuation of New Goods Under Perfect and Imperfect Competition*, in *THE ECONOMICS OF NEW GOODS* 209, 234 (Timothy F. Bresnahan & Robert J. Gordon eds., 1997).

¹²⁴ This figure is \$1.01 billion in 2002 U.S. dollars. Anil Petrin, *Quantifying the Benefits of New Products: The Case of the Minivan*, 110 *J. POL. ECON.* 705, 728 (2002).

suffer from an undeserved reputation for poor quality, and it may be more difficult for consumers to identify substandard manufacturers. Bundling components together gives both the consumer and the producer more certainty regarding product quality.

(e) *Pricing efficiencies* Augustin Cournot showed, in work published in 1838, that a firm monopolizing the markets for two complementary products would charge lower prices than would two separate monopolists each selling a different product.¹²⁵ That is, complements may be priced lower if offered by the same firm in a bundle. This is similar to the well-known “double marginalization” problem in the analysis of vertical integration, where a monopoly provider of two goods at different levels of supply will maximize its profits across the two goods, while separate providers will price each good at the individual profit-maximizing price.¹²⁶

In media markets, for example, “in an unbundled system, a change in the price charged to subscribers for a given program service will affect not merely the demand for that service but also the demand for transmission, and possibly the demand for complementary program services,” making it more efficient to bundle content with delivery.¹²⁷

(f) *A practical example* A simple empirical example¹²⁸ can help us to illustrate the benefits of offering an integrated product to consumers. When suffering from cold or influenza, consumers face a number of choices with regard to over-the-counter or nonprescription medications. Many products are available for each individual symptom of nasal congestion, coughing, pain, or fever. In addition to products intended to relieve each symptom individually, there are also multisymptom products that aim to relieve all cold and flu symptoms.

¹²⁵ AUGUSTIN COURNOT, *RECHERCHES SUR LES PRINCIPES MATHÉMATIQUES DE LA THÉORIE DES RICHESSES* (1838).

¹²⁶ JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 333–35 (1988).

¹²⁷ BRUCE M. OWEN & STEVEN S. WALDMAN, *VIDEO ECONOMICS* 219 (1992).

¹²⁸ David S. Evans & Michael Salinger, *Quantifying the Benefits of Bundling and Tying* (Working Paper, 2002).

Consumers of the “bundled” medicine benefit from the low prices resulting from savings in marketing and packaging. Indeed, the price of a single multisymptom product relieving fever, pain and congestion in a major U.S. city is \$9.29, whereas the overall cost of a combination of products that relieve the same symptoms ranges from \$14.48 to \$15.48.¹²⁹

Those are not the only savings associated to bundling, however. Bundling also provides increased convenience as consumers need not bother about which combination of medicines they need—they just purchase the package labeled “Cold and Flu Medicine” and waste no time.

2. THE SINGLE MONOPOLY PROFIT THEOREM The second central insight of the Chicago school is that a firm enjoying monopoly power in one market (the market for the tying good) could not increase its profits, and instead could reduce them, by monopolizing the market for another good (the market for the tied good). This idea is commonly referred as the “single monopoly profit theorem,” and in principle applies to cases where the demands for the two goods are both independent and complementary. This theorem does not say that monopolists will not engage in tying and bundling. Nor does it say that monopolists cannot make greater profits by tying and bundling. Rather, what it says is that monopolists cannot secure greater profit merely by leveraging their monopoly from one market to another and that they must be engaging in tying and bundling to improve quality or lower cost (i.e. improve efficiency).

The intuition behind this result is simple. Consider first the case where the demands for the two goods are independent, so that the quantity demanded by consumers of one of the goods is independent of the price of the other. In that case, tying a competitively supplied good to a monopolistically supplied good is like establishing a tax on the latter. This tax would reduce consumption of the monopoly good unless consumers like the competitively supplied (tied) good and the monopoly prices the tied good competitively; i.e., unless the monopoly makes no rents from the tied market.

¹²⁹ Holding dosage, ingredients, and delivery system (tablets, capsules, etc.) constant.

If the demands for the two goods were, instead, complementary and the two products were consumed with fixed ratios,¹³⁰ a monopolist could only benefit from the tied good being competitively supplied, since all of the monopoly rents available in the two markets could be captured by a monopoly in one of them.¹³¹ Richard Posner illustrated this result with a simple example:

Let a purchaser of data processing be willing to pay up to \$1 per unit of computation, requiring the use of one second of machine time and ten punch cards, each of which costs 1 cent to produce. The computer monopolist can rent the computer for 90 cents a second and allow the user to buy cards in the open market for 1 cent a card or, if tying is permitted, he can require the user to buy cards from him at 10 cents a card—but in that case he must reduce his machine rental charge to nothing, so what has he gained?¹³²

Most strikingly, perhaps, under those same circumstances, if the monopolist faced competition from a more efficient firm in the tied market, it could do no better than abandoning the market for the tied good while, at the same time, raising the price of the monopoly good.

