Implementing Antitrust's Welfare Goals

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INTRODUCTION

The dominant view of antitrust policy in the United States is that it should promote some version of economic welfare. More specifically, antitrust promotes allocative efficiency by ensuring that markets are as competitive as they can practically be and that firms do not face unreasonable roadblocks to attaining productive efficiency, which refers to both cost minimization and innovation. A highly competitive market containing small firms with high costs and little incentive to innovate is not desirable. Such a market might be allocatively efficient in the sense that prices are held close to cost, but costs would be too high. Antitrust would also not prefer a world of dominant firms unless dominance was essential to maintaining technological progress or cost reduction, but the prevailing literature suggests that this is not the case: greater structural competitiveness is typically conducive to greater innovation as well.[1] Tradeoffs between allocative and productive efficiency may occasionally be necessary, but the overall goal is markets that maximize output, whether measured by quantity or quality.

Antitrust in the United States is also dedicated to the proposition that markets usually work by themselves to attain these results, provided that property and contract rights are adequately defined. As a result, intervention must be episodic and applied only when good reasons exist for thinking that antitrust will make a market perform more consistently with these goals.

One welfare concern that has dominated debates over U.S. antitrust policy over the last several decades is whether antitrust should adopt a "consumer welfare" principle rather than a more neoclassical "total welfare" principle. "Total welfare" refers to the aggregate value that an economy produces, without regard for the way that gains or losses are distributed. For example, if a product costs $5 to make and is sold for $8, the $3 surplus goes to the seller. On the other side, if a customer would have been willing to pay $10 for a product but is able to purchase it for $8, then this $2 surplus is value added to the consumer. A perfectly

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1. CHRISTINA BOHANNAN & HERBERT HOVENKAMP, CREATION WITHOUT RESTRAINT: PROMOTING LIBERTY AND RIVALRY IN INNOVATION ch. 1 (2012).

competitive market maximizes total welfare, at least when we are not concerned about innovation. Significantly, however, a perfectly competitive market also gives most of the surplus to consumers, because firms compete to the point that price equals marginal cost.

Formally, "consumer welfare" looks only at the surplus that goes to consumers, ignoring what goes to sellers. The consumer welfare principle must therefore be counted as "distributive" to the extent that it produces outcomes that shift wealth or resources in favor of consumers even though an alternative outcome would produce greater total wealth.

Suppose, for example, that a joint venture among the firms that dominate a market simultaneously (1) facilitates a collusive output reduction that raises consumer prices but (2) reduces the firms' variable costs by permitting them to share production or distribution processes. In some cases, the cost reduction might be so great that even the cartel price is lower than the pre-venture price.[2] In that case this joint venture should be approved under general welfare grounds because it increases total wealth. It would also be approved under the consumer welfare principle because consumers actually benefit.[3]

Suppose that the joint venture produces significant gains in production costs of, say, $100; however, it also facilitates a price fix that raises the overall price level by $80. In that case, the joint venture would be efficient under total welfare criteria because the productive efficiency gains exceed the allocative efficiency losses that result from the collusion.[4] The gains to the firms are described as "productive" efficiency gains because they result from economies in producing or distributing. The losses to consumers in this case are described as "allocative" efficiency losses because they result from a decrease in market competitiveness. In this situation, the general welfare criterion would approve the restraint because gains are larger than losses, while the consumer welfare criterion would condemn it because consumers are worse off. That is, antitrust under the consumer welfare principle could be used to condemn an efficient practice, provided that "efficiency" is equated with the maximization of total welfare.

In *The Antitrust Paradox*, the late Robert Bork famously argued that antitrust law should adopt what he termed a "consumer welfare" standard

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2. *See, e.g.*, Alan A. Fisher, Robert H. Lande & Walter Vandaele, *Afterword: Could a Merger Lead to Both a Monopoly and a Lower Price?*, 71 CALIF. L. REV. 1697, 1698–99 (1983).

3. A likely example is *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 21–22 (1979), where the Supreme Court upheld a nonexclusive "blanket license" agreement under which thousands of artists agreed to the same royalty rates for electronic performances of their music. The reduced transaction costs of blanket licensing almost certainly resulted in lower output prices to consumers. *See* BOHANNAN & HOVENKAMP, *supra* note 1, at 345–47.

4. The classic exposition is Oliver E. Williamson, *Economies As an Antitrust Defense: The Welfare Tradeoffs*, 58 AM. ECON. REV. 18 (1968). *See* HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE § 12.2b (4th ed. 2011).

for illegality but then equated this standard with general welfare.[5] Bork's observations started a debate that is ongoing and has produced hundreds of articles. The debate has both historical, or positive, as well as normative aspects. The historical debate concerns mainly whether the original intent of the framers of the Sherman Act was a general welfare test for legality, a consumer welfare test, or perhaps some alternative test.[6] The normative debate is concerned with whether general welfare or consumer welfare should be the antitrust goal.

The simple version of the consumer welfare test is not a balancing test in the sense that one must attempt to measure and net out productive efficiency gains and allocative efficiency losses. If consumers are harmed (either by reduced output or product quality or by higher prices resulting from the exercise of market power), then this fact trumps any amount of offsetting gains to producers and presumably to others. Theoretically, even a minor injury to consumers outweighs significant efficiency gains. In this sense, the consumer welfare test is easier to administer on a case-by-case basis than general welfare tests. Under a simple rule of reason test employing the consumer welfare principle, one would have to consider whether the challenged practice creates a sufficient inference of lower market-wide output and higher prices. If so, it is presumptively unlawful. At that time the defendants will have an opportunity to show that the output model ignores efficiencies that the challenged practice produces and also that these efficiencies are of sufficient magnitude so as to drive down the venture's profit-maximizing price to a level that is no higher than it had been before the venture was formed.

