

A Comprehensive Economic and Legal Analysis of Tying Arrangements

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I. INTRODUCTION

The law of tying arrangements as it stands does not correspond with modern economic analysis. Therefore, and because tying arrangements are so widely common, the law is expected to change and extensive academic writing is currently attempting to guide its way.

In tying arrangements, monopolistic firms coerce consumers to buy additional products or services beyond what they intended to purchase.¹ This pressure can be applied because a consumer in a monopolistic market does not have the alternative to buy the product or service from a competing firm. In the absence of such choice, the monopolistic firm can allegedly force the additional purchase on the consumer at non-beneficial terms. The “tying product” is the one the consumer wants to buy, and the product the firm attaches to the tying product is termed the “tied product.”²

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1. In a competitive market, consumers can choose to buy from firms that do not tie products, as opposed to ones that do. The tying firm, in such a case, would then lose out. At the same time, it is possible that in a competitive market, some products would still be offered together because it would be beneficial to both producers and consumers.

2. It can sometimes be difficult to differentiate between the tying of *two separate products* and the sale of *two components forming a single whole product*. For example, does selling a pair of shoes (instead of selling each shoe separately) constitute tying? Clearly, almost every product is comprised of a number of components. If, as a result, we treat most existing products as having within themselves a tying of products, then imposing restrictions on this sort of tying would be very burdensome on markets. Therefore, tying is commonly defined as where two separate products, with separate demand, are sold together. *See, e.g.,* Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 19 (1984); HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE 453–54 (4th ed. 2011); David E. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 YALE J. ON REG. 37, 42 (2005). Because there is almost no demand for single shoes, selling a pair of shoes does not constitute tying. However, it is important to note that even this definition is not free of concern, since in many cases products that at a certain time are considered separate and have separate demand may in time become one product in consumers’ minds. Cellular phones illustrate this situation well, as

In principle, there are three ways to tie products: (1) *Contractual tying*, which, as the name implies, takes place when the monopolistic firm requires the buyer in the purchase agreement to purchase the tied product as well; (2) *Technical tying*, which occurs when the monopolistic firm technically links the tying product and the tied product together so that the consumer is forced to purchase both of them;³ and (3) *Tying through “economic coercion,”* which takes place when the monopolistic firm offers both products, the tying and the tied, together, at a discount so significant that it actually negates the consumer’s economic freedom not to purchase the tied product.⁴

The historical concern regarding tying arrangements was that a firm holding monopoly power would charge a monopolistic price for the tied product as well as for the tying product, thus leveraging its power into an additional market.⁵ Another concern was that the tying arrangement would create a significant barrier to entry into the markets of both products, since potential competitors might, due to the tying, be required to enter both markets in parallel.⁶ Thus, the monopolistic firm could theoretically extend its period of monopoly. These concerns led the Supreme Court to impose severe restrictions on tying arrangements employed by monopolistic firms.⁷ However, as will be shown, modern economic analysis reveals that the concern was probably exaggerated, and more importantly, that tying arrangements may have significant pro-competitive efficiency justifications.

Part II will present a comprehensive economic analysis that demonstrates that tying arrangements, despite their anticompetitive potential, also hold exceedingly significant pro-competitive efficiency potential. Part II will then review and critique the current law relating to tying arrangements.

In Part III, I will present the potential legal rules for analyzing tying arrangements and the two leading approaches in academic writing regarding their appropriate implementation—the approach of the Chicago-

they currently include such devices as cameras, music players, alarm clocks, calendars, and more. Obviously, when the camera was first added to the cellular phone, these were two separate products, each of which had separate demand. Now, since it appears that there is probably no longer any demand (certainly not significant demand) for cellular phones without cameras, according to the definition they would be seen as two components of one product. For a discussion regarding “new” products, see, for example, HOVENKAMP, *supra*, at 454–55.

3. The monopolistic firm designs the products so that the consumer is forced to purchase both the tying and the tied products.

4. See, e.g., HOVENKAMP, *supra* note 2, at 448–53.

5. See *infra* Part II.A.1.

6. See *infra* Part II.B.2(b).

7. See *infra* Part III.

Harvard Schools and the approach of Professor Einer Elhauge.⁸ In Part IV, I will discuss various tying scenarios and present my position regarding their appropriate legal analyses. In concurrence with the Chicago-Harvard Schools' approach, I support the implementation of the legal per se rule for tying arrangements that do not foreclose the tied product's market. However, for tying arrangements that do foreclose the tied product's market, I will propose, based on economic theory and empirical evidence, the implementation of a rule of reason analysis that does not raise a presumption against the tying arrangement.

Lastly, Part V will conclude the discussion.

II. ECONOMIC REVIEW

The first section of this Part presents the historical theory and economic analysis that led to imposing restrictions on tying arrangements. This review focuses on the development of the leverage theory from its inception to the present day. In the second section of the Part, I will review the possible incentives for using tying arrangements according to modern economic analysis. Tying arrangements may promote distinct efficiency outcomes in many cases, but in others, they can lead to the realization of monopolistic and anticompetitive effects. In addition, there are several tying arrangement scenarios that could have benign or mixed outcomes. The third section of this Part further details the controversy between the theorists of the Chicago and Harvard Schools and Professor Elhauge on the issue of the potential benefit versus the potential damage entailed in tying arrangements.

8. The review will demonstrate that there are tying scenarios where both approaches present similar legal positions, while in other scenarios, a significant gap between them remains. When tying the products does not lead to a significant closure of the tied product market, the Chicago-Harvard School proposes determining that the tying should be legal per se. In contrast, Professor Elhauge suggests that the legal per se rule should only apply when the tied product market is not foreclosed and while the tying and the tied products are tied in fixed proportions. When the tying is not of a fixed ratio, Professor Elhauge advocates the implementation of the "quasi-per se" rule, whereby the tying firm should bear the onus of proving competitive justifications for its implementation. In tying scenarios leading to a significant closure of the tied product market, both approaches suggest applying a presumption that the tying arrangement harms competition. Thus, the tying firm must provide efficiency justifications in order for the arrangement not to be prohibited. Some of the Chicago School theorists, however, advocate applying the legal per se standard to all tying arrangements, including those foreclosing the tied product market. *See infra* Part IV.

A. The Leverage Theory—Historical Review

1. The Leverage of Monopoly Power

The leverage theory has largely determined the legal restrictions on using tying arrangements.⁹ According to this theory, the monopolistic firm ties the products together so it can extract a double monopolistic profit for both the tying product and the tied product.¹⁰ The harm to competition, according to the leverage theory, is twofold. First, the leverage enables the monopolistic firm to extract a monopolistic profit in an additional market. Second, it excludes firms from the tied product market, or at least from the segment of the market taken over by the tying firm.

2. The Single Monopoly Profit Theory

With the development of the Chicago School, theorists raised the argument that the leverage of monopolistic power is not plausible due to the single monopoly profit theory.¹¹ According to this theory, a firm with monopolistic power in a particular product market cannot increase the monopolistic profit it already earns through tying an additional product.¹² For example, assume that the manufacturing cost of bolts is 10 cents per unit, the manufacturing cost of nuts is similar, and that a monopolistic manufacturer of both products charges an optimal monopolistic price of 40 cents for both together. In this scenario, the monopolistic manufacturer makes a total monopolistic profit of 20 cents. Now let us assume an alternate scenario in which the nut market is competitive and hence, the price of each nut is 10 cents (since in a competitive market, the product's price equals its manufacturing cost). In this scenario, the monopolistic manufacturer, who produces both bolts and nuts, can charge a price of 30 cents for each bolt, so that a set of one bolt and one nut will cost 40 cents, thus earning 20 cents as a monopolistic profit.¹³

9. See *infra* Part III.

10. For a review of the leverage theory, see ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 365–66 (rev. ed. 1993) (1978); HOVENKAMP, *supra* note 2, at 420–21; RICHARD A. POSNER, *ANTITRUST LAW* 197 (2nd ed. 2001).

11. See generally Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 926 (1979).

12. See BORK, *supra* note 10, at 372–75; POSNER, *supra* note 10, at 197–99; Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19, 20–23 (1957); Aaron Director & Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281, 290–92 (1956); Posner, *supra* note 11, at 926; Keith K. Wollenberg, *An Economic Analysis of Tie-In Sales: Re-examining the Leverage Theory*, 39 STAN. L. REV. 737 (1987).

13. This example is taken from Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397, 403–04 (2009).

Therefore, the monopolistic profit for the combination of bolts and nuts is the same as the monopolistic profit for bolts alone. Consequently, a monopolistic manufacturer of bolts cannot make an additional monopolistic profit even if it ties the sale of bolts to the sale of nuts.¹⁴ A few of the Chicago School theorists, based on this theory, have concluded that the reasoning behind tying arrangements must be pro-competitive, and therefore they ought to be legal per se.¹⁵

3. Post-Chicago Writing: Scenarios in Which Leveraging Monopolistic Power May Be Possible

After the single monopoly profit theory was introduced, Post-Chicago School theorists started presenting various economic models to explain how firms could increase their monopolistic profits through tying (this refers to profits not resulting from improved efficiency).¹⁶ Certain models demonstrate how firms can leverage monopolistic power to the tied product market, given certain circumstances, and other models illustrate how the monopolistic firm can increase its monopolistic profits in the tying product market.

Leveraging monopolistic power and extracting additional monopolistic profit in the tied product market may be possible under the following circumstances:

- the tied product has a usage complementary to the tying product, but also an independent usage;
- size possesses a dimension of efficiency in the tied product market; and
- the tying leads to a significant closure of the tied product market.

Let us assume that all three conditions are met in the following example. A monopolistic manufacturer of machines that inject salt into cans of food forces the machines' users to purchase the salt in combination with the machine.¹⁷ The machine is the tying product and the tied

14. Moreover, it would be worthwhile for the monopolistic manufacturer of bolts for competition to exist in the nuts market. Let us assume that the competition in the nuts market led to a reduction in the price of each nut to 5 cents (due to increased production efficiency). In this situation, the monopolistic manufacturer of bolts would raise the price to 35 cents per bolt, so that the price of a set would remain 40 cents, but now the manufacturer's monopolistic profit increases to 25 cents. See BORK, *supra* note 10, at 373; W. KIP VISCUSI, JOSEPH E. HARRINGTON, JR. & JOHN M. VERNON, *ECONOMICS OF REGULATION AND ANTITRUST* 267 (4th ed. 2005) [hereinafter VISCUSI ET AL.].