B. Post-Chicago theories

The contribution of the Chicago school to the tying doctrine was to give the efficiency motivations described above their proper place in antitrust analysis, and to reorient the thinking of competition authorities toward understanding that tying and bundling behavior was likely to be procompetitive as a result of reducing cost or improving quality. In the 1990s, however, the so-called post-Chicago economic

¹³⁰ The single monopoly profit theorem fails to hold when the two goods are consumed in variable proportions. Trying to extract the rents generated in the tied market through the pricing of the monopoly product is not a valid strategy in that case, since consumers would substitute away from the monopoly product. However, that does not imply that tying is necessarily anticompetitive when goods are consumed in variable proportions. On the contrary, it is precisely under such kinds of consumer preferences that the monopolist has an interest in tying to price discriminate efficiently. See *supra* note 119.

¹³¹ BORK, *supra* note 1.

¹³² POSNER, *supra* note 118, at 173.

literature showed that the single profit monopoly theorem is not as robust as the Chicagoans suggests. The theorem depends, at least in its most extreme form, on the assumption that the tied market is "perfectly" competitive.¹³³ When that is not true, the theorem *may* fail.

Economists developed a series of highly stylized models to try to understand the competitive implications of tying and bundling when the structure of the tied market is oligopolistic, rather than perfectly competitive. They showed that a firm enjoying monopoly power in the tying good might have an anticompetitive incentive to tie when the tied good market is imperfectly competitive if, *in addition*, tying keeps potential rivals out of the market for the tied product or, alternatively, helps the monopolist to preserve its market power in the tying product.

The basic mechanism that leads to the exclusion of actual and potential competitors from the tied good is "foreclosure;" by tying the monopolist deprives its competitors in the tied good market of adequate scale, thereby lowering their profits below the level that would justify remaining active (or, alternatively, entering) in that market. This section proceeds with a detailed summary of the main papers of the post-Chicago school.

1. EXCLUSION AND ENTRY DETERRENCE IN THE TIED GOOD MARKET

Whinston's 1990 *American Economic Review* article is the seminal paper of those that formally analyzed the conditions under which the single profit monopoly theorem may fail to hold.¹³⁴ This paper shows that leveraging a monopoly position in the tying market onto an adjacent (tied) market may be privately profitable when the tied market is subject to economies of scale and, therefore, it is imperfectly competitive, and leveraging successfully induces the exit (or deters the entry) of competitors in the tied market.

¹³³ Even if both markets are monopolized, welfare could still be enhanced through elimination of the double marginalization problem or through price discrimination. The critical observation here is that consumers can benefit even when tying and bundling are conducted by a firm with market power.

¹³⁴ Michael D. Whinston, *Tying, Foreclosure and Exclusion*, 80 AM. ECON. REV. 837 (1990).

Suppose, for example, that a firm selling two goods, *A* and *B*, enjoys a monopoly position in the market for product *A* but faces competition (actual or potential) in the market for product *B*. Suppose also that the demands for products *A* and *B* are independent, so that the quantity sold of each of them is independent of the price of the other. If the monopolist in market *A* were to tie its two products, it effectively would be linking its sales of product *A* to the sale of product *B*. As a result its incentive to price *B* aggressively would be greatly increased. Tying, therefore, would lead to lower prices for product *B*. It would also lead to lower profits in the market for this product. Both the monopolist's and its competitors' profits from the sale of product *B* would fall, but the impact on the latter would be far greater. This is because tying would allow the monopolist to capture sales from its competitors, which in the presence of economies of scale in production would make them less effective competitors. The reduction in profits may induce the monopolist's competitors to exit the market for product *B*, or not to enter into it if they were potential competitors. In those cases, tying could both increase the monopolist's profits and harm consumers.

Like any other game-theoretic analysis, Whinston's model is notoriously fragile; minor changes in assumptions can lead to dramatic differences in results. Most importantly, Whinston's leveraging result requires that (a) the monopolist of product *A* be able to commit to tying and (b) tying leads to market foreclosure. Otherwise, the monopolist's strategy would be self-defeating. Tying would just serve to increase the intensity of price competition in the market.