By contrast, a general welfare test requires a cardinal assessment of net gains or losses. To be sure, some cases are not particularly difficult. For example, naked price fixing, unaccompanied by any integration of research, production, or output, produces no measurable efficiency gains and leads directly to higher prices. So total welfare "balancing" is relatively easy. On the other side, many purely vertical practices, including vertical territorial restraints, tying or exclusive dealing, may not result in higher

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5. ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 66, 97 (1978); *see also* Reiter v. Sonotone Corp., 442 U.S. 330, 343–45 (1979) (identifying consumer welfare as a goal in a decision holding that end-use consumers had standing to bring an overcharge action against price fixers); Herbert Hovenkamp, *Distributive Justice and the Antitrust Laws*, 51 GEO. WASH. L. REV. 1, 4–6 (1982); Alan J. Meese, *Debunking the Purchaser Welfare Account of Section 2 of the Sherman Act: How Harvard Brought Us a Total Welfare Standard and Why We Should Keep It*, 85 N.Y.U. L. REV. 659, 690–98 (2010).

6. *See* HOVENKAMP, *supra* note 4, § 2.1 (evaluating the debate); Robert H. Bork, *Legislative Intent and the Policy of the Sherman Act*, 9 J.L. & ECON. 7, 13 (1966) (arguing that the drafters of the Sherman Act had a general welfare test in mind); Robert H. Lande, *Wealth Transfers As the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*, 34 HASTINGS L.J. 65, 86–87 (1982) (disagreeing with Bork and arguing that the drafters had a consumer welfare test in mind); *see also* HERBERT HOVENKAMP, THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION ch. 2 (2005) (agreeing largely with Stigler); George J. Stigler, *The Origin of the Sherman Act*, 14 J. LEGAL STUD. 1, 7 (1985) (arguing that Congress's real concern was protecting small business from more efficient larger firms).

consumer prices at all and have efficiency benefits that serve to explain them. Alternatively, a joint venture of firms who lack significant power is likely to preserve productive efficiency gains without consumer losses. Balancing should be easy.

In the middle, however, are joint ventures with some integrative function, mergers, many unilateral practices, and at least a few vertical practices, including some instances of resale price maintenance, exclusive dealing, and tying. What these practices have in common is that under the right circumstances they can serve as an opportunity for exercising market power, but they can also produce considerable efficiencies. In these cases, the market power requirement, which applies in some fashion to all of them, serves to distinguish cases where there is no consumer harm because a market-wide output reduction is impossible. If market power is present, then the case is much more difficult.

I. THE TRIVIALITY OF THE CONSUMER WELFARE DEBATE

The volume and complexity of the academic debate on the general welfare compared to consumer welfare question creates an impression of policy significance that is completely belied by the case law, and largely by government enforcement policy. Few if any decisions have turned on the difference. In fact, antitrust policy generally applies both tests in the following sense. First, the economic analysis from the dominant Harvard and Chicago schools of antitrust is consistently concerned with general welfare, although the schools may entertain different assumptions about the robustness of markets and the merits of intervention. Harvard school antitrust economists began to look at total welfare consequences at least as early as the 1930s.[7] The Chicago school has also consistently followed a total welfare approach, ignoring distributional concerns and focusing on the extent to which an assortment of practices are likely to impose welfare losses in the neoclassical sense.[8]

The principal historical difference between the Harvard and Chicago school approaches is that Chicago has been somewhat more optimistic about the robustness of markets and their corrective mechanisms, and somewhat more pessimistic about the value of government intervention. As

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7. *See, e.g.*, Edward S. Mason, *The Current Status of the Monopoly Problem in the United States*, 62 HARV. L. REV. 1265, 1266–71 (1949); Edward S. Mason, *Monopoly in Law and Economics*, 47 YALE L.J. 34 (1937). These concerns continued to dominate, even to the present day, and the antitrust law treatise has consistently followed them since its inception in the late 1970s. *See also* Herbert Hovenkamp, *United States Competition Policy in Crisis: 1890–1955*, 94 MINN. L. REV. 311, 348–50 (2009); Meese, *supra* note 5, at 692–94; Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 928 (1979).

8. *E.g.*, RICHARD A. POSNER, ANTITRUST LAW (2d ed. 2001); Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 2 (1984); Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263 (1981); Frank H. Easterbrook, *Vertical Arrangements and the Rule of Reason*, 53 ANTITRUST L.J. 135 (1984); Richard A. Posner, *The Next Step in the Antitrust Treatment of Restricted Distribution: Per Se Legality*, 48 U. CHI. L. REV. 6, 9 (1981).

a result, Chicago school writers have seen more room for rules of per se legality, particularly in the areas of unilateral restraints and vertical practices.[9] Harvard theory observes the same issues but typically prefers a rule of reason approach, making violations difficult to prove but not ruling them out altogether.[10] The economic thinking of the two schools is much closer together today, however, than it was in the 1960s and earlier.[11] Where there are differences, the Supreme Court has almost uniformly followed the Harvard rather than the Chicago school approach.[12]

For example, the Harvard school literature on such complex practices as exclusionary pricing, mergers, refusals to deal or license, and joint ventures generally applies a total welfare approach, trying to identify circumstances when these practices are competitively harmful on balance and what are the evidentiary criteria for evaluating them.[13] Today, the dominant views, which are those of the Harvard school, are that anticompetitive predatory pricing is rare but perhaps not impossible;[14] that most instances of resale price maintenance are competitively benign, but there may be specific instances of anticompetitive Resale Price Maintenance (RPM) at the behest of a powerful dealer or cartels of dealers;[15] and that unilateral refusals to deal rarely lead to market-wide output reductions.[16]

Most of these practices remain controversial. Commentators take a variety of positions on them, irrespective of "school," but in the courts, the aggregation of these views leads to a set of presumptions about the general class of cases and the amount and nature of the proof that plaintiffs must produce. The case law generally assigns and weighs presumptions depending on the court's opening assessment of the degree of danger that a

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9. *See* Posner, *supra* note 8, at 6.