15. See, e.g., BORK, *supra* note 10, at 380–81.

16. See, e.g., Elhauge, *supra* note 13; VISCUSI ET AL., *supra* note 14.

17. This example is loosely based on the circumstances of *Int'l Salt Co. v. United States*, 332 U.S. 392 (1947), which will be discussed *infra* Part III.

product is the salt. In this example, competing salt manufacturers will lose size efficiency due to the tying, and therefore may be driven out of the market. Alternatively, they may continue producing salt, but at lower efficiency and hence at higher costs. Consequently, the tying firm could charge consumers, whose demand for salt is independent of and separate from the demand for the machines, supra-competitive prices.¹⁸

Another possible leverage scenario arises in the context of “subsequent” products. In this scenario, a monopolistic product is expected to be replaced by a next-generation product. Therefore, the monopolistic firm may tie its product to the next-generation product so that when the upgraded product becomes established, the firm’s monopolistic power transfers to the new product.¹⁹ This is not a simultaneous leverage of monopolistic power enabling a monopolistic profit to be made for two separate products in parallel, but rather the leverage of “subsequent” monopolistic power from the present to the future product market.²⁰

B. The Various Economic Incentives for Tying Arrangements

As stated above, it was due to the leverage theory that the restrictions upon tying arrangements were originally imposed. Today, modern economic analysis grants significance to additional rationales for implementing tying arrangements. This section will review the efficient pro-competitive, the anticompetitive, and the ambiguous rationales.

1. Pro-Competitive and Efficiency-Promoting Tying Arrangements

In this subsection we will extensively review the scenarios in which the purpose of the tying is to increase efficiency. These scenarios support the argument that the legal restrictions imposed upon tying arrangements should be reduced.

(a). Tying as a Means of Improving the Product

Many tying arrangements (especially technical tying arrangements) improve the tying product or create a new, upgraded one. Until a few years ago, for example, cellular phones were just phones. Now, the device also includes a camera, a video camera, the ability to surf the internet, and more. All of these new additional functions have turned the device into an upgraded one that consumers prefer. This sort of tying, based on the desire to create an improved product, likely plays a central role in

18. See Elhauge, *supra* note 13, at 413–17; VISCUSI ET AL., *supra* note 14, at 278–85.

19. See 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).

20. See HOVENKAMP, *supra* note 2, at 461; Carlton & Waldman, *supra* note 19.

high technology and new economy markets. These areas of industry—in which innovation and investment in research and development are very high—are characterized by the upgrading and integration of various products, functions, and features. Therefore, in principle, the widespread technical tying of products benefits consumers and the economy.²¹

(b). Tying as a Means of Saving Production Costs

It is often cheaper to join or combine products during the manufacturing process.²² For example, when manufacturing vehicles, it is presumably cheaper and easier to install windshield wipers, air conditioners, radio systems, and spare tires in the production line assembly. In the past, the car could be purchased without these features, but today it is cheaper to get them all at once than to add them one at a time. In addition, it is often not economically worthwhile for the manufacturer to set up several production lines to give the consumer the option to buy the car with or without the tied product. Also, the tying may lead to maximizing size efficiency if, as a result, the quantity produced by the manufacturer of both the tying and the tied products increases.²³

(c). Tying as a Means of Reducing Marketing Costs

Tying products and marketing them together can also reduce their overall marketing costs. One example is an electronic product manufacturer that has to decide whether to market the product together with the batteries required for its operation. If the manufacturer is required to offer consumers both the option of purchasing the product with the batteries and also the option of purchasing it without the batteries, the product's marketing costs may rise significantly. This is because a double marketing system for these two options would involve additional costs in handling, packaging, storing, shipping, maintaining a constant supply of both options, and so on.²⁴ In other cases, combining the marketing of two products saves internal administrative costs simply because it might be cheaper to unify the customer service system so that it provides solutions to the range of services or products marketed.²⁵

21. See, e.g., VISCUSI ET AL., *supra* note 14, at 276–80. For further discussion, see, for example, BORK, *supra* note 10, at 378–79.

22. See, e.g., BORK, *supra* note 10, at 378–79; Evans & Salinger, *supra* note 2, at 52–66.

23. BORK, *supra* note 10, at 378–79; see also PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION* ¶ 1717b1 (3rd ed. 2007); Evans & Salinger, *supra* note 2, at 75–82.

24. See AREEDA & HOVENKAMP, *supra* note 23, ¶ 1717d2; Evans & Salinger, *supra* note 2, at 52–66.

25. See AREEDA & HOVENKAMP, *supra* note 23, ¶ 1717b1; BORK, *supra* note 10, at 379; HOVENKAMP, *supra* note 2, at 457–58.

(d). *Tying as a Means of Protecting Reputation*

In some cases, using the tying product necessitates the use of accompanying complementary products. If the complementary products do not meet certain criteria and standards, the operating quality of the tying product could be reduced, which could have negative implications for its reputation. To overcome this concern, firms can tie the complementary products to the tying product to ensure that the complementary products meet all the requirements necessary for the proper operation of the tying product. IBM,²⁶ International Salt,²⁷ and Jerrold Electronics²⁸ all relied on this justification for their tying arrangements.

One might ask why the tying is necessary since it would theoretically be sufficient for the firm to just inform buyers of the advantages and necessity of purchasing all the complementary components from it directly. After all, the firm and the purchasers share a common interest in the product's proper operation. The answer may be that the attempt to persuade or inform all consumers regarding the need to purchase the complementary products from the firm in order for the product to operate correctly could be more expensive than tying the products. Also, we can assume that there will always be some consumers who will be suspicious of the firm's motivations when it offers to sell them additional products.²⁹

Additionally, the firm could, as a substitute for the tying, list the technical requirements for the complementary products so consumers could buy these products in the open market. This alternative, however, may prove to be more expensive than the possibility of tying, since it is very difficult to ensure that consumers will indeed purchase complementary products that meet the requirements.³⁰ In addition, there would probably be many cases in which the consumers themselves would lack the required expertise to correctly evaluate the suitability of the competitors' complementary products to the firm's product requirements.³¹

Finally, the tying can be a means of dealing with a "free rider" problem, as in the case of Chicken Delight.³² Chicken Delight licensed franchisees to operate its restaurants and required them to purchase the

26. See *Int'l Bus. Machs. Corp. v. United States*, 298 U.S. 131 (1936).

27. See *Int'l Salt Co. v. United States*, 332 U.S. 392 (1947).

28. See *United States v. Jerrold Elecs. Corp.*, 187 F. Supp. 545 (E.D. Pa. 1960), *aff'd per curiam*, 365 U.S. 567 (1961).

29. See AREEDA & HOVENKAMP, *supra* note 23, ¶ 1717b; POSNER, *supra* note 10, at 201.

30. See, e.g., Michael A. Salinger, *Business Justification Defenses in Tying Cases*, in *ISSUES IN COMPETITION LAW AND POLICY 1911, 1923* (Wayne D. Collins ed., 2008).

31. See AREEDA & HOVENKAMP, *supra* note 23, ¶ 1716a; BORK, *supra* note 10, at 379-81; and VISCUSI ET AL., *supra* note 14, at 268.

32. See *Siegel v. Chicken Delight, Inc.*, 448 F.2d 43 (9th Cir. 1971).

kitchen equipment and certain supplies.³³ This was to keep franchisees from buying cheaper, lower quality kitchen equipment and supplies from a competing source while relying on the chain's general reputation for their sales.³⁴

(e). Tying as a Means of Reducing the Risk Involved in Entering the Market

Tying arrangements may serve to reduce the sunk and fixed costs required to enter markets, as illustrated in the context of franchising agreements.³⁵ Assume that the market value of a franchise license of a well-known food chain amounts to \$1,000,000. The franchisee is making a very dangerous investment. If the venture fails, this large sum will be lost. Therefore, the food chain can sell the franchise for a reduced price, say \$200,000, but tie the franchise to the various products distributed through the franchise at prices higher than their market price. Thus, the chain reduces the entrepreneur's sunk and fixed costs, but increases the entrepreneur's variable costs. If the venture fails, the entrepreneur will lose only the sunk and some of the fixed costs, which are significantly lower in this situation. In contrast, if the venture succeeds, the chain will charge the real market value for the franchise through the payments for the tied products it supplies to the franchisee. Consequently, the food chain reduces the risk involved in entering the market on the entrepreneur's part, as well as the barrier to entry involved in raising the capital. In addition, by so doing, the food chain can signal to other potential entrepreneurs that the prospects for a new franchise's success are high because the food chain can only make a profit if the franchisee succeeds.

2. Anticompetitive Tying Arrangements

(a). Tying Serving to Leverage Monopolistic Power

As evident from the discussion in Part II.A.3 above, in theory, leveraging monopolistic power is possible when:

- the tied product has a complementary usage but also an independent one;
- the tying closes a significant segment of the tied product market; and

33. *See id.*

34. *See* VISCUSI ET AL., *supra* note 14, at 268.

35. *See* Erik Hovenkamp & Herbert Hovenkamp, *Tying Arrangements and Antitrust Harm*, 52 ARIZ. L. REV. 925, 964–66 (2010).

- a significant size efficiency dimension in producing the tied product exists.

In such a scenario, tying that forecloses a significant segment of the tied product market harms competing firms' efficiency. As a result, these firms will lose part of their ability to compete, and might have to leave the market completely. Thus, the tying firm can obtain monopolistic profits from those consumers who purchase only the tied product separately.

While this scenario is possible at the theoretical level, it is not very probable. First, the tying firm has to invest the resources necessary to manufacture the output required to foreclose the tied product market to earn only a limited monopolistic profit for a small part of this manufactured quantity. Second, if the tied product market was competitive prior to the tying, then we must assume that at a certain production stage the size efficiency is exhausted. From this point onwards, additional production is less efficient, making the additional growth in production an efficiency disadvantage. In such a situation, inefficient manufacturing of the tied product by the tying firm would reduce its monopolistic profits. Third, in order for the leveraging scenario to succeed, there must be high barriers to entry to the tied product market; otherwise, new competitors would enter this market and lower the tied product's price.