The leveraging result also depends on the interrelationship between the demands for the two goods. Monopolizing the tied market might lead to lower sales and lower prices in the monopoly market when the two goods are complements and tying causes the exit (or prevents the entry) of more efficient producers of good *B*.¹³⁵ In that case, the incentives to tie would be reduced. Alternatively, the incentives to tie would be greater if consumers' valuations for the tying and tied goods were positively correlated.

¹³⁵ Or, in the context of product differentiation, of higher quality versions of product *B*.

Since 1990, various authors have developed models that aim to relax the conditions under which tying may turn out to be anticompetitive. Nalebuff, for example, constructed a model where a firm producing goods *A* and *B* has a “credible” incentive to tie them together in order to deter entry.¹³⁶ In contrast to Whinston’s model, tying makes entry more difficult, not because the monopolist is committed to a price war, but because it deprives the entrant of an adequate scale. Credibility is not an issue here because even when entry is not foreclosed, the price for good *B* and the monopolist’s profits are higher with a tie than without. The intuition is as follows. As in Carbajo, De Meza and Seidman,¹³⁷ in Nalebuff’s model tying becomes a way for the competing firms to differentiate their products and thus relax price competition. The monopolist sells both *A* and *B* tied together, whereas the entrant sells only product *B*. The monopolist attracts those customers with a high valuation for both *A* and *B* and charges them a high price, while the entrant sells to those consumers of good *B* who have a low valuation for good *A* and charges them a low price.

2. PROTECTING MONOPOLY RENTS IN THE TYING GOOD MARKET Carlton and Waldman¹³⁸ argue that the logic behind leveraging a monopoly position onto another market through tying may not be to increase profits in that (competitive) market, but to deter future entry into the monopoly (tying) market. In the Carlton-Waldman model, there are two goods: the primary good (the tying good or monopoly product) and a complementary good (the tied good). The primary good can be used by itself. The complementary good can be used only in conjunction with the primary good.¹³⁹ Their theory is built on the assumption that potential competitors may refrain from entering

¹³⁶ BARRY NALEBUFF, *BUNDLING* (Yale ICF Working Paper #99-14, 1999).

¹³⁷ José Carbajo, David De Meza & Daniel Seidman, *A Strategic Motivation for Commodity Bundling*, 38 J. INDUS. ECON. 283 (1990).

¹³⁸ Dennis W. Carlton & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON. 194 (2002).

¹³⁹ The authors cite as an example a computer (primary good) and a printer (complementary good).

the monopoly market if they face the incumbent as its sole complementary good producer. The monopolist, therefore, has an incentive to monopolize the tied good in order to protect its rents. Entry into the tying market obviously would dissipate some of the rents made in that market. But it would also make it impossible to extract rents from the market for the complementary good, as the incumbent would find it costly to raise its price in the tying market because of the competition from the newly established entrant.

The incentives of the incumbent to monopolize the complementary good market may exist even when entry is costless provided there were network externalities in that market, i.e., consumers' valuations for the complementary good were an increasing function of the number of other users. Carlton and Waldman showed that tying the complementary good to the monopoly product gives the monopolist a head start in the race to become the standard in the market for the complementary good market. This incentive exists because the incumbent sees its monopoly position in the primary good market subject to the threat of entry. Otherwise, it would prefer to have competition in the complementary good market, so as to ensure the adoption of the best standard and to appropriate the rents generated by that standard via a higher price in the primary product market.

Notwithstanding its conceptual simplicity, the validity of the theory developed by Carlton and Waldman relies on a number of strong assumptions that do not always fit well with the facts of the markets under scrutiny. First, Carlton and Waldman's theory requires that entry into the tied market be very costly. Otherwise, the strategy of foreclosure could be defeated by the simultaneous entry into the two complementary markets. Second, their theory does not fare well when the product sold in the monopoly market has a life of its own, i.e., when some consumers have a demand for the monopoly good only. In this case the profitability of entry in the monopoly market is much less affected by the monopolization of its complementary market.