10. *See* 7 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW (3d ed. 2010).

11. Herbert Hovenkamp, *Antitrust and the Costs of Movement*, 78 ANTITRUST L.J. 67, 75 (2012).

12. *See* Herbert Hovenkamp, *The Chicago and Harvard Schools and the Dominant Firm* (U. Iowa Legal Studies Research Paper No. 07-19), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1014153; Herbert Hovenkamp, *Harvard, Chicago and Transaction Cost Economics in Antitrust Analysis*, 55 ANTITRUST BULL. 613 (2010), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1592476.

13. *See generally* 12–13 AREEDA & HOVENKAMP, *supra* note 10 (3d ed. 2012) (joint ventures, standard setting and related horizontal collaborative conduct); 9–11 *id.* (3d ed. 2010 & 2011) (tying and exclusive dealing); 4–5 *id.* (3d ed. 2009) (mergers); 8 *id.* (3d ed. 2010) (vertical intrabrand restraints including resale price maintenance); 3–3B *id.* (3d ed. 2008) (unilateral exclusionary practices including pricing and refusal to deal).

14. *See* 3A *id.* ¶¶ 720–21.

15. *See* 8 *id.* ¶ 1604 (3d ed. 2010). To be sure, resale price maintenance may lead to higher prices, but in a case of manufacturer initiated RPM, the higher prices are not the consequence of an exercise of market power and market-wide output reduction, but rather of pricing that fully internalizes distribution costs. *See infra* notes 43–45 and accompanying text.

16. 3B AREEDA & HOVENKAMP, *supra* note 10, ¶¶ 770–77. For important qualifications in network industries, *see* BOHANNAN & HOVENKAMP, *supra* note 1, ch. 11.

restraint imposes. If a category of practices is strongly regarded as benign, plaintiffs will face stringent proof requirements, and vice versa.[17]

Second, however, if the evidence in a particular case indicates that a challenged practice facilitates the exercise of market power, resulting in output that is actually lower and prices that are actually higher, then tribunals uniformly condemn the restraint without regard to offsetting efficiencies. Indeed, one is hard pressed to find a single appellate decision that made finding of fact that a challenged practice resulted in lower market-wide output and higher prices but that also went on to approve the restraint because proven efficiencies exceeded consumer losses. In sum, courts almost invariably apply a consumer welfare test.

To be sure, many cases approve restraints after finding likely or possible efficiencies, without detailed inquiry into output effects.[18] But these cannot be read as indicating that the restraint would be lawful even if consumer harm had been shown. Rather, they indicate that proof of efficiencies will be sufficient to justify a venture in situations where actual consumer effects are unknown, and theorizing about the class of restraints in question is probabilistic and dependent on case specific assumptions. Indeed, in many of these cases, the courts cite factors such as nonexclusivity, indicating that an output reduction is highly unlikely even if the firms wished to have one.[19] That is to say, the courts do not balance proven consumer harm against likely or even proven producer gains. Rather, they insist on a showing of actual consumer harm, and if they find it they condemn the restraint.

This approach is consistent with the one taken in the Horizontal Merger Guidelines. First, the agency applies a variety of tests for unilateral or collusive market effects to see if the merger is likely to result in a market-wide output reduction and price increase. If the answer is no, the query is abandoned. If the answer is yes, then the proponents of the merger will have an opportunity to show compensating efficiencies. But the magnitude of the efficiencies must be sufficiently large to offset any predicted price

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17. This is reflected in the Supreme Court decisions setting standards for pleading requirements, as well as for summary judgment without a trial. *See* Bell Atl. Corp. v. Twombly, 550 U.S. 544, 553–63 (2007) (pleading requirements); Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 585–88 (1986) (summary judgment); *see also* 2 AREEDA & HOVENKAMP, *supra* note 10, ¶¶ 307–08 (3d ed. 2008) (pleading and summary judgment).

18*. See, e.g.*, Texaco, Inc. v. Dagher, 547 U.S. 1, 7–8 (2006) (approving a production joint venture; no inquiry into whether prices increased); Cal. Dental Ass'n v. FTC, 526 U.S. 756 (1999) (requiring a full rule of reason test for professional association's restrictions on price and quality advertising and requiring a showing of competitive impact; case ultimately dismissed when such impact could not be proven).

19. Broad. Music, Inc. v. Columbia Broad. Sys., Inc., 441 U.S. 1, 11 (1979) (nonexclusivity of blanket license made consumer price increases highly unlikely); *see also* HOVENKAMP, *supra* note 4, § 5.2a2 (importance of nonexclusivity in assessment of certain joint ventures).

increase. In sum, the merger will be permitted only where there is no consumer harm, regardless of the size of the efficiencies.[20]

Even the Chicago school theory of optimal sanctions, which would base damages on the sum of the overcharge plus the deadweight loss,[21] indicates a modified consumer welfare approach. By measuring damages as it does, the optimal sanctions approach permits conduct to proceed when efficiency gains are greater than the deadweight loss, but terminates the conduct if efficiency gains are less.[22] That is, it permits efficient conduct but forecloses inefficient conduct. However, assuming that the damages are *actually* paid to consumers, they are made whole by this approach—that is, the theory resembles Kaldor-Hicks, or potential Pareto, efficiency in that it requires that the gains be large enough to compensate for the losses, but in this case, it also requires actual compensation for the losses out of the gains. As a result, consumers will be no worse off, and sellers will be able to pocket the gains to the extent that they exceed consumer harm.