The other leverage scenario presented in Part II.A.3 above involves leveraging monopolistic power to a "subsequent" product that is expected to replace the existing product in the future. In this scenario, the manufacturer with market power for the current product may tie both generations' products (to the extent that this is possible) in order to leverage or transfer its monopolistic power to the new product.³⁶ However, it is not clear how probable this scenario is because it requires the tying of two products which serve a similar consumer function (as we assume that one product is supposed to replace the other). In addition, competing firms may succeed in manufacturing the new generation product before the current manufacturer does, and thus win the market.

(b). Tying as a Means of Raising Market Barriers to Entry

Tying may raise barriers to entry into the tying or the tied product market, since it may compel a new manufacturer to enter both markets simultaneously, consequently bearing higher entry costs and risk levels.³⁷ For example, assume that there is a monopolistic manufacturer of home computers that ties the computer to the computer screen it manufactures.

36. See Carlton & Waldman, *supra* note 19.

37. See HOVENKAMP, *supra* note 2, at 461-62.

In addition, assume that prior to the tying, the computer screen market was competitive. Because computer screens are used predominantly in combination with home computers, the tying drives all competing computer screen manufacturers out of the market. In this situation, a competitor interested in entering the home computer manufacturing market would be forced to enter the computer screen manufacturing market as well.

However, there are several considerations that weaken the validity of this argument and make it less probable. First, the tying may be efficient. In this case, the raising of barriers to entry would merely constitute a side effect to the desirable aims behind the tying.³⁸ Second, if the tying is inefficient, the tying firm becomes an easier target for potential competitors because it is easier to compete with an inefficient firm than with an efficient one. Assuming that the tying is not efficient, a new computer manufacturer and a separate computer screen manufacturer could coordinate with one another, and each enter the relevant market and compete more successfully with the monopolistic firm.³⁹ Third, the tying firm must invest the resources necessary to manufacture the output required to foreclose the tied product market. Supposing that the tied product market was competitive prior to the tying, producing all (or most) of the market output would probably be less efficient, and therefore would reduce the firm's monopolistic profit. Finally, this scenario requires high barriers to entry to both the tying and the tied product markets.

(c). Evading Price Control

Tying may be profitable when a monopolistic firm's prices are subject to regulatory control so that the firm cannot charge the full optimal monopolistic price for the product. The tying of an unregulated product enables the monopolistic firm to charge a supra-competitive price for the tied product. By so doing, the firm could extract the monopolistic profit withheld from it due to price control over the tying product.⁴⁰ Manufacturers of public utilities—electricity, water, telephony, etc.—are best suited to use such tying arrangements because, in numerous cases, these manufacturers constitute natural monopolies or possess a monopolistic

38. In this context it should be noted that improving efficiency in general constitutes a barrier to entry, because now new firms will also have to increase their efficiency in order to compete. Antitrust law should not condemn firms for applying cost-reducing measures, even if by so doing, they harm competitors. See, e.g., James C. Cooper et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639, 647 (2005).

39. See BORK, *supra* note 10, at 374–75; HOVENKAMP, *supra* note 2, at 462. However, we cannot ignore that the need to coordinate entry with another manufacturer involves additional costs and risks.

40. See HOVENKAMP, *supra* note 2, at 464–66; see also BORK, *supra* note 10, at 376.

status granted by law; in other words, their prices are controlled and the demand flexibility is usually low at the price point determined by the regulator (consequently the profit could increase significantly if the price were raised).⁴¹

Assume that a firm has an exclusive license to provide telephone services and that its rates are under supervision. As a result, the firm cannot charge the optimal monopolistic price for its services. However, if the firm ties the provision of telephone services to the supply of telephones, it can charge a high price for the telephones (assuming that the telephones' price is not controlled), thus increasing its monopolistic profits.⁴²

(d). Tying as a Means to Prevent Entry into the Tying Product's Market

In the past few years, a theory that is a clear outcome of the *Microsoft* case⁴³ has been developed, which attempts to demonstrate specific circumstances in which tying could be anticompetitive. This is a scenario in which the tying prevents entry into the tying product market. There are two conditions necessary for this scenario to be realized. First, the tied product can only be used with the tying product. Second, by producing the tied product, a competitor would be able to enter the tying product market in the future. Therefore, if the tying forecloses the tied product market, the tying firm could thus prevent the entry of competing firms into the tied product market and, subsequently, to the tying product market.

The *Microsoft* case elucidates this theory. Microsoft was deemed to have a monopoly in the market of operating systems for home computers (the Windows software), and enjoyed "network externalities" (occurring whenever consumers benefit from the increase in the number of consumers).⁴⁴ Microsoft, it was argued, feared the entry of Netscape into the Internet browser market through Netscape Navigator, which became successful and was widely used by consumers. Microsoft allegedly feared

41. See BORK, *supra* note 10, at 376.

42. Some consider this scenario as a sort of "leveraging," but in fact, the monopolistic firm uses the tying in order to exhaust the monopolistic profit denied in the tying product market. The monopolistic firm cannot extract monopolistic profit from *both* the tying and the tied product markets. See VISCUSI ET AL., *supra* note 14, at 275–80.

43. See *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).

44. An example of this phenomenon is the telephone market, in which the more consumers who are connected to the network, the greater the benefit each consumer derives from the product. Regarding Microsoft, it was argued that developers prefer to develop applications for the operating system that has the most users in order to increase their sales. Therefore, the more widespread the operating system is, the more applications will be created for it. This, in turn, will increase consumer demand for the software. In such markets there is a tendency for the formation of dominance of the first firm able to create a network of consumers. See, e.g., VISCUSI ET AL., *supra* note 14, at 316–17.

that Netscape would establish a network of consumers for Navigator that would enable it, in the future, to upgrade the Navigator software so it could serve as a substitute for Microsoft's Windows software.⁴⁵ Therefore, Microsoft decided to eradicate its potential rival by developing its Internet browser, Internet Explorer, and tying it to the Windows software. Since computer purchasers did not require two Internet browsers, Netscape was rapidly pushed out of the market.⁴⁶

(e). Tying Arrangements as a Means of Establishing Oligopolistic Cooperation

Tying arrangements can facilitate oligopolistic collusion when the tying firms require consumers to purchase the tied product at a particular price, unless there is another firm offering the product at discount.⁴⁷ If the prevailing market price of the tied product is higher than the competitive price as a result of oligopolistic or cartelistic collusion, then such tying may actually help to reinforce the collusion. In fact, the consumers will seek out the firms that sell the tied product at discount. As a result, the firms producing the tied product will find it increasingly difficult to deceive each other, so their collusion will become more robust.⁴⁸

This scenario, however, is less relevant to the topic of this Article, since it does not necessitate the existence of monopolistic power. Therefore it is reasonable that the collusion among the tying firms would be tested according to the rules dealing with concerted actions, rather than according to monopolistic unilateral conduct analysis.

(f). Tying as a Means for Predatory Behavior

Predatory pricing may occur when a monopolistic firm sells its product at a price lower than its manufacturing cost. Thus, some argue, the monopolistic firm may drive competitors out of the market.⁴⁹ Similarly, the monopolistic firm can sell the tied product at a significant discount, or even for free. If the total price for the bundled products is lower than its overall manufacturing cost, then a similar effect to that of predatory pricing may occur.⁵⁰

45. See *Microsoft Corp.*, 253 F.3d at 53–55.

46. See VISCUSI ET AL., *supra* note 14, at 275–80, 332–42; Elhauge, *supra* note 13, at 417–18.

47. For this type of tying arrangement, see, for example, *Int'l Salt Co. v. United States*, 332 U.S. 392 (1947) and *N. Pac. Ry. Co. v. United States*, 356 U.S. 1 (1958), discussed in more detail *infra* Part II.

48. See HOVENKAMP, *supra* note 2, at 463–64.

49. See, e.g., *Matsushita Elec. Indus. v. Zenith Radio Corp.*, 475 U.S. 574, 588–90 (1986); see also *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 226–27 (1993).

50. See, e.g., HOVENKAMP, *supra* note 2, at 403–07.

3. Tying Arrangements with Ambiguous Effects

(a). *Tying as a Means of Price Discrimination and Metering the Extent of Product Use*

Monopolistic firms can use tying arrangements to effectively price discriminate and extract the maximal price (or close to it) that each of their consumers is willing to pay for the product. Thus, the monopolistic firm can increase its profit beyond the profit level that it could extract by setting a single effective price for all purchasers.⁵¹ In principle, there are three factors that usually prevent price discrimination: (1) the monopolistic firm usually does not know each consumer's maximal price because consumers have no interest in revealing this information, and an attempt to obtain it would, in most cases, be very costly; (2) arbitrage markets; and (3) antitrust restrictions on price discrimination.⁵²

The monopolistic firm can nevertheless price discriminate under the following cumulative conditions: (1) the tied product is a complement to the tying product and is used in varying amounts with the latter; and (2) the usage of the tied product varies for different purchasers in a way that positively correlates to the value of the tying product to each purchaser.⁵³ For example, purchasers of printers who use more ink than other purchasers utilize their printers more frequently and derive more value from their use. Therefore, a monopolistic manufacturer of printers can tie the sale of the printers to the ink, while charging a lower price for the printer (perhaps even the competitive price), but a higher price for the ink. Thus, effectively, the manufacturer succeeds in extracting higher prices from the consumers who have greater appreciation for the use of the printers and make greater use of them. At the same time, consumers whose demand for printers is lower, make less use of the printers, thus consuming less ink, and therefore pay an effectively lower price.⁵⁴

The effects of these tying arrangements are not necessarily detrimental. While, on one hand, this tying allows the monopolistic firm to extract the consumer surplus, on the other hand, it could increase the output manufactured.⁵⁵ The greater the quantity produced, the smaller the

51. See BORK, *supra* note 10, at 376–77; see also HOVENKAMP, *supra* note 2, at 467.

52. See Robinson–Patman Act, 15 U.S.C. § 13 (1936).

53. See BORK, *supra* note 10, at 376–77; see also HOVENKAMP, *supra* note 2, at 467.

54. The tying makes it possible to distinguish between consumers who appreciate the product more or less. There is no possibility of arbitrage because, formally, all consumers pay the same price for the printer and for each unit of ink; therefore, the tying does not violate the restriction on price discrimination.