3. POST-CHICAGO THINKING ENDORSES A RULE OF REASON APPROACH

The post-Chicago models developed so far raise substantial objections to the validity of the Chicago school's assertion that tying should be legal per se. Yet, those models do not provide support for a per se prohibition of tying by dominant firms. They establish the theoretical

possibility of anticompetitive tying, but do not conclude that tying is anticompetitive in general, or that it is likely to be anticompetitive in practice. Indeed, the post-Chicago literature has not questioned that tying may in many circumstances—including those where the single monopoly profit theorem fails to hold—be welfare enhancing.¹⁴⁰

VI. Whither tying law?

As we saw in previous sections, U.S. tying law has evolved over the past decades from a per se prohibition, based on the presumption that the motive for tying is to leverage market power, to a modified per se rule under *Jefferson Parish* and a rule of reason inquiry in connection with technological integration under *Microsoft III*. Meanwhile, EC law on tying remains anchored in the classical (pre-Chicago) tying doctrine that supports a per se prohibition standard.¹⁴¹

None of this is satisfactory. As Hylton and Salinger note in a recent paper, “From an economic standpoint, . . . there is no basis for a per se rule, even given the conditions established in *Jefferson Parish* for triggering the rule.”¹⁴² Indeed, the principal implication of several decades of economic investigation on the competitive effects of tying is that there should be *no* presumption on the part of competition authorities that tying and bundling are anticompetitive, even when undertaken by firms with monopoly power.

Although recent developments in economic thinking, such as the post-Chicago models of anticompetitive tying, have provided several examples of situations where these activities may be anticompetitive, they do not disturb the consensus view that tying

¹⁴⁰ In a recent study for the U.K.'s Department of Trade and Industry, Nalebuff suggests a similar conclusion. See BARRY NALEBUFF, *BUNDLING, TYING AND PORTFOLIO EFFECTS* (DTI Economics Paper No. 1, Part 1—Conceptual Issues (Feb. 2003)).

¹⁴¹ See, e.g., Evans & Salinger, *supra* note 115, at 489. Evans & Salinger use the *GE/Honeywell* decision as “a springboard for exploring European thinking about competition and its place in the economy.”

¹⁴² Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 *ANTITRUST L. J.* 469, 470–71 (2001).

and bundling are a constant feature of economic life, and that the primary motivations for this form of strategic behavior are the realization of substantial efficiencies that lead to both higher profits and increased consumer welfare. Those models, therefore, should be interpreted as supportive of a rule of reason approach to the antitrust analysis of tying cases.¹⁴³

A. *Implementing a (structured) rule of reason approach*

Unfortunately, the game-theoretic models developed by post-Chicago economists do not provide a universally valid set of conditions that could be used by competition authorities as a safe checklist in their rule of reason analyses of tying. What these models do suggest is a series of screens for determining whether antitrust authorities should investigate and ultimately condemn a tying arrangement. First, economic theory shows that tying cannot plausibly have anticompetitive effects unless, *inter alia*, a firm has significant market power in the tying market and faces imperfect competition in the tied market. We can screen those cases from further consideration. Second, it is possible to construct models—or stories—in which tying can prove anticompetitive. However, those models are based on assumptions that one would need to verify through examination of the facts for a particular matter. We can eliminate some tying cases because the explanations for how those ties may cause anticompetitive harm do not withstand factual scrutiny. Third, there is a class of tying cases for which it is plausible, given the factual circumstances, that the ties reduce competition. However, those ties, like most ties, may increase efficiency by lowering costs or improving quality. For those “questionable” ties one needs to balance anticompetitive against procompetitive effects to determine whether these ties, on balance, harm consumers.

1. FIRST SCREEN: IS AN ANTICOMPETITIVE EFFECT *POSSIBLE*? The first screen is whether it is possible that the tying practice in question

¹⁴³ See, e.g., Patrick Rey, Paul Seabright & Jean Tirole, *The Activities of a Monopoly Firm in Adjacent Competitive Markets* (INSTITUT D'ECONOMIE INDUSTRIELLE, UNIVERSITÉ DE TOULOUSE I, Working Paper, 2001).

could have anticompetitive effects.¹⁴⁴ The models described in section V.B above provide a set of conditions that are necessary for tying to have anticompetitive effects. Yet a tie that meets those conditions does not necessarily give rise to anticompetitive effects. Further conditions need to be verified—those additional tests form part of the second screen.¹⁴⁵

The seven conditions identified for a first screen from the literature are:

(1) *Market power for the tying firm* The degree of market power for the tying firm in the tying market should be the first step of any inquiry into tying and bundling.¹⁴⁶ Without market power, the tying firm either has no anticompetitive incentive to bundle, or its aim to exclude competitors by means of tying and bundling will be thwarted by its competitors. However, market power alone is often not enough—a firm may need to possess a near-monopoly in the tying market in order to overcome the difficulties in effecting an anticompetitive tie in the face of competitive threats.¹⁴⁷

(2) *Status of competition in the tied market* As we saw above, models of anticompetitive tying assume that the tied market is imperfectly competitive;¹⁴⁸ i.e., it is populated by a “few” firms facing

¹⁴⁴ That is, tying is privately profitable *but* potentially detrimental from a social viewpoint.