The optimal sanctions model suggests that the general welfare principle for antitrust develops a form of Pareto efficiency, while the consumer welfare model develops a form of potential Pareto efficiency in which actual compensation of losers is required. If producers gain from the practice more than consumers lose *and* the gainers are required to compensate the losers, then we effectively have the consumer welfare principle.

In sum, antitrust policy in the United States follows a consumer welfare approach in that it condemns restraints that actually result in monopoly output reductions, whether or not there are offsetting efficiencies and regardless of their size. To the extent that damages rather than an injunction are appropriate, the approach may permit efficient restraints that harm consumers, but only after consumers are adequately compensated. If they cannot be adequately compensated, and consumers remain harmed, then antitrust policy condemns the restraint.

II. ADMINISTRABILITY

Aside from other rationales, a consumer welfare approach to antitrust's goals is generally justified on administrative grounds. As Williamson's original "welfare tradeoff" model indicates, a total welfare approach to antitrust harm would require courts to routinely balance out consumer injuries from allocative inefficiencies against firm gains attributable to

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20. *See* U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 10 (Aug. 19, 2010), *available at* http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf.

21. This number must be adjusted by the inverse of the probability of detection. For example, U.S. antitrust law's mandatory treble damages are correct on the premise that the probability of detection and successful prosecution is one in three.

22. *See* HOVENKAMP, *supra* note 4, § 17.2b; William M. Landes, *Optimal Sanctions for Antitrust Violations*, 50 U. CHI. L. REV. 652 (1983); A. Mitchell Polinsky & Steven Shavell, *The Optimal Tradeoff Between the Probability and Magnitude of Fines*, 69 AM. ECON. REV. 880 (1979).

production efficiencies. Importantly, this balance would *not* measure the overcharge, which is a wealth transfer, but rather the allocative efficiency, or "deadweight" loss. This is clear from the highlighted areas in Williamson's well-known figure on the antitrust welfare tradeoff. This loss results from unmade sales and inefficient substitutions and is much more difficult to assess than simple overcharges. This loss must then be balanced against production efficiency gains. If true quantification of deadweight consumer losses and producer gains were required, antitrust would be way outside of its competence. Rather, it confines its analysis to situations where there is no deadweight loss at all because prices do not increase or where there are no producer gains at all because the practice is naked or nearly so.

Figure 1: Williamson's Welfare Tradeoff Model[23]
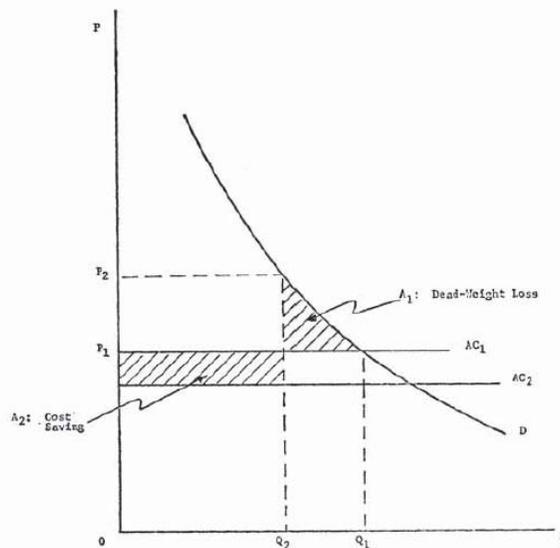
The system that we actually have requires one to show only higher prices resulting from the exercise of market power. It requires a complex calculation of the magnitude of resulting efficiencies only in a very few cases, some of which are discussed below. When courts do dismiss antitrust complaints on "welfare" grounds, it is because they have concluded that there is very likely no deadweight loss at all.

Protection of consumer welfare is also most consistent with the "disaggregation" rule that U.S. courts apply in certain cases, particularly those involving collaborative activity such as joint ventures and some mergers. Some so-called joint ventures are nothing more than fronts for cartels, and in these cases the venture itself can be enjoined. Often,

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23. The figure comes from Williamson, *supra* note 4, at 21.

however, the venture as a whole is quite beneficial, but particular rules or practices seem unreasonably anticompetitive. Good examples are the NCAA rule restricting nationally televised college football games, which the Supreme Court condemned in 1984,[24] and the Supreme Court's more recent *American Needle* decision,[25] which concluded that an exclusive marketing agreement covering all NFL teams' individually held trademarks should be treated as a collusive rather than unilateral act.[26] The same thing roughly applies to mergers among firms that have multiple products, plants, or stores. Under the government agencies' "fix it first" approach, the merging parties may have to spin off assets in markets where a price increase is threatened but be permitted to continue with the balance of the merger.[27]

Both the NCAA in collegiate sports and the NFL in professional football are highly efficient joint ventures. No one in these cases was urging that they be dismantled. Rather, in such situations courts isolate the challenged practice, determine whether it is likely to harm consumers, and then consider whether the practice is reasonably necessary to the operation of the venture. If not, then the court can enjoin the practice while leaving the balance of the venture intact. If the practice is necessary to the venture's operation, however, then the court has no choice but to consider whether the venture as a whole is competitively beneficial or competitively harmful. Once again, I do not know of a single case that has upheld such a venture after a fact finding to the effect that the venture actually raised consumer prices by facilitating a market-wide output reduction. Analogous inferences apply to multimarket mergers, where particular groupings of sales threatening consumer harm can be isolated and tied off in some cases but not others.