55. If the monopolistic firm can sell the product to each consumer according to the maximal price the specific consumer is willing to pay, then the firm will produce and sell provided the cost of producing one unit of the marginal product is lower than the price the marginal consumer is willing

total welfare loss (known as the “dead weight loss”) would be, to the point of its complete cessation in cases of perfect effective price discrimination.⁵⁶ In addition, price discrimination that leads to production increase can also lead to realizing the size efficiency, thus reducing production costs.⁵⁷

Apart from price discrimination, tying can also serve to measure the extent of product use (metering), and accordingly, to determine the product’s appropriate price.⁵⁸ To return to the printer example, let us now assume that the machines are not sold to consumers but leased for a particular period of time, after which they are returned to the manufacturer. The extent of the machines’ use during the leasing period is directly connected to their amortization. The manufacturer can tie the leasing of the machines to the ink, and by so doing, the sale of the ink will cover the cost of the amortization resulting from the machines’ use. This rationale is also valid in scenarios where the manufacturer undertakes to maintain and repair the machines, since the manufacturer can return the additional costs involved through selling the ink to the lessees.⁵⁹ The tying in these scenarios is intended to set the real price for using the products, so it does not have an undesirable economic effect.

Finally, tying for the purpose of price discrimination is also feasible when products are tied using a fixed ratio. In these cases, price discrimination is possible if purchasers have a different evaluation of the worth of different products.⁶⁰ Such scenarios may exist, for example, in marketing films to television stations or distributing them to cinemas.⁶¹ Assume that two television stations, A and B, are interested in purchasing a license to show films produced by company Z, which has two films: X and Y. Station A is willing to pay \$7,000 for film X and \$3,000 for film Y, while station B is willing to pay \$3,000 for film X and \$7,000 for film Y.⁶² Also assume that company Z is forbidden from discriminating the prices of its films (for example, due to a legal prohibition). In this scenario, company Z can sell the license for showing film X to station A for \$7,000 and the license to show film Y to station B for \$7,000, and thus make a total of \$14,000. However, if company Z ties both films and charges a price of \$10,000 for the bundle, it can sell the package to both

to pay for it. So in cases of perfect price discrimination, the monopolistic firm will produce the competitive quantity and thus increase total welfare.

56. For a detailed mathematical explanation, see VISCUSI ET AL., *supra* note 14, at 271–75.

57. AREEDA & HOVENKAMP, *supra* note 23, ¶ 1717b1(B).

58. See BORK, *supra* note 10, at 377–78; HOVENKAMP, *supra* note 2, at 470.

59. BORK, *supra* note 10, at 377–78.

60. See GEORGE J. STIGLER, *THE ORGANIZATION OF INDUSTRY* 165–70 (1968).

61. See, e.g., *United States v. Lowe’s, Inc.*, 371 U.S. 38 (1962).

62. This numerical example is based, *inter alia*, on HOVENKAMP, *supra* note 2, at 471.

stations and make a total of \$20,000. The marketing of the package could be considered price discrimination since each station evaluates the worth of each film differently. In any case, this tying does not necessarily have an undesirable effect in terms of total or consumer welfare since it enables both films to be shown on both stations.⁶³

(b). Tying as a Means to Eliminate the Double Marginalization Problem

The double marginalization problem arises when two manufacturers (or service providers) with market power at adjacent vertical stages of production set supra-competitive prices independently.⁶⁴ Assume that a product is manufactured by one monopolistic firm and retailed by another monopolistic firm. The manufacturing firm will set the monopolistic price when it sells the product to the retailer, but the retailer will charge additional monopolistic rent from consumers. Hence, the final product's price will be higher than the optimal monopolistic price, while the output sold will be lower.⁶⁵ In this case, the manufacturer can integrate downstream to the retailing level by tying the product to its distribution and thus eliminate the double markups.⁶⁶ The double marginalization problem can also arise in the horizontal context, when two complementary products are sold by two monopolistic firms.⁶⁷ The elimination of the double markups increases output and lowers prices, and thus contributes to both total and consumer welfare.⁶⁸

(c). Extracting the Individual Consumer Surplus When the Consumer Purchases More than One Unit of the Tying Product

Professor Elhauge argues that in certain circumstances a monopolistic firm could extract the individual consumer surplus in addition to the monopoly surplus.⁶⁹ This situation could occur when the tying and

63. For additional references, see BORK, *supra* note 10, at 377–78; see also VISCUSI ET AL., *supra* note 14, at 269–70.

64. See, e.g., Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 58 J. POL. ECON. 347 (1950).

65. See, e.g., *id.*

66. See, e.g., HOVENKAMP, *supra* note 2, at 472–73.

67. See, e.g., Giuseppe Dari-Mattiacci & Francesco Parisi, *Substituting Complements*, 2 J. COMPETITION L. & ECON. 333 (2006). The theory can be traced back to Courno's analysis of the pricing of complementary products produced by monopolies. *Id.*

68. These tying arrangements, however, have the potential of raising barriers to entry into both product markets because new competitors would have to enter both markets simultaneously. Although the effects of these tying arrangements could, therefore, be argued to be ambiguous, empirical evidence, as will be elaborated *infra*, suggests that their net-effect is probably pro-competitive. See, e.g., Cooper et al., *supra* note 38, at 648.

69. See Elhauge, *supra* note 14, at 407–13.

the tied products are complementary products and when the consumer buys a certain quantity of the tying product, rather than just one unit.

Consider the printer market for example, with the tied product being the ink, where each large business and organization purchases a considerable quantity of printers. The firm could theoretically extract the consumer surplus—or at least part of it—by setting a monopolistic price for the printers and a higher than competitive price for the ink, while granting a quantity discount for any additional ink purchased.⁷⁰ This is based on the assumption that although the firm charges the monopolistic price for the printers, individual consumer surplus still remains because only the last printer purchased by the consumer creates a benefit worth the price.⁷¹ In fact, the previous printers purchased grant more gain than they cost.⁷²

The tying in this scenario would not increase the total welfare loss. It would, however, harm consumer welfare since it would transfer the consumer surplus to the monopolistic firm. It should be noted that in this scenario there is no leverage in the classic sense, but rather the extraction of the monopolistic surplus and the capturing of the consumer surplus for the tying product by the monopolistic firm.

It could actually be more profitable for the monopolistic firm to set the competitive price for the printers, with the price of ink being set at the highest level and decreasing gradually with each additional purchase. This way, the firm can extract the entire manufacturer surplus as well as the entire consumer surplus. In this situation, the market output would equal the competitive market output, and thus, despite the consumer welfare loss, the total welfare loss would be eliminated. Therefore, in consideration of the total welfare, this option is preferable to a situation of monopolistic pricing without tying.⁷³

70. *Id.*

71. *Id.*

72. *Id.*

73. It seems that the scenario where the monopolistic manufacturer extracts the individual consumer surplus is not probable for a number of reasons. First, it requires that consumers have similar individual diminishing marginal utility functions for the printers. Otherwise, the tying firm would have to implement a separate price plan of the tied product for each and every consumer—a task almost impossible to achieve. It would also be difficult to prevent arbitrage of the tied product, and perhaps setting different prices for different buyers would not be permitted under the Robinson-Patman Act, 15 U.S.C. § 13(a). Second, the tying firm would have to estimate the consumers' demand function in order to set the quantity discount plan for the tied product. However, according to economic theory, it is very difficult to estimate demand functions. For further discussion on this point, see AREEDA & HOVENKAMP, *supra* note 23, ¶¶ 506–07; Dennis W. Carlton, *Market Definition: Use and Abuse*, 3 COMPETITION POL'Y INT'L 3, 10–11 (2007); Robert G. Harris & Thomas M. Jorde, *Antitrust Market Definition: An Integrated Approach*, 72 CAL. L. REV. 1, 4 (1984).

(d). *Tying as a Means to Influence the Input Usage Ratio*

Another theory suggests that tying, in certain circumstances, can influence the usage ratio of inputs.⁷⁴ This theory is largely based on the circumstances that arose in *Kodak*, where the respondents, independent service organizations, argued that Kodak held monopolistic power in the market for spare parts for its photocopiers.⁷⁵ Respondents also argued that Kodak tied the sale of parts to the provision of maintenance and repair services.⁷⁶ Consequently, this tying forced consumers to use Kodak's maintenance and repair services if they wished to purchase spare parts for their photocopiers.

The theory proposes that such tying could influence the usage ratio of inputs.⁷⁷ Assume that a manufacturer possesses monopolistic power in parts manufacturing for a certain product. The parts are sold to the product's owners combined with a repair service. For the product's owners, the parts and the repair service are complementary as well as substitute products, and their use ratio can be varied to some degree. If the price of parts increases, it could be more worthwhile to invest in additional repair hours in order to fix a broken part instead of replacing it.

Suppose that in a competitive market, an hour's labor costs \$10, while a new part costs \$50. Further assume that installing a new part instead of a worn-out part requires two hours of work in addition to the cost of the new part (a total of \$70), but that with an investment of eight hours of labor the worn-out part can be restored (costing \$80). In such a situation, the owners of the equipment would prefer to order a new part and invest two hours in its installation. Since this is the choice in a competitive market, this is the efficient ratio for input usage.

Assume now that the manufacturer sets the part's monopolistic price at \$70 per unit. In such a situation, instead of replacing the worn-out part at a total cost of \$90, it would be more worthwhile for the equipment owner to invest eight labor hours in repairing the part, at a cost of \$80. Therefore, the monopolistic manufacturer should tie the parts with the repair service, so that replacing a new part or repairing a worn-out part would be performed by the manufacturer (so that it would not be possible to repair a worn-out part except through the manufacturer). Consequently, the manufacturer can increase the price of labor to \$12 per hour, and reduce the price of the part to \$66, thus making the equipment owner prefer to purchase the new part (with a total cost of \$90: \$66 for the part plus two hours of labor costing \$24) over repairing

74. See HOVENKAMP, *supra* note 2, at 460–61.

75. See *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992).

76. *Id.*

77. See HOVENKAMP, *supra* note 2, at 460–61.

the worn-out part, which would now cost \$96 (eight hours of labor each costing \$12).