¹⁴⁵ In the language of formal logic, the conditions listed below are not necessary (and much less sufficient) for tying to be anticompetitive.

¹⁴⁶ Paul Seabright, *Tying and Bundling: From Economics to Competition Policy*, Edited Transcript of a CNE Market Insights Event, Sept. 19, 2002 (visited Feb. 13, 2003) http://www.centrefortheneweuropa.org/pub_pdf/09192002_tying_bundling.htm.

¹⁴⁷ Otherwise, (a) the tying firm may not benefit by as much from the exclusion of its competitor(s) in the tied market, or (b) its competitors in the tied and tying markets may cooperate to match the tie, thus defeating the exclusionary purposes of the tying firm. *See* Whinston, *supra* note 134.

¹⁴⁸ Otherwise, the Chicago’s one monopoly profit theorem likely will hold.

positive fixed costs. Through tying the monopolist steals the business of its competitors in the tied good market, reducing their revenues below the level needed to cover their fixed costs. In a perfectly competitive market (with no fixed costs), such exclusionary activities would be inconsequential.¹⁴⁹

(3) *Commitment to tie* As shown by Whinston, tying two goods together may prompt aggressive pricing responses by rivals, which would yield lower profits to all market participants, including the tying firm. The tying firm, consequently, must be able to show its rivals that it is committed to bundling even in the face of lower profits and until competitor exit is achieved. Without such a commitment, tying may not be credible and may fail to generate anticompetitive effects. Note, however, that credibility need not be an issue when consumers have heterogeneous valuations for the tying good.¹⁵⁰

(4) *Competitor's inability to match the tie* Tying may not allow the near-monopolist to profitably leverage its market power in the tying good onto the tied good market if its competitors were able to respond with bundles of their own.¹⁵¹

(5) *Likelihood of competitor exit* Anticompetitive tying may be privately profitable if it leads to market foreclosure. However, exit may be difficult to predict, as its likelihood depends on (a) the demand links between the tying and tied goods (complementarity of products, positive/negative correlation between consumers' valuations for the two goods); and on (b) market conditions that go beyond the use of tying strategies; e.g., the degree of product

¹⁴⁹ *Id.*

¹⁵⁰ See Nalebuff, *supra* note 136.

¹⁵¹ See BARRY NALEBUFF, *COMPETING AGAINST BUNDLES* (Yale School of Management Working Paper #7, 2000). Nalebuff shows that, under certain conditions, competitors may not match the bundle of the incumbent even when they have the ability to do so. And in some other cases, matching tying may turn out to be inefficient even if it prevents market foreclosure.

differentiation, the size of the competitor's overheads, its debt capacity, etc.¹⁵²

(6) *Entry barriers* Even if some competitors exit the tied good market, without entry barriers it is unlikely that the tying firm would be able to raise price, as new competitors would quickly enter and erode any anticompetitive rents. This is more likely to occur in industries subject to rapid technological change.

(7) *Absence of buyer power* Buyer power can prevent the tying firm from profiting from an anticompetitive tie. Even if some competitors exited the tied good market, and entry barriers were sufficient to preclude new entry, a tying firm facing a concentrated demand side would not be able to raise the price of its bundle.¹⁵³

These criteria are not empirically demanding. They entail investigations into market structure in which economists routinely engage. Ties that do not pass through this screen would need to be subjected to a second screen—a further analysis to determine whether they are likely to have anticompetitive effects. Although we have characterized these as necessary conditions, we believe some flexibility is in order. None of those conditions have binary values—either the condition holds or it does not. For example, if the first six conditions held but there was buyer market power one would ask whether that power was truly sufficient to defeat a tying strategy.

In practice, the critical issues are likely to be whether the firm has significant market power in the tying market and faces imperfect competition—a small number of firms and entry barriers—in the tied market.¹⁵⁴ If it does not, an anticompetitive tie is not plausible. Since

¹⁵² In Carlton & Waldman, privately profitable tying may give rise to anticompetitive effects even if competitors do not exit the market provided that they become “sufficiently” marginalized. Carlton & Waldman, *supra* note 138.

¹⁵³ See BARRY NALEBUFF, BUNDLING AND THE GE-HONEYWELL MERGER (Yale School of Management Working Paper #22, 2002).

¹⁵⁴ This screen must be preceded by a careful market definition analysis to identify the precise boundaries of the tying and tied markets and the competitive constraints faced by the companies operating in each of them.

the likelihood and cost of a false acquittal are low, why take the risk of a false conviction!