I state two propositions about the courts' and enforcement agencies' approaches to antitrust welfare issues, one of which has just been developed, and the second is further developed below: (1) When a practice produces unambiguous consumer losses in the form of short-run reduced output or higher prices, immediate cost savings to producers do not serve as an antitrust defense, no matter what their size; further, claims of long-run gains to producers are ignored once actual consumer harm is found. (2) When a practice has ambiguous effects on consumers, perhaps because it harms some but benefits others, but the effects cannot be netted out and quantified, then producer gains resulting from efficiency may become relevant. These are antitrust's hardest consumer welfare cases. In them, measurable output effects are particularly important.

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24. NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85 (1984).

25. Am. Needle, Inc. v. NFL, 130 S. Ct. 2201 (2010).

26. *Id.* at 2214–15.

27. *See* U.S. Dep't of Justice, Antitrust Division Policy Guide to Merger Remedies § IV.A.1 (June 2011), *available at* http://www.justice.gov/atr/public/guidelines/272350.pdf.

II. CONSUMER WELFARE'S HARD CASES

Williamson's welfare tradeoff model, which he acknowledged to be "naïve,"[28] treats consumers as if they are all alike. The higher prices and deadweight loss applies to all of them. Things are often not that simple. Many practices affect different consumers in different ways. They may injure some, benefit others, and leave still others indifferent. As a result, net consumer harm may be exceedingly difficult to measure. Measuring net consumer harm in such cases requires identifying those consumers who gain and those who lose, and then quantifying their gains and losses. In some cases, such as where output increases under the challenged practice, we would also have to identify consumers that were not in the market at all until the practice brought them in. This group is always benefitted by the practice.

In sum, when consumers are affected differently by a challenged practice, computing net consumer harm or benefit can be just as difficult as computing net benefit under a general welfare test when the practice creates both producer gains and consumer losses. In that case, the fact finder might want to consider some other things. For example, when a practice causes both consumer harm and consumer benefit but net effects are unknown, producer gains may become more relevant, particularly if they result from significant production efficiencies. Second, output effects may be helpful. In most cases, neither will be dispositive.

This section briefly examines some practices that fall into this category, mainly, (1) variable proportion ties; (2) ties that result in interproduct price discrimination; (3) tying and bundled discounts of imperfect complements; (4) vertical restraints and other practices used to facilitate third-degree price discrimination; and (5) resale price maintenance which causes nominally higher prices but produces services that are more valuable to some customers than to others. This list is not meant to be exhaustive.

A. Variable Proportion Ties

In a variable proportion tie, a firm typically sells a durable good together with one or more consumable complements in variable proportions.[29] For example, in one famous old case, the defendant sold a mimeograph copy machine subject to a requirement that purchasers buy its ink and stencils; and in another case, a refrigeration box was sold on the condition that customers use only the seller's dry ice.[30] These firms are engaging in a

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28. Williamson, *supra* note 4, at 21.

29. *See* 9 AREEDA & HOVENKAMP, *supra* note 10, ¶ 1711; Erik Hovenkamp & Herbert Hovenkamp, *Tying Arrangements and Antitrust Harm*, 52 ARIZ. L. REV. 925, 943–50 (2010).

30. *See* Carbice Corp. of Am. v. Am. Patents Dev. Corp., 283 U.S. 27, 33 (1931) (same, tying patented refrigeration box and dry ice); Motion Picture Patents Co. v. Universal Film Mfg., 243 U.S. 502, 517–19 (1917) (condemning tie of movie projector and motion pictures in a patent infringement suit); Henry v. A.B. Dick Co., 224 U.S. 1, 17, 36, 49 (1912) (approving the tie in a patent infringement suit); *see also* BOHANNAN & HOVENKAMP, *supra* note 1, chs. 10, 13.

type of second-degree price discrimination by dropping the price of the primary, or tying, good and increasing the price of a tied good.[31] In second-degree price discrimination the seller typically offers a common set of terms to all, and buyers indirectly select the amount of the seller's return by making a collateral decision, such as the amount they wish to purchase. In the variable proportion tie, the seller earns a higher return from those who purchase a great deal of the tied good than from those who purchase smaller amounts. Such tying arrangements have produced voluminous private antitrust litigation in the United States.[32] These cases have also been ubiquitous in the franchise industry, where variable proportion tying is a common mechanism for reducing franchisee entry costs and enlarging franchisor profits through price discrimination. The price of the franchise (the tying product) is often zero, but is in any event much lower than the standalone value of the franchise. For example, a nondominant franchisor may give franchises to firms at no charge but then tie food products or other consumables and place an overcharge on these.[33] Once again, the franchisor earns more from higher volume franchises.

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31. *See, e.g.*, Xerox Corp. v. Media Scis., Inc., 660 F. Supp. 2d 535, 539 (S.D.N.Y. 2009) ("As is true of other printers manufacturers, Xerox generally sells its printers at a low margin or a loss, hoping to earn a profit through later sales of high margin ink."); *see also* Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19, 33 (1957).

32. *See, e.g.*, *In re* Apple iPod iTunes Anti-trust Litig., Nos. C 05-00037 JW, C 07-06507 JW, 2010 WL 2629907, at *1, 7–10 (N.D. Cal. June 29, 2010) (denying summary judgment on claim that Apple unlawfully tied its iTunes media library to various Apple devices); Static Control Components, Inc. v. Lexmark Int'l, Inc., 487 F. Supp. 2d 861, 881–85 (E.D. Ky. 2007) (denying summary judgment on a claim of tying printers and print cartridges via technological tie); *see also In re* Apple iPod iTunes Antitrust Litig., No. C 05-00037 JW, 2011 WL 5864036, at *1, 4–5 (N.D. Cal. Nov. 22, 2011) (granting class certification).