Through tying, the manufacturer makes the consumers choose the input usage option preferable from the manufacturer's point of view, so she can charge the monopolistic price for the parts. However, by doing so she also reestablishes an efficient input usage ratio (a new part plus two hours of labor). Thus, the effect of this tying is not necessarily detrimental in terms of total welfare.

C. Tying Arrangements' Pro-Competitive Efficiency Versus Anticompetitive Potential—Theoretical and Empirical Analysis

As elaborated in the previous sections, tying arrangements have significant pro-competitive efficiency but also anticompetitive potential. In order to determine the efficient legal rule for analyzing tying arrangements, we need to determine, to the extent possible, how common the beneficial tying arrangements are versus the harmful tying arrangements.

Theorists of the Chicago and Harvard Schools hold the position that the efficient and competitive tying arrangements constitute the lion's share of all tying arrangements.⁷⁸ This assumption is based on the fact that tying arrangements are very common in completely competitive markets.⁷⁹ In such markets, the tying firm cannot "coerce" consumers to purchase the tied product. Therefore, presumably, the tying arrangements are efficient and beneficial for both the tying firm and the consumer public. These efficient results relate to the very tying, rather than to the market being competitive or monopolistic. Consequently, if tying arrangements in competitive markets have a significant efficiency potential, then this is also the case when the tying takes place in monopolistic markets.⁸⁰ In addition, many products are actually made up of a combination of several components that were considered separate products in the past. This verity supports the assumption regarding the prevalence of efficient tying arrangements. In fact, *all* tying arrangements may have competitive potential.⁸¹ By contrast, in order for the situations with the anticompetitive potential to occur, special conditions and circumstances must exist, some of which are not at all common.⁸²

78. See, e.g., Evans & Salinger, *supra* note 2, at 39–40, 89; Salinger, *supra* note 30, 1911–12, 1927–28.

79. See, e.g., Evans & Salinger, *supra* note 2, at 39–40, 89; Salinger, *supra* note 30, 1911–12, 1927–28.

80. See, e.g., Evans & Salinger, *supra* note 2, at 39–40, 89; Salinger, *supra* note 30, 1911–12, 1927–28.

81. See AREEDA & HOVENKAMP, *supra* note 23, ¶¶ 1717a, 1717c4.

82. See, e.g., Evans & Salinger, *supra* note 2, at 41. The theory that tying arrangements can harm competition is fragile "as anticompetitive equilibria emerge only under specific—and difficult

Regarding the leverage theory, the Chicago-Harvard theorists assume that leveraging monopolistic power to obtain additional, double monopolistic profit is not possible in most scenarios (due to the single monopoly profit hypothesis). Only in exceptional situations where special circumstances occur can some leverage be possible.⁸³ Thus, based on the economic analysis presented above, there is no legal or economic justification in determining a general legal presumption against tying arrangements.

Professor Elhauge's position is that tying arrangements—if we exclude tying arrangements that promote efficiency—are more harmful than beneficial.⁸⁴ He argues that leveraging monopolistic power is possible in most of the existing scenarios, and in fact, the scenarios where leverage is impossible are the exception rather than the rule.⁸⁵ However, a careful reading of Professor Elhauge's position reveals that he does not deny the premise that among all tying arrangements, including those that promote efficiency, the majority are beneficial and pro-competitive.⁸⁶

In recent years, growing literature of empirical economic analysis is attempting to evaluate the impacts of vertical restraints, which include tying arrangements, on consumer and total welfare.⁸⁷ Although much work is still to be done, the results are striking: according to most empirical studies, vertical practices have significant pro-competitive effects, as they tend to lower prices and increase output.⁸⁸ Therefore, the empirical evidence supports the theoretical assumption that tying arrangements are

to verify—assumptions about (among other things) costs, demand, the nature of input contracts, conditions of entry, the slope of reaction functions, and the information available to firms.” Cooper et al., *supra* note 39, at 641. In addition, it appears that “minor perturbations to these assumptions can reverse the predicted welfare effects of the practice in question.” See Cooper et al., *supra* note 38, at 641.

83. See, e.g., AREEDA & HOVENKAMP, *supra* note 23, ¶¶ 1716–17; BORK, *supra* note 10, at 372–75, 380–81; POSNER, *supra* note 10, at 197–99; Bowman, *supra* note 12, at 20–23; Hovenkamp & Hovenkamp, *supra* note 35, at 927.

84. See Elhauge, *supra* note 14, at 400–01, 419–20, 477–78.

85. See *id.* However, we should emphasize that according to Elhauge, leverage can occur even when the tying does not close a significant portion of the tied product's market. In contrast, the theorists of the Chicago and Harvard Schools do not refer to such scenarios as possessing anticompetitive potential. I will elaborate on this matter in Part IV, *infra*.

86. An important issue that Professor Elhauge fails to address in this regard is how to sort out, *ex ante*, those anticompetitive tying arrangements from the majority of efficient arrangements. See, e.g., Cooper et al., *supra* note 38, at 646; Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837, 855–56 (1990).

87. See, e.g., Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, in HANDBOOK OF ANTITRUST ECONOMICS 391, 408–09 (Paolo Buccirossi ed., 2007); Cooper et al., *supra* note 38, at 648–58.

88. See, e.g., Lafontaine & Slade, *supra* note 87, at 408–09; Cooper et al., *supra* note 38, at 648–58.

likely to be efficient. After reviewing the empirical evidence, Cooper, Froeb, O’Brian and Vita conclude:

Empirical analyses of vertical integration and control have failed to find compelling evidence that these practices have harmed competition, and numerous studies find otherwise. Some studies find evidence consistent with both pro- and anticompetitive effects; but virtually no studies can claim to have identified instances where vertical practices were likely to have harmed competition.⁸⁹

As will be elaborated upon in Part IV below, since both theoretical and empirical economic research support the assumption that tying arrangements are mostly pro-competitive, there is no justification in determining an a priori legal presumption against their implementation.

III. THE CURRENT LAW OF TYING ARRANGEMENTS: A CRITICAL REVIEW

A. The Current Case Law

Tying arrangements can be analyzed under Sections 1 and 2 of the Sherman Act, Section 3 of the Clayton Act, and Section 5 of the FTC Act.⁹⁰ In the matter of *International Salt*, a manufacturer and a patent holder of salt machines tied the leasing of its machinery to the sale of the salt to be used by the machines.⁹¹ The Supreme Court ruled that in order to protect competition in tied product markets, tying applied by monopolistic firms affecting a “not insubstantial” amount of interstate commerce, should be illegal per se.⁹² Due to the implementation of the per se prohibition, *International Salt*’s argument, whereby the tying it implemented was justified, was rejected.⁹³

In fact, *International Salt* could not have charged more than the market price for the salt, since according to the agreements, the lessees were entitled to purchase salt from any other source offering salt of the required standard at lower prices.⁹⁴ In addition, the Supreme Court ruled

89. Cooper et al., *supra* note 38, at 658.

90. See 15 U.S.C. §§ 1, 2, 14, 45 respectively. These statutes prohibit, in quite general terms, conduct that harms competition and the monopolizing of markets. The common view is that the analysis of tying arrangements according to the various statutes is similar and based on the same main parameters. See HOVENKAMP, *supra* note 2, at 435, 445–46; see also *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 11 n.16 (1984).

91. See *Int’l Salt Co. v. United States*, 332 U.S. 392 (1947).

92. *Id.* at 396.

93. *International Salt* argued that it was responsible, according to the lease agreements, for maintaining and repairing the machines, and by tying the salt to the machines it could guarantee that the salt used was of high quality. *Id.* at 397.

94. *Id.*

that International Salt possessed monopolistic power based on the fact that its machines were protected by patents, while ignoring uncontradicted evidence regarding the existence of competing manufacturers.⁹⁵

In *Northern Pacific*, a railway company sold the land adjacent to the railway tracks it owned on the condition that the purchasers marketed their wares only through its railway lines unless another shipper offered lower prices.⁹⁶ The Supreme Court repeated the holding of *International Salt* and added that the very fact that Northern Pacific was able to force upon the purchasers the terms of the tying indicates that it held market power.⁹⁷

In *Jefferson Parish Hosp.*, the plaintiffs argued that the hospital had an exclusive contract with an anesthesiology practice, and thus the hospital illegally tied the use of its operating rooms to the use of the practice's anesthesiologists.⁹⁸ The Supreme Court held that the hospital's market share, about 30%, was insufficient for the component of market power required in claims of illegal tying, since 70% of the market remained available for the plaintiff anesthesiologists.⁹⁹ The minority opinion (of four Justices), however, supported overruling the per se prohibition rule and moving to a rule of reason analysis of tying arrangements.¹⁰⁰

In *Kodak*, the Supreme Court evaluated Kodak's refusal to sell parts for its rapid photocopiers unless the purchaser used Kodak's

95. See BORK, *supra* note 10, at 368; see also POSNER, *supra* note 10, at 197–98.

96. *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 3 (1958).

97. *Id.* at 7–8. On this matter, Bork comments that the Supreme Court made the tying arrangement illegal by its very essence. See BORK, *supra* note 10, at 367–68. If the existence of a tying agreement testifies to the tying firm's market power, and a tying agreement implemented by a firm possessing market power is illegal per se, then a tying agreement in itself is in fact illegal per se. In fact, it is doubtful whether Northern Pacific possessed market power. *Id.* In addition, the Supreme Court expressed its position, whereby tying arrangements contain no benefit and their entire purpose is to harm competition:

Indeed, "tying agreements serve hardly any purpose beyond the suppression of competition." They deny competitors free access to the market for the tied product, not because the party imposing the tying requirements has a better product or a lower price but because of his power or leverage in another market. At the same time buyers are forced to forego their free choice between competing products. For these reasons . . . [t]hey are unreasonable in and of themselves whenever a party has sufficient economic power with respect to the tying product to appreciably restrain free competition in the market for the tied product and a "not insubstantial" amount of interstate commerce is affected.