2. SECOND SCREEN: IS AN ANTICOMPETITIVE EFFECT *PLAUSIBLE*? Let us suppose market circumstances make it possible that tying *might* have an anticompetitive effect. The next question is whether the tying arrangement under consideration is *likely* to have an anticompetitive effect. Like the first screen, this question can be addressed only by examining the factual circumstances of the market at issue. Unlike the first screen, this question can only be answered by positing a "theory" concerning how the tying arrangement will lead to anticompetitive effects and determining whether that "theory" applies to the factual circumstances at hand. Let us not overstate the requirements—one does not need to have a fully specified mathematical theory of tying that has been published in an economic journal. But one does have to have a theory that can be confirmed or falsified by testing the theory against facts.¹⁵⁵ In some cases, it will be possible to take a theory "off the shelf." In other cases, it will be necessary to develop a theory that is customized to the facts of the case including the relevant business and possibly government institutions.

Let us suppose that the Carlton-Waldman model has been suggested as the appropriate framework for evaluating a particular tying arrangement. In their model, anticompetitive leverage result holds only if (a) entry into the (tied) complementary good market is costly or, alternatively, the tied good market is characterized by network externalities; (b) consumers receive no utility from consuming either a primary unit by itself or a complementary unit by itself; (c) if the two products are tied, a consumer cannot undo the

¹⁵⁵ We have encountered a number of situations in which some participants in a case leap from the proposition that tying could be anticompetitive to the conclusion that tying is anticompetitive without checking whether the assumptions made by the theory hold in the matter at hand.

¹⁵⁶ That is, if the consumer purchases a bundle consisting of one unit of the monopolist's primary good and the one unit of its complementary good, then the consumer cannot add a unit of the potential entrant's complementary good to the bundle.

tie;¹⁵⁶ and (d) the potential entrant cannot enter the markets for the primary and complementary goods simultaneously.

Determining whether these conditions hold is an empirically demanding task. For example, in order to conclude that tying generates anticompetitive effects in the context of the model developed by Carlton-Waldman, one needs to verify that the parameters of the model—e.g., the firms' discount factors and marginal costs of production, the sunk costs of entry into the primary and complementary goods markets, and the consumers' valuations for the various products offered by the monopolist and the potential entrant—are such that:¹⁵⁷

1. The potential entrant's complementary product is of higher quality than the monopolist's complementary product.¹⁵⁸
2. The primary market monopoly is more valuable to the monopolist than the potential benefits associated with having the alternative producer offer its higher-quality product.¹⁵⁹
3. The potential entrant would enter the primary market if it previously had entered the complementary market.¹⁶⁰
4. The potential entrant does not find it profitable to enter both markets simultaneously.¹⁶¹
5. If the monopolist does not tie, then the potential entrant would find it profitable to enter the complementary market first and the primary good market later.¹⁶²

¹⁵⁷ Likewise, the anticompetitive results in Whinston hold only for some parameterizations of the models that are hard to verify in practice. Further research is needed in this area so that we can move from "exemplifying theory" to a theory constructed around propositions establishing the general necessary and sufficient conditions for tying to be welfare reducing.

¹⁵⁸ Carlton & Waldman, *supra* note 138, at 198.

¹⁵⁹ *Id.* at 199.

¹⁶⁰ *Id.* at 204, equation (1).

¹⁶¹ *Id.* at 204, equation (2).

¹⁶² *Id.* at 204, equation (3).

Conditions 1 to 5 hold for some parameterizations but not for all. Furthermore, those parameters are hard to estimate in practice. Ties that do not pass through this screen would need to be subjected to a third screen to determine whether there are offsetting efficiencies.

One might argue that we are raising the bar too high by insisting that there is empirical evidence that these conditions hold before concluding that a tying arrangement is anticompetitive. Unfortunately, there is no basis for inferring that a tying arrangement is anticompetitive unless these conditions do hold. Nor is there an a priori basis for believing that these conditions are likely to hold. One must confront the theory with the facts, as hard as this may be in some cases, to ascertain whether a tying arrangement has anticompetitive effects.