33. *See, e.g.*, Siegel v. Chicken Delight, Inc., 448 F.2d 43, 46–47 (9th Cir. 1971), *cert. denied*, 405 U.S. 955 (1972) (franchise fee of zero, tying consumable products at overcharge).
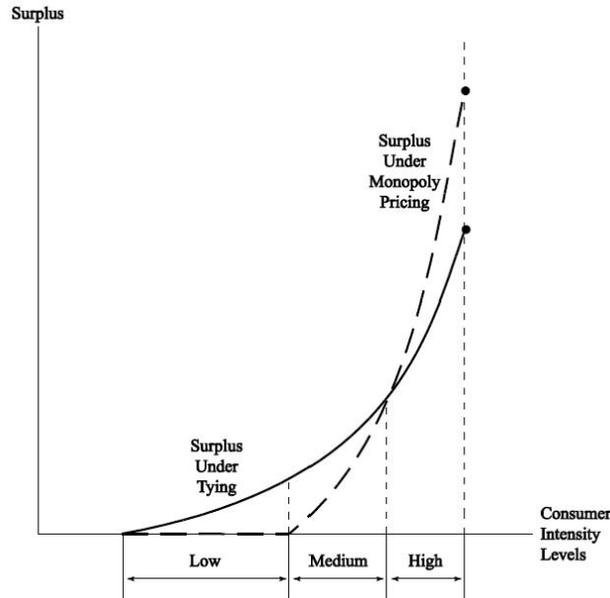
Figure 2

Figure 2 illustrates the complex consumer impact of variable proportion ties. The vertical axis measures consumers' surplus, while the horizontal axis measures the number of tied units that the consumer purchases. The solid line gives consumers' surplus under tying and the dotted line without tying. Consumers are divided into three categories arrayed along the horizontal axis.[34] The low preference category consists of consumers who would not be in the market at all at standalone pricing, but who enter the market in response to the tying product price cut. For example, a firm selling computer printers at a standalone price of $400 might cut the price to $200 but then charge $20 for an ink cartridge that would otherwise sell for $10. These low preference consumers would not be in the market at all under single product pricing, but the lower printer price induces them to purchase a printer and at least one cartridge.

For customers who are brought into the market in this fashion, the tie is an unqualified welfare gain from zero to whatever surplus they achieve from entering the market. The magnitude of their aggregate gains depends on the size of the printer output increase in response to the price cut, and this can be very large when the demand curve is convex to the origin and is fairly shallow in the higher output reaches. This fact explains why one

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34. They are actually divided into four categories. At the extreme left next to the origin, the unnamed space consists of consumers who do not even purchase the tying product at the reduced price under the tying arrangement. Since they are out of the market under both tying and independent sales, they are indifferent to the tie.

observes so many variable proportion ties in product differentiated markets that are competitively structured, such as franchising. The gains do not result from the seller's ability to charge seriously supracompetitive prices to high intensity users, something that lack of market power prevents them from doing. Rather, they come from the very large numbers of new users that come into the market under the variable proportion tie.

The middle group of customers consists of those who would have been in the market under standalone pricing, but for them the price decrease in the printer is greater than the price increase in the cartridges. For example, if someone in our illustration used fewer than twenty printer cartridges over the printer's lifetime he or she would come out ahead under tying.[35] The size of this group depends on a number of factors. One factor is the durability of the tying product and the amount of tied product used during its lifetime. Another is whether the tie is airtight. For example, many printer manufacturers attempt to tie cartridges, but their success is limited to the extent that customers or third parties can refill cartridges or produce generics.[36] A third factor is the depth of the tying product price cut and the height of the tied product price increase. Finally, this group experiences some deadweight lost to the extent that they treat the printer price as a fixed cost and the cartridge cost as variable, because they will do less printing.

The third group of "high" intensity buyers is made worse off by the tie. They are the ones that use more than twenty cartridges in our illustration. As a result, the higher cartridge prices more than offset the lower printer price.

Whether consumers in the aggregate are better or worse off from such an arrangement would be nearly impossible to assess. Even if we could measure the output effects of the tie, that would not be a measure of welfare, which consists of the surplus value above the price. Theoretically, we could plot how many cartridges each customer bought. Losses would be the cartridge overcharge paid by the highest intensity group, less printer cost savings, plus the deadweight loss caused by their reduced printing. Consumer gains in the middle group would be the lower price of the printer less the overcharges on the cartridges they purchase, although their marginal printing cost could be higher, also creating a small deadweight loss. The most difficult group to measure would be the lowest intensity

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35. A user of nineteen cartridges over the lifetime of the printer would spend an additional $190 on cartridges, but would have saved $200 on the printer itself.

36. This is a principal issue in the ongoing *Lexmark* litigation in which Lexmark attempted to use a microprocessor that required the printer to be able to "read" a particular cartridge before it would work, but third parties were able to emulate the microprocessor. *See* Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 547–48 (6th Cir. 2004) (discussing how a third party's evasion of a microprocessor lock very likely did not violate the Digital Millennium Copyright Act, which can bar the circumvention of technological locks on copyrighted material); *see also* Static Control Components, Inc. v. Lexmark Int'l, Inc., 697 F.3d 387 (6th Cir. 2012) (rejecting antitrust claims and invalidating some design patents intended to make a generic cartridge producers product incompatible with the manufacturer's printers).

buyers who are not in the market at all prior to tying. In order to quantify their gains we would need to know not only how many additional units they purchased but also how much surplus they achieved from those transactions, very likely an impossible number to determine.

Further, two additional elements of consumer benefit may need to be considered. First, for manufactured goods such as printers and cartridges, there are likely to be economies of scale in production that enable the manufacturer to achieve lower costs at higher volume. Even the high preference users could be better off if cost savings resulting from higher output were passed on, as they would ordinarily be.