Id. (internal citations omitted). This approach suited the economic wisdom of the time, which led to a significant concern regarding the leverage of monopolistic power and the marginalization of competitors. Consequently, the Supreme Court hardly took into account tying arrangements' potential for efficiency advantages. A similar position was also expressed by the Supreme Court in *Black v. Magnolia Liquor Co.*, 355 U.S. 24, 25 (1957).

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

99. *Id.* at 27.

100. For extensive discussion of this test, see *infra* Part IV.

maintenance and repair services.¹⁰¹ The claim alleged that Kodak was thus harming competing suppliers of repair and maintenance services. Kodak's refusal was perceived as a tying whereby Kodak tied the sale of the parts for its photocopiers to receiving the repair and maintenance services. On this issue, the question was raised whether Kodak could be considered to have market power in the secondary parts market when it possessed only about 23% of the fast photocopier primary market.¹⁰² The Court ruled that the absence of market power in the primary market does not eliminate the possibility of the existence of market power in the secondary market.¹⁰³

The case of *Illinois Tool Works* dealt with a tying agreement between a developer of a patent-protected technology for printing barcodes and the developers of printers for printing barcodes on packaging materials.¹⁰⁴ According to this agreement, the technology developer granted a license to use its technology in order to develop inkjet printers, subject to the ink used by the printers being supplied exclusively and continuously by the developer. The Supreme Court ruled that the fact that the tying product was patent-protected did not in itself indicate the existence of market power. Thus, courts must base any ruling regarding illegal tying on proving that the tying firm holds actual market power.¹⁰⁵ Although the per se rule was not at issue, the Supreme Court expressed its doubts as to whether such rule is appropriate for analyzing tying arrangements considering their efficiency potential.¹⁰⁶ The Court, however, did not explicitly countermand the implementation of the per se rule for tying arrangements.

The Supreme Court's position is that tying arrangements carried out by monopolistic firms, which affect a "not insubstantial" amount of interstate commerce, are illegal per se. The Court requires proof of the existence of market power, and rejects the possibility of deducing the existence of market power from the very fact that the tying product is patent-protected, or from the very fact that the consumer agreed to the tying arrangement.

However, over the years, several lower court decisions have been passed that present greater flexibility in implementing the per se prohibi-

101. See *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992).

102. *Id.* at 469–70.

103. *Id.* at 470–72. This ruling has received a great deal of criticism, since only in special circumstances can a manufacturer employ power in the secondary market in the absence of market power in the primary market. See, e.g., Herbert Hovenkamp, *Post Chicago Antitrust: A Review and Critique*, 2001 COLUM. BUS. L. REV. 257, 283–99 (2001).

104. See *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006).

105. *Id.* at 45–46.

106. *Id.*

tion regarding tying arrangements. For instance, the case of *Jerrold Electronics* evaluated a tying applied by a manufacturer of systems for receiving television broadcasts that sold the system only as a complete package and refused to sell its components individually.¹⁰⁷ The manufacturer also tied the sale of the system with its installation and maintenance.¹⁰⁸ The manufacturer's argument was that in cases where the system was installed and maintained by other parties, lacking the required knowledge, skill, and experience, its function was faulty.¹⁰⁹ This was also the case when customers attempted to combine components of the system with components made by other manufacturers. The court ruled that tying the installation and maintenance to the sale of equipment *at a time when the technology is innovative* is reasonable and may be justified, and so may be the refusal to sell the components separately; however, when the technology is no longer innovative, the per se prohibition will apply once more.¹¹⁰

Another example of tying arrangements that received the approval of the courts relates to arrangements known as "full-line forcing." In these arrangements, a manufacturer requires dealers or concessionaires to purchase its full product line, thus preventing them from being free to compose a product line from various manufacturers' products.¹¹¹

The best known—and probably the most important—case was that in which the D.C. Circuit refused to rule against a tying arrangement in the *Microsoft* case.¹¹² In that case, the tying of the Internet Explorer software to the Windows software led to Netscape being pushed out of the Internet browser market.¹¹³ The district court ruled that since Microsoft had a monopoly in the operating systems market, by linking its operating system software to another product, it violated the per se prohibition set in *International Salt*.¹¹⁴

Microsoft appealed, arguing that the software industry is characterized by manufacturers that develop new products, obtaining a monopolistic status.¹¹⁵ This status is maintained until a more innovative product is

107. See *United States v. Jerrold Elecs. Corp.*, 187 F.Supp 545 (E.D. Pa. 1960). The system included an antenna, equipment to enhance reception, a converter, and a cable system into the customer's houses.

108. *Id.* at 552.

109. *Id.* at 549–50.

110. *Id.* at 557.

111. In various cases, a concession owner forced her concessionaires to purchase the entire range of products sold by the concessionaire from her. For an elaborate review, see HOVENKAMP, *supra* note 2, at 473 n.6.

112. See *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).

113. See *id.*

114. See *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59 (D.D.C. 2000).

115. *Id.* at 49–58.

developed, which pushes the previous product out of the market (thus the competition is often “for the market” rather than “within the market”).¹¹⁶ In these markets, the degree of integration of products is relatively high, and in fact, many developments actually include a combination of various products. Therefore, the argument persists, if dominant firms in these markets are forbidden from tying their products, significant harm will be caused to this vital branch of the modern world economy.¹¹⁷ The D.C. Circuit accepted this argument, and ruled that in the field of software development, tying arrangements should be examined under the rule of reason rather than the illegal per se rule.¹¹⁸ In its reasoning, the court distinguished the tying case in *Microsoft* from tying arrangements examined in “old economy” markets for which the Supreme Court set the illegal per se rule.¹¹⁹

B. Criticism of the Illegal Per Se Rule Applied for Tying Arrangements

The illegal per se rule is supposed to be applied against types of behavior that are *always or almost always harmful*. By the court setting a sweeping prohibition, it promotes certainty in the markets as well as deterrence against the harmful behavior. In addition, a clear and unambiguous rule saves systemic legal costs because, due to the effective deterrence and the certainty, fewer cases reach the courts for review. The cases that still reach the courts will be managed more rapidly, saving resources, since all that is required is proving the existence of the behavior without having to analyze its economic effects in the specific circumstances.¹²⁰

Accordingly, the Supreme Court’s decision to analyze tying arrangements under the illegal per se rule was based on its understanding that this conduct is always harmful (or at least, almost always harmful), and that it contains no benefit.¹²¹ However, we now discern that the detrimental effect of tying arrangements is not as significant as was once perceived, and that tying arrangements have significant pro-competitive effects.

This being so, there is wide agreement in academic writing (including the Chicago-Harvard Schools and the position of Professor Elhauge) that the per se prohibition is not the appropriate rule for analyzing tying

116. *Id.*

117. *Id.*

118. See *United States v. Microsoft Corp.*, 253 F.3d 34, 90–95 (D.C. Cir. 2001).

119. *Id.*

120. See, e.g., HOVENKAMP, *supra* note 2, at 447.

121. See, e.g., *supra* text accompanying note 97; see also Evans & Salinger, *supra* note 2, at 84.

arrangements.¹²² These insights have started permeating the rulings of the Supreme Court. As we have seen, in *Jefferson Parish Hosp.*, four Justices supported (albeit in a minority opinion) cancelling the implementation of the per se prohibition for examining tying arrangements, and moving to implementing the rule of reason.¹²³ A similar approach was expressed in *Illinois Tool Works*, although the Court did not explicitly overrule the implementation of the per se rule.¹²⁴ It appears that today there is an expectation for the law to be changed, even though it is impossible to estimate when this change will occur.

IV. THE DESIRABLE LAW

This Part will first review the different legal rules for analyzing tying arrangements, and then present the various tying scenarios and the appropriate legal rule for each of them in accordance with the modern economic analysis presented in Part II above.

A. The Different Legal Rules for Analyzing Tying Arrangements

1. The Per Se Rules

As mentioned, the *illegal* per se rule is intended to prevent activity that is, in its vast majority, harmful. In contrast, the *legal* per se rule is based upon an absolute legal presumption whereby a particular behavior is always, or at least almost always, efficient and pro-competitive. Therefore, to prevent unnecessary litigation and to prevent over-deterrence, the behavior is sweepingly permitted. The implementation of this rule to tying arrangements was proposed by Professor Bork—who is associated with the Chicago School¹²⁵—but did not receive widespread support due to the anticompetitive potential of tying arrangements.¹²⁶

2. The “Quasi-Per Se” Rule

The main advocate of the “quasi-per se” rule is Professor Elhauge.¹²⁷ This rule is based on the assumption that tying arrangements do have beneficial potential, but also have significant harmful and anti-competitive potential. However, in Elhauge’s opinion, the balance tends

122. See *infra* Part IV.

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

124. See *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006).

125. See BORK, *supra* note 10, at 380–81. For Elhauge’s comments on this rule, see Elhauge, *supra* note 13, at 399.

126. However, as elaborated *infra*, tying arrangements that do not foreclose a significant section of the tied product market do not lead to antitrust damage, and so ought to be legal per se.

127. See Elhauge, *supra* note 13, at 399.

toward the negative potential when the beneficial arrangements are excluded.¹²⁸ Therefore, Elhauge proposes that the plaintiff will first be required to prove the existence of the tying firm's significant market power, and also that the tying leads to "not insignificant" closing of the tied product market.¹²⁹ If the plaintiff succeeds at this onus, the presumption of the arrangement's illegality will prevail. In order to negate this presumption, the tying firm will have to prove a legitimate justification of efficiency.¹³⁰ It is important to note that Professor Elhauge supports applying the test only in tying scenarios in which the ratio of the tied products is not fixed.¹³¹ Since it is very complicated to prove efficiency justifications (due to the complex economic analysis required), the quasi-per se rule grants a significant advantage to the plaintiff.¹³² As stated above, such an advantage can be justified if, in fact, most of the tying arrangements were anti-competitive. If this assumption is not realistic, then the rule will lead to harming desirable and beneficial arrangements.