3. THIRD SCREEN: ARE THERE OFFSETTING EFFICIENCY BENEFITS? The third screen is whether there are efficiency benefits that offset the anticompetitive effects. This final screen requires determining whether the tie generates efficiencies (as most ties do) that can only be achieved through a tie, and whether these efficiencies are greater than the anticompetitive effects of the tie. In conducting this analysis one would need to consider dynamics and uncertainty. The anticompetitive effects demonstrated in the existing theoretical models take place over time—market foreclosure leads to exit which leads to higher prices. One therefore needs to discount these effects to reflect the fact that they occur in the future and are uncertain.¹⁶³

Once again, this is an empirically demanding task, as Carlton-Waldman have recently explained:

We would like to caution that trying to turn the theoretical possibility for harm . . . into a prescriptive theory of antitrust enforcement is a difficult task. For example, the courts would have to weigh any potential efficiencies from the tie with possible losses due to foreclosure, which by itself is challenging due to the difficulty of measuring both the relevant efficiencies and the relevant losses.¹⁶⁴

¹⁶³ A. Jorge Padilla, *The Efficiency Offence Doctrine in European Merger Control*, in *INTERNATIONAL MERGER CONTROL: PRESCRIPTIONS FOR CONVERGENCE* 117, 117–23 (William Rowley & Michael Reynolds eds., 2002).

¹⁶⁴ Carlton & Waldman, *supra* note 138, at 215 (citations omitted).

B. The choice of legal standard

The best legal standard is, of course, one that perfectly ferrets out anticompetitive ties from procompetitive ones. Unfortunately, courts (and competition authorities) are only human and make errors. The possibility of errors in assessing tying arrangements is magnified when we confront fragile theories of tying with imperfect information concerning marketplace realities. As Whinston noted in 1990:

While the analysis vindicates the leverage hypothesis on a positive level, its normative implications are less clear. Even in the simple models considered here, which ignore a number of other possible motivations for the [tying] practice, the impact of this exclusion on welfare is uncertain. This fact, combined with the difficulty of sorting out the leverage-based instances of tying from other cases, *makes the specification of a practical legal standard extremely difficult.*¹⁶⁵

No matter what legal standard is chosen, the errors will go both ways: some ties that are harmful will be blessed and some ties that are beneficial will be condemned.

Determining the right legal standard depends on prior beliefs concerning the prevalence of harmful tying and the ability of the courts to separate harmful from beneficial tying.¹⁶⁶ Do we believe that tying is generally efficient? Do we believe that the courts can make decisions with a high degree of accuracy? A per se illegal rule is most appropriate if one believes that tying is frequently harmful and that the courts cannot accurately separate harmful from beneficial ties. In this case, it is better to condemn all ties than to risk approving many harmful ties only to save a few beneficial ties. A per se legal rule is most appropriate in the reverse case. Letting a few harmful ties through is a small price to pay for allowing businesses to engage in beneficial ties without the risk of erroneous condemnation. Between these two extremes one progresses from modified per se illegal (*Jefferson Parish*), to rule of reason (*Microsoft III*), to modified per se legal (*Hylton-Salinger*).¹⁶⁷

¹⁶⁵ Whinston, *supra* note 134, at 855–56 (emphasis added).

¹⁶⁶ For a formal approach to this issue, see Hylton & Salinger, *supra* note 142.

¹⁶⁷ *Id.*

Under the modified per se legal standard tying arrangements would be considered legal unless there is strong evidence that there are significant anticompetitive effects that outweigh procompetitive effects. The technological tying cases in the U.S. seem to adopt this approach.¹⁶⁸

We believe that the weight of the evidence favors either a rule of reason approach (based on the three screens we discussed above) or a modified per se legal approach (one can view the modified per se legal approach as a version of rule of reason in which the burden of proof for establishing anticompetitive effects is high). By the same token, we believe there is no support in economics for treating tying practices under either a per se or modified per se illegality rule. Tying is widespread in the economy and has such beneficial effects on the cost and quality of products that consumers obtain. One must therefore assume that it is generally procompetitive. There is no reason to believe that practices that generate efficiencies when firms lack market power do not generate those same efficiencies when firms possess market power. We do not believe that economic theory or empirics are refined enough to distinguish procompetitive from anticompetitive tying in practice—a point that is echoed by several of the authors of theories of tying.¹⁶⁹ We have no reason to believe that courts or competition authorities possess more reliable methods for separating good ties from the bad. In a recent study, Barry Nalebuff

¹⁶⁸ See, for example, *ILC Peripherals Leasing Corp. v. BM Corp.*, 448 F. Supp. 228 (N.D. Cal. 1978), *affirmed*, 636 F.2d 1188 (9th Cir. 1980), *cert. denied*, 452 U.S. 972, 101 S.Ct. 3126 (1981); and *Foremost Pro Color v. Eastman Kodak Co.*, 703 F.2d 534 (9th Cir. 1983), *cert. denied*, 465 U.S. 1039, 104 S. Ct. 1315 (1984). For further detail, see HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY* §§ 7.8 & 10.4 (1999).