Second, if both the tying and tied good are sold in markets that are not strongly competitive, the tie is likely to eliminate a certain amount of double marginalization, which occurs when two sellers supply vertically related or complementary goods that are consumed together, and each of them has some market power.[37]

B. Ties Causing Interproduct Price Discrimination

"Interproduct" price discrimination occurs when a tie joins two (or more) goods upon which buyers place not only different values, but value them in different ways. Such ties can be either fixed or variable proportion, although the fixed-proportion version is much easier to analyze. Historically the most famous example is block booking, which occurs when movies, television shows, or other productions are sold only in bundles, or "blocks."[38] Suppose that a firm is offering to license two films called Alpha and Beta to two different customers. Given that the films have already been made, marginal costs are close to zero. The two customers place a positive value on each movie, but their valuations (willingness to pay, or WTP) differs, as follows:

	Alpha	Beta
Customer 1	10	5
Customer 2	3	11

First, suppose that the seller decides to license the two movies individually. It has some pricing choices. It can charge the higher price for each movie and license to only one buyer. That is, Customer 1 would

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37. *See infra* Part II.C. On double marginalization in tying, see BOHANNAN & HOVENKAMP, *supra* note 1, ch. 2; Erik N. Hovenkamp & Herbert Hovenkamp, *Tying Arrangements, in* OXFORD HANDBOOK OF INTERNATIONAL COMPETITION POLICY (Daniel Sokol & Roger D. Blair eds., forthcoming 2013); Hovenkamp & Hovenkamp, *supra* note 29, at 958–61. In the case of complementary products, the theory of double marginalization is sometimes referred to as "Cournot Complements," because Cournot applied his theory of oligopoly pricing to producers of complements as well as competitors. Hovenkamp & Hovenkamp*, supra* note 29, at 959 n.122.

38*. See, e.g.*, United States v. Lowe's, Inc., 371 U.S. 38 (1962) (per se unlawful). On television shows, see MCA Television Ltd. v. Pub. Interest Corp., 171 F.3d 1265 (11th Cir. 1999) (per se unlawful); *see also* Thomas A. Lambert, *Appropriate Liability Rules for Tying and Bundled Discounting*, 72 OHIO ST. L.J. 909, 967–68 (2011).

purchase a license to Alpha at a price of 10 and Customer 2 would license Beta at a price of 11. Total profits would be 21 and consumer surplus would be zero. Alternatively, the seller could charge the lower price and license to both customers. Alpha would obtain a price of 3 from each customer, producing earnings of six. Consumer surplus would be 7. For Beta the license price would be 5 and the seller's total revenue would be 10. Consumers' surplus would be 6. In this case, the seller's profits would be 16 and total consumers' surplus would be 13. Finally, the seller could tie the two movies together at a price of 14. In that case, it would sell to both customers, earning 28 in profits. Consumers' surplus would be 1.

Note that consumers' surplus under tying, which is 1, is much less than consumers' surplus under the second unbundled choice, which is 13. However, if tying were unlawful there is no reason to think that the seller would make this choice. Rather, it would take the second unbundled choice, in which its profits would be 21 but consumers' surplus is zero. That is to say, if forbidden from tying, the seller will choose to take its remaining most profitable alternative. In this case output would be half as much under separate sales as under tying.

In the illustration, consumers' surplus under tying (1) is considerably less than it is under the second unbundled choice (13). However, because the seller enjoined from tying would take the first choice, the injunction would actually reduce rather than increase consumer welfare and also reduce output. In order to make consumers better off, the injunction must not only prohibit tying, it must also regulate the price at which Alpha and Beta are licensed, forcing the licensor to charge the lower rather than the higher price.

Significantly, different assumptions about consumer willingness to pay will yield different outcomes. In the following example, the buyers have different WTP, but in contrast to the first example, the buyers here rank the two films in the same order:

	Alpha	Beta
Customer 1	6	8
Customer 2	5	6

Here, the seller could price individually at Alpha=6 and Beta=8 and sell only to Customer 1, earning 14 and creating zero consumer surplus. It could also bundle at a price of 11, selling to both customers. It would earn 22 and create a surplus of 3. If it sold individually at a price of 5 for Alpha and 6 for Beta, both customers would purchase and the result would be exactly the same as tying. In that case, a policy of tying must have some other explanation, such as transaction cost savings.

One could go on with the illustrations, but the point is that selecting an antitrust rule that would maximize consumer welfare without regulating the price would require the decision maker to have knowledge in every case of each buyer's willingness to pay, a luxury that most antitrust courts would not have. Further, bundling tends to increase output because the buyers

necessarily purchase both products. Single product pricing may or may not attain that result, depending on individual customers' WTP.

Finally, it is worth noting that bundling of this type generally involves product-differentiated goods, all of which are sold at a price higher than marginal cost. As a result, bundling may eliminate double marginalization and produce a lower price. For example, if a theater's capacity is 100 movie showings per month and license agreements are a month long, a seller offering a package of films covering the entire month is likely to have a lower profit-maximizing price than two or three different sellers each bidding for a portion.

C. Tying and Bundled Discounts of Imperfect Complements

Often a seller's profit-maximizing price for a bundle of two (or more) goods is lower than the sum of the profit-maximizing prices when the goods are sold separately. The reasons for this can be divided into two types. First are economies of joint provision, which are cost reductions that occur when the production or distribution of two goods experiences common costs or economies of scale or scope. For example, installing hard drives in computers may be much cheaper if it is done with everything else during a single trip down the assembly line. If the computer box must be reopened by a separate operator in order to install the hard drive, the sum of the two costs could be considerably greater. As a result, a seller might "tie" computers and hard drives. Alternatively, the packaging, plastic container, and inert base material in a medical capsule might be a common cost. As a result, it is cheaper to sell cold sufferers the cough suppressant and the decongestant in a single capsule than to sell each of them in a separate capsule.[39] Such economies related to technical joint production costs are typically denominated economies of scope or cost reductions that accrue to combining multiple steps or ingredients into a single product or process. The general result is the same: the cost of producing the combination together is lower than the cost of producing each good separately. The mere fact that goods are very strong complements does not necessarily justify tying because there might not be any efficiencies that accrue from joint provision. For example, an automobile and gasoline may be (virtually) perfect complements, but they are not manufactured together and are typically not sold together.