3. The Rule of Reason

The rule of reason analysis is widely used in antitrust law. It is implemented in scenarios where a certain behavior can be beneficial and competitive in certain circumstances, but harmful and anticompetitive in other circumstances, and where there is no clear bias in favor of the anti-competitive and harmful scenarios.¹³³ In principle, this legal rule examines each case individually, in depth, by conducting an extensive economic analysis regarding the examined conduct's competitive effects.¹³⁴

According to the rule of reason, the plaintiff at first must prove that the defendant's conduct harms competition. For this purpose, the plaintiff must present the theory that shows that competition could be harmed as a result of the tested behavior; demonstrate that the theory suits the circumstances of the case at hand; and prove that the threat to competition is significant. Should the plaintiff succeed in this onus, then in the second stage, the defendant must prove an efficiency justification for its

128. However, as discussed *supra* Part III, we should consider the overall effect of all the tying arrangements, including the efficient ones, when determining the appropriate rule for analyzing them.

129. See Elhauge, *supra* note 13, at 420.

130. *Id.*

131. *Id.* at 201–02.

132. See generally Salinger, *supra* note 30.

133. See, e.g., HOVENKAMP, *supra* note 2, at 274–79. So, for example, the test is applied to most of the horizontal arrangements (except arrangements constituting "naked restraints"), to vertical arrangements (including vertical price fixing, vertical geographical market division, exclusivity arrangements, etc.), and also to the analysis of mergers.

134. HOVENKAMP, *supra* note 2, at 274–79.

conduct.¹³⁵ If the defendant does so, the burden shifts back to the plaintiff, who must prove that in the final outcome, the conduct's anti-competitive effects outweigh the beneficial effects. Alternatively, the plaintiff must prove that similar efficiency benefit can be achieved through other means that are less harmful to competition.¹³⁶

The rule of reason, in comparison to the quasi-per se rule, grants a clear advantage to the defendant, since there is a basic difficulty in proving, as a preliminary matter, harm to competition or to consumers. Such proof requires a complex economic analysis that frequently fails to result in clear and convincing conclusions. Therefore, to a large extent, the preliminary classification regarding the rule that should be applied in analyzing tying arrangements—the quasi-per se or the rule of reason—has great importance in determining the final outcome of the process.

It is important to note that some of the theorists of the Harvard and Chicago Schools propose a distinctive application of the rule of reason in circumstances in which the tying arrangement forecloses a significant segment of the tied product market. This application is very similar to the application of the quasi-per se rule. I will elaborate about this application in this Part below.

B. Classifying the Appropriate Rule for the Various Tying Scenarios

1. Tying Scenarios in Which the Use of the Tied Products is in Fixed Proportions, and That Do Not Lead to Closing a Significant Segment of the Tied Product Market—Adopting the Legal Per Se Rule

In tying arrangements in which the products are used in fixed proportions and that do not lead to closing a significant segment of the tied product market, the single monopoly profit hypothesis prevails. In these circumstances, there is no significant potential for harming competition. It is not possible to leverage the monopolistic power to the tied product market, to increase the monopolistic profit for the tying product (other than by increasing efficiency), or to raise entry barriers into the markets.¹³⁷ As a consequence, according to the theorists of the Chicago and

135. This means that the examined conduct actually promotes efficiency, expressed for instance in improving the product, reducing manufacturing or marketing costs, protecting reputation, etc.

136. For a general discussion regarding the rule of reason, see AREEDA & HOVENKAMP, *supra* note 23, ¶¶ 1507–11. Regarding the implementation of the rule in the context of tying arrangements, see *id.* ¶¶ 1728c, 1729; see also *United States v. Microsoft Corp.*, 253 F.3d 34, 58–59 (D.C. Cir. 2001).

137. For the detailed scenarios, see *supra* Part II.

Harvard Schools and Professor Elhauge, these tying arrangements should be legal per se.¹³⁸

2. Tying Arrangements in which the Products are not Used in Fixed Proportions and That Do Not Lead to Significant Closing of the Tied Product Market—Adopting the Legal Per Se Rule

Tying arrangements in which the products are not used in fixed proportions and that do not lead to a significant closing of the tied product market are those currently at the heart of the controversy between the Chicago-Harvard Schools' theorists and Professor Elhauge. According to the Chicago-Harvard Schools' theorists, such scenarios do not possess anticompetitive potential, and thus do not require antitrust enforcement.¹³⁹ In contrast, according to Professor Elhauge, there is a significant harmful potential in these tying scenarios, and therefore he proposes applying the quasi-per se rule.¹⁴⁰

Leading Chicago-Harvard School theorists argue that the main goal of antitrust is to promote total welfare.¹⁴¹ Professor Elhauge holds a different position, whereby the main purpose of antitrust law is to promote consumer welfare, even at the expense of total welfare.¹⁴² For our purposes, this controversy can be expressed in the tying scenario intended for effective price discrimination.¹⁴³ On the one hand, this sort of tying arrangement leads to the tying firm extracting a significant portion of the consumer surplus, but on the other hand, it may enable the tying firm to increase output, and thus total welfare.

Professor Elhauge argues that the consumer welfare should be preferred for a number of reasons. First, monopolistic profit achieved through a tying arrangement would be dissipated by the cost of the competition to achieve the market power in the first place.¹⁴⁴ Second, when a

138. See Elhauge, *supra* note 13, at 423. In fact, when the price of the tying product is under regulatory control, tying an unregulated product can increase monopolistic profits. However, the common view is that the regulation imposing the price control should determine the extent thereof, and the desirable enforcement measures, rather than antitrust law. See, e.g., AREEDA & HOVENKAMP, *supra* note 23, ¶ 1729i2.

139. See, e.g., AREEDA & HOVENKAMP, *supra* note 23, ¶ 1729.

140. See Elhauge, *supra* note 13, at 427.

141. See, e.g., BORK, *supra* note 10, at 11; POSNER, *supra* note 10, at ix, 9–32; Michael S. Jacobs, *An Essay on the Normative Foundations of Antitrust Economics*, 74 N.C. L. REV. 219, 242 (1995); William E. Kovacic, *The Modern Evolution of U.S. Competition Policy Enforcement Norms*, 71 ANTITRUST L.J. 377, 464 (2003).

142. Elhauge, *supra* note 13, at 435–39. It should be noted in this context that this controversy is a matter of principle related to the implementation of antitrust law in general, and its effect is wide and exceeds the scope of this Article.

143. See *supra* Part II.B.3(a).

144. See Elhauge, *supra* note 13, at 438. The argument is that firms would compete over the monopolistic status, and during this competition they would be willing to invest resources equivalent

certain behavior increases the firm's profit, in most cases the firm can ensure that part of the profit is diverted to consumer welfare. Therefore, the standard of consumer welfare would lead to any total welfare of the behavior being transferred also to the consumer's advantage. In contrast, if consumer welfare cannot be increased, then this probably means that the behavior has no contribution to total welfare either.¹⁴⁵ Third, in the current global reality, a standard of protecting consumers would provide an appropriate response to importing countries (meaning "consumers") against their exploitation by "producing" countries.¹⁴⁶ Finally, the consumer standard, according to Elhauge, advances distributional justice since the consumers are usually less wealthy than the manufacturers.¹⁴⁷ Therefore, an increase of wealth of consumers would grant them greater benefit than would be obtained by the wealthier manufacturer firms, based on the assumption of the declining marginal benefit of wealth.¹⁴⁸

To contrast, leading Chicago and Harvard School theorists promote the total welfare standard and present several strong arguments in its favor. First, choosing between different groups—such as consumers versus manufacturers—is essentially a political choice, and should be made in the political arena rather than the regulatory/legal arena.¹⁴⁹ Second, in response to the argument about promoting distributional justice, they argue that the assumption that the consumers are less wealthy than the manufacturers is not necessarily established.¹⁵⁰ There are some wealthy consumers and there are also shareholders of manufacturing firms who are not wealthy at all. In addition, most of the transactions—in fact, almost all transactions not involving the end consumers—are between firms (meaning between a firm producing the product and a firm purchasing the product), and there is no justification in preferring some

to the anticipated profit. Therefore, the additional monopolistic profit due to the tying arrangement would contribute to total welfare. This argument is flawed in three ways. First, Elhauge assumes, without any empirical support, a reality of a competitive equilibrium in the struggle to achieve the monopolistic status. In the absence of such equilibrium, monopolistic profit will exceed the amount invested to achieve market power. Second, Elhauge ignores the welfare achieved as a result of the competition between firms over the monopolistic primacy in all the cases where, eventually, none of the firms succeed in achieving a decisive advantage over the others. In such situations, the market remains competitive and even becomes more efficient than it was previously. Finally, Elhauge does not take into account that the investment of resources for purposes of achieving the monopolistic status may have benefit in other markets. For example, an investment aimed to develop technological advantage in a specific market could be found beneficial in other markets as well.

145. Elhauge, *supra* note 13, at 438.

146. *Id.*

147. *Id.* at 439.

148. *Id.*

149. See BORK, *supra* note 10, at 110–12.

150. See Dennis W. Carlton, *Does Antitrust Need to be Modernized?*, 21 J. ECON. PERSP. 155, 158 (2007).

firms over others.¹⁵¹ Because we cannot examine each case individually, it is appropriate to assume that all parties deserve wealth equally. It is preferable to support an aggregate approach, through which it would be possible in many cases to compensate the losing parties. Even if we accept the assumption that the resources should be distributed according to criteria of “justice,” antitrust law is still not the appropriate means for this end. Instead, we should prefer the tools of taxation and subsidies given to the weaker groups because antitrust law does not distinguish between poor or wealthy consumers, or between poor and wealthy manufacturers. There is no justification in wealthy consumers receiving the same benefit as poor consumers.¹⁵²

Third, allowing monopolistic firms to exploit their market power actually benefits consumers in the long run, so long as competing firms are not restrained, as we assume is the case at hand. Despite the short-term loss from provisionally higher prices, the opportunity to charge those higher prices encourages competing firms to invest in innovative products that are essential to a vibrant economy. It is therefore better to promote long-term efficiency that will also lead to future lower prices than to grant priority to the consumer standard, which aims at lowering the short-term price.¹⁵³ “In fact, inefficient tying that does not restrain competitors would necessarily boost competition in the tying product market even more than straight monopoly pricing.”¹⁵⁴ If the tying arrangement does not benefit consumers, then they “would surely view tying as worse than straight monopoly pricing, creating an enhanced opportunity for competitors to erode the tying firm’s market power by innovating better products.”¹⁵⁵

Fourth, the purpose of antitrust law is to deal with conduct harming competition, and not with conduct aimed at exhausting monopolistic profits.¹⁵⁶ Therefore, when a monopolistic firm ties products under the circumstances discussed here, it can at most increase its monopolistic profits in the tying product market. It cannot affect the competitive struc-

151. *Id.*

152. See Joseph Farrell & Michael L. Katz, *The Economics of Welfare Standards in Antitrust*, 2 COMPETITION POL’Y INT’L 3, 9–11 (2006). In the words of the famous economist Dennis Carlton: “The proper objective of antitrust should be total surplus, not consumer surplus. . . . [I]t is better to pursue public policies that maximize output and then worry about distributional questions, rather than to pursue inefficient policies.” Carlton, *supra* note 150, at 157.