¹⁶⁹ See Whinston, *supra* note 134, at 855–56; and Carlton & Waldman, *supra* note 138. Likewise, Whinston (2001) states, “What is striking about the area of exclusive contracts and tying, however, is how little the current literature tells us about what these effects are likely to be. This state of (non) knowledge is, I think, responsible to a significant degree for the very strong but differing beliefs that economists often have about whether exclusive contracts and tying are likely to have welfare-reducing anticompetitive effects.” Michael D. Whinston, *Exclusivity and Tying in U.S. v. Microsoft: What We Know, and Don’t Know*, 15 J. ECON. PERSP. 63 (2001).

and David Majerus have evaluated 13 legal cases in which bundling and tying were the issues.¹⁷⁰ They conclude that in most of those cases the authorities and courts make significant errors.¹⁷¹

Where we should be between the rule of reason and modified *per se* legality is a harder judgment. We leave that question for another day. It may be that certain classes of tying arrangements should fall into modified *per se* legality—that is the case with technological tying cases under U.S. law. It may be that other classes of tying cases—contractual ties by firms with significant market power—should fall under rule of reason. It is also quite possible that applying the structured rule of reason approach we have suggested will lead, *de facto*, to modified *per se* legality if, in practice, tying arrangements do not pass the first two screens.

VII. Conclusion

Having reviewed the development of legal and economic thinking on tying in both the United States and the European Union, we are now in the position to draw the following conclusions.

Contrary to conventional (and legal) wisdom,¹⁷² we find that there is no intellectual gulf between the Chicago and post-Chicago economic schools. Most economists now would agree on three fundamentals. First, tying is a pervasive practice that, in many instances, gives rise to substantial efficiencies, particularly when it takes the form of product integration. Second, the circumstances in which tying would lead to anticompetitive effects are very restricted. And third, not only are those conditions hard to verify, but also any

¹⁷⁰ See part 2 of the study by Nalebuff, *supra* note 140.

¹⁷¹ “Broadly speaking, there are three potential reasons why we see tied sales: (1) preservation of quality; (2) price discrimination or metering; and (3) leveraging market power. The court decisions have focused on market leverage, while we find the first two explanations more compelling. See NALEBUFF, *supra* note 140, at 70.

¹⁷² “Post-Chicago economic analysis was borne out, and in essence is defined by, criticisms of the Chicago School.” DORIS HILDEBRAND, *THE ROLE OF ECONOMIC ANALYSIS IN THE EC COMPETITION RULES* (2d ed. 2002).

attempt to balance efficiency gains against possible anticompetitive effects will prove a complex exercise. Plaintiffs and competition authorities that look toward modern economic theories of tying to bolster the harsh *per se* prohibitions against tying would be well advised to look at the “product warnings”—quoted above—that economic scholars have placed on their theories. No serious economic writing supports a *per se* rule and most recognize the difficulty of discerning anticompetitive tying at all.

This consensus among economists has important policy implications. The recognition of efficiencies as well as possible anticompetitive effects suggests that *per se* rules are conceptually inappropriate for the analysis of tying. In other words, economic theory points to a rule of reason approach along the lines suggested in our three-stage analysis (see section VI.A). But, as is evident from our suggested methodology, such an analysis is resource-intensive and may prove inconclusive. The competition authorities, therefore, have the difficult choice between an approach that is conceptually sound but subject to considerable practical difficulties and an approach that is conceptually second-best but is easier to implement. This decision should consider whether the conceptual errors under the *per se* rule are more problematic than the implementation errors that would result from a rule of reason.

Of the three policy options opened to the authorities, *per se* prohibition is clearly the least attractive. It would kill a large number of efficiency-enhancing practices with no anticompetitive effects to catch just a small number of anticompetitive effects. The remaining choice between a rule of reason approach and *per se* legality is more difficult and, as we have suggested, may depend on the class of tying arrangements (technological vs. contractual) under consideration.

In antitrust, it generally takes time for developments in economic theory to lead to corresponding changes in competition policy. The time lag has proved to be particularly long for tying. The hostility of the antitrust approach toward tying on both sides of the Atlantic still reflects (to a greater or lesser extent) elements of pre-Chicago school thinking.

Despite the persistent pre-Chicago school elements in both the U.S. and the EU, there is a fundamental difference between the two policy systems: while EC competition policy has largely been static in its assessment of tying over the last 40 years, U.S. antitrust has slowly followed economic thinking from an extreme per se prohibition to a modified per se rule to a rule of reason, albeit in limited circumstances. Clearly, *Microsoft III* is not yet the end of the line. It should be the beginning of the line in the European Union.