The other reason that combined sales can result in lower prices than separate sales is double marginalization. When two different sellers of complementary goods—say, a jar and a lid—each have market power and they are unable to coordinate their output, the sum of their individual profit

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39. *See* David S. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 YALE J. ON REG. 37, 66–68 (2005).

maximizing prices will typically be higher than the combined profit maximizing price if one of them sold the two goods together.[40]

For example, suppose one firm sells computers and another sells LCD monitors. Further, the LCD monitors are subject to price fixing, which reduces the number of LCD monitors sold from 10 million to 8 million.[41] This output reduction injures LCD monitor consumers, but it also injures the computer maker, because the computers and LCD monitors are used together. The computer maker does not enjoy any of the profits being earned by the LCD monitor cartel, but it does face reduced demand for computers.

In this case, the computer maker can earn more by building its own LCD monitor factory and selling a computer/LCD monitor package. The impact will be to restore the demand for its computers and also to destabilize the LCD monitor cartel. Precisely the same thing would occur if the LCD monitor market was controlled by a monopolist rather than the cartel. The price that this computer maker charges for the computer/monitor combination would be lower than the sum of separate computer and monitor prices when the monitors are sold collusively because the manufacturer would maximize over the computer/monitor package.

For reasons of either productive efficiency or elimination of double marginalization, a form of allocative efficiency, the combined price of two products is often lower than the price of each product when sold separately, and in particular when each product is sold separately by different sellers. The gains from eliminating double marginalization of this sort usually occur only if the seller is assured that it is providing both the tying and tied product. If the pairings of goods covered by these tied-up combinations were perfect complements, that would be the end of the story. Consumers and producers would both benefit from tying, and the ties would be preferable no matter which welfare theory we picked.

Perfect complements are goods that are invariably used together—or, more technically, situations in which one good has no value unless it can be consumed together with the other good. Relatively few goods are absolutely perfect complements. For example, even the proverbial printer and ink cartridge are not perfect complements. While printers are nearly always used with ink cartridges, there is some demand for printers on the sets of shows such as *The Office*, where the printer is used as a stage prop and not to print anything.

Even when tying is the only way to take advantage of the efficiencies that result from product complementarity, most goods are in fact not perfect complements. For example, the cold sufferer may want the cough suppressant but not the decongestant because she does not need it, it makes

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40. *See* Hovenkamp & Hovenkamp, *supra* note 29, at 940. In the case of patent licenses, see Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 Tex. L. Rev. 1991 (2007).

41. *See, e.g.*, *In re* TFT-LCD (Flat Panel) Antitrust Litig., 781 F. Supp. 2d 955 (N.D. Cal. 2011).

her drowsy, or she prefers not to take unnecessary medications. The purchaser of a computer may already have a perfectly good monitor, or vice versa.

When complements are imperfect the consumer benefit query becomes more complex. The cold sufferers who want treatment for both symptoms unquestionably benefit when they are sold together at a lower price, but the one who has only one symptom is worse off. This is not a "foreclosure" injury but one that accrues from an "unwanted tied product."[42]

Imperfect complements present situations when bundled discounts can be socially beneficial, giving the cost savings to those who are able to take advantage of the bundle, but permitting the separate market to continue for those who do not. For example, suppose that the profit maximizing prices of selling *A* and *B* separately are *A*=10 and *B*=8. Joint production efficiencies permit the bundle to be sold at a profit-maximizing price of 15. This could be true either because of productive efficiency gains, such as the cold capsule, or elimination of double marginalization. One group of customers uses *A* and *B* together. They will be better off under bundling, with welfare savings of 3 per purchase. However, another group wants *A* alone and place no value at all on *B*. For them, the bundle at a price of 15 imposes consumer losses of 5, and many will not purchase at all at that price, reducing the seller's output.

In this situation, the profit-maximizing strategy for the seller may be to set a bundled price of 15 for *A*+*B*, and an unbundled price of 10 for product *A*. If there are yet other customers who want *B* without *A*, it might sell *B* at a price of 8. Offering a bundled discount will not always be a practical strategy because sometimes the cost of segregating production or distribution into bundled and unbundled forms is too high. For example, shoes are almost universally sold in tied pairs rather than bundled discounts even though there are very likely no economies of scope in joint production. Joint distribution is a different matter. Once it has sold a 15EEE left shoe the seller would have to hold the right shoe for someone who wanted it— very likely many years—or else would have to order a replacement. In this case processing costs may very likely exceed any savings. These conclusions tend to be confirmed by the fact that, with few exceptions, shoe sellers refuse to sell individual shoes, even at a price exceeding half of the price of the pair, and even though this market seems highly competitive.

Some writers infer anticompetitive behavior when the seller of multiple products raises the price of one or both single product at the time it offers a bundled discount.[43] While that is a possibility there are alternatives that seem more obvious. The customers who want *A* alone may be less elastic than those who want the *A*+*B* bundle. Once it has segregated the sales via

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42. *See* 9 AREEDA & HOVENKAMP, *supra* note 10, ¶ 1724.

43. Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397, 468 (2009); *cf.* Patrick