153. See Carlton, *supra* note 150, at 157–58; Steven Semeraro, *Should Antitrust Condemn Tying Arrangements that Increase Price Without Restraining Competition?*, 123 HARV. L. REV. F. 30 (2009).

154. Semeraro, *supra* note 153, at 33.

155. *Id.*

156. See, e.g., *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 407 (2004).

ture of the tied product market. This position is based on the Court's determination that no antitrust restriction should be imposed upon setting a monopolistic price, and, in fact, a monopolistic manufacturer is entitled to set as high a monopolistic price as it desires.¹⁵⁷

Because, in my view, the arguments for the total welfare standard are more established and consistent with the core antitrust doctrines, tying arrangements that do not foreclose the tied product market should be legal per se. Moreover, even if we accepted Professor Elhauge's arguments in favor of the consumer standard, the quasi-per se rule would still not be appropriate for analyzing the tying arrangements discussed here. Given that there are no grounds for assuming that these tying arrangements' anticompetitive potential outweighs their pro-competitive potential, there is no justification in implementing any legal presumption against them.

3. Tying Scenarios Leading to a Significant Closing of the Tied Product Market—Adopting the Rule of Reason

Tying arrangements leading to a significant closing of the tied product market have the greatest anticompetitive potential, as they can affect both the tied and the tying product markets. Within these arrangements, it could be possible to leverage monopolistic power (at least in theory) and raise barriers to entry to the tied as well as the tying product markets. For these reasons, both the theorists of the Chicago-Harvard Schools and Professor Elhauge propose imposing restrictions on such tying arrangements. In fact, the two approaches are quite similar in this context. However, as I will argue below, a different and more lenient approach towards tying arrangements should be applied.

Professor Elhauge proposes applying the rule of reason when the tying of products, in fixed proportions, forecloses a significant segment of the tied product market, and applying the quasi-per se rule if the products are not tied in fixed proportions.¹⁵⁸ Theorists of the Harvard School, and some theorists of the Chicago School, propose applying the rule of reason to all tying arrangements that close the tied product market.¹⁵⁹ However, according to their implementation of the rule, it would be sufficient for the plaintiff to prove the foreclosure of the tied product market in order to meet the onus of proving the conduct's anticompetitive potential.¹⁶⁰ Prominent theorists of the Harvard School even suggest that proving a closing of 30% of the tied product market would suffice for this

157. *Id.*

158. See Elhauge, *supra* note 13, at 402.

159. See AREEDA & HOVENKAMP, *supra* note 23, ¶ 1729e2.

160. See *id.*

purpose.¹⁶¹ It is apparent that the proposed implementation of the rule of reason is quite similar to that of the quasi-per se rule suggested by Professor Elhauge.

In fact, there is no basis—either empirical or theoretical—for the two approaches presented whereby the onus of proof should be shifted. While closing a significant segment of the tied product market strengthens the anticompetitive potential of the tying arrangements, it does not diminish their pro-competitive efficiency potential.¹⁶² It can even be argued that the foreclosing of the tied product market is a prerequisite for eliminating double markup distortions, which is a pro-competitive effect.¹⁶³ Applying a presumption against tying arrangements in certain scenarios assumes that their anticompetitive potential outweighs their pro-competitive potential. However, this assumption has no anchor either in theoretical writing or in empirical research.¹⁶⁴

Arguably, shifting the burden of proof could be justified, even if tying arrangements tend to be pro-competitive, if it turns out that type II errors are much more costly than type I errors.¹⁶⁵ It means, in this context, that the costs from failing to challenge anticompetitive tying arrangements (type II error) outweigh the costs from challenging pro-competitive tying arrangements (type I error).¹⁶⁶ Because economic theory as well as empirical evidence suggest that tying arrangements are likely to be welfare enhancing, antitrust enforcement can be justified only by relatively significant type II error costs.¹⁶⁷ However, there is no support, theoretically or empirically, that type II error costs outweigh the type I error costs. On the contrary, an argument can be made supporting the opposite assumption, as Professor Easterbrook observes:

If the court errs by condemning a beneficial practice, the benefits may be lost for good. Any other firm that uses the condemned practices faces sanctions in the name of stare decisis, no matter the benefits. If the court errs by permitting a deleterious practice, though,

161. *See id.*

162. *See* Cooper et al., *supra* note 38, at 658, 660–61.

163. *See supra* Part II.B.3(b); Cooper et al., *supra* note 38, at 641.

164. The current limited empirical evidence supports the opposite assumption—that the efficient pro-competitive potential of tying arrangements outweighs the anticompetitive potential. *See supra* Part II.C. However, it should be mentioned that the majority of empirical studies conducted thus far were not aimed specifically at scenarios where the tying arrangement foreclosed the tied product market.

165. A type I error takes place when a legal rule is overreaching, thus restricting desirable conduct, while type II error occurs when the rule is under-reaching, thus permitting an undesirable conduct.

166. *See* Cooper et al., *supra* note 38, at 642, 659.

167. *Id.* at 662.

the welfare loss decreases over time. Monopoly is self-destructive. Monopoly prices eventually attract entry.¹⁶⁸

In the absence of any support, legal or economic, no presumption should be made against a common business conduct with a significant pro-competitive efficiency potential. This is particularly true given the suggestion of prominent scholars to consider a closing of 30% of the tied product market as sufficient for transferring the onus to the defendant.¹⁶⁹

Therefore, this Article proposes requiring the plaintiff to bear the preliminary onus of proof that the tying arrangement has significant anti-competitive potential before the defendant is required to prove a legitimate efficiency justification.¹⁷⁰ Thus, the plaintiff will have to prove, first, that the tying arrangement leads to a significant closing of the tied product market, such that it prevents competitors from achieving economies of scale. In addition, the plaintiff would have to prove the existence of the circumstances required for the anticompetitive effects to take place, as discussed in Part II above.¹⁷¹

For instance, if the plaintiff claims that the tying arrangement leads to the leverage of monopolistic power, as discussed in Part II.B.2(a) above, she would have to prove that such limited leverage could be profitable to the tying firm. To be profitable, the added monopolistic rent has to outweigh the costs of setting up the manufacturing infrastructure necessary for producing the entire tied product market output (or most of it). As previously stated, it is reasonable to assume that such production probably exceeds the size efficiency range. In addition, the plaintiff would have to prove the existence of high barriers to entry to the tied product market.

If, for instance, the plaintiff claims that the tying arrangement was intended to raise the barriers of entry into the tied product market, as discussed in Part II.B.2(b) above, then she must prove: (a) that the tying does indeed make the entry less likely;¹⁷² (b) that there are high barriers

168. See Frank Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 2–3 (1984); see also Cooper et al., *supra* note 38, at 661; Fred S. McChesney, *Talking 'Bout My Antitrust Generation: Competition for and in the Field of Competition Law*, 52 EMORY L. J. 1401, 1401, 1412 (2003).

169. See AREEDA & HOVENKAMP, *supra* note 23, ¶ 1729e2.

170. See also Cooper et al., *supra* note 38, at 660–61 (suggesting that “given strong priors that vertical restraints are efficient, enforcement against vertical restraint should be rare absent direct evidence of harm to welfare.”); Salinger, *supra* note 30, at 1928 (“A more appropriate legal standard would be one that embodies a strong presumption that tying is efficient and places a heavy burden on plaintiffs to demonstrate that its net effect is to cause consumer harm.”).

171. These conditions could be very difficult to verify in practice. See Evans & Salinger, *supra* note 2, at 41; and Cooper et al., *supra* note 38, at 661–62.

172. If the tying does not promote efficiency, paradoxically, it could encourage entry, as potential competitors would prefer to compete with a monopolistic firm operating inefficiently. However, if the tying is efficient, then naturally the plaintiff will find it more difficult to challenge it.

to entry to both the tying and tied product markets; and (c) that such a strategy could be profitable given the high costs involved in incorporating the required manufacturing infrastructure,¹⁷³ and when it is probable (as in the leverage example), that production of such an extent would exceed the size efficiency range.¹⁷⁴

If the plaintiff meets this preliminary onus of proof, the requirement would be passed to the defendant to prove the existence of significant efficiency justifications. Accordingly, only if the defendant fails to prove the efficiency justification would it be determined that the tying arrangement violated antitrust law.

V. CONCLUSION

There is currently a gap between the economic theory and the prevailing law regarding tying arrangements. These arrangements, which used to be considered essentially harmful, have been shown to possess limited potential for harm—certainly less significant potential than was previously thought. Moreover, tying arrangements have been shown to hold the potential for great and essential benefit. This Article has presented the main accepted modern economic insights, and has proposed the appropriate legal rules for analyzing the various tying scenarios. When the tying arrangement does not lead to a significant closing of the tied product market, and so it does not affect this market's competitive structure, the legal per se rule should be applied. In contrast, when the tying arrangement leads to a significant closing of the tied product market, the rule of reason test should be applied, but not in the format that assumes that tying arrangements in these scenarios are harmful. Rather, it should be applied in a format that requires the plaintiff to prove the existence of real potential to harm competition significantly. If the existence of harmful potential is proven, the defendant will have to prove a significant efficiency justification. Then, the onus returns to the plaintiff to show that the anticompetitive potential of the tying outweighs its pro-competitive potential.

173. Taking under consideration that the tying firm would have to produce the majority (if not all) of the tied product market output in order to foreclose this market.

174. For a discussion, not necessarily exhaustive, of the additional circumstances required for the anticompetitive tying scenarios to be realized, *see supra* Part II.B.2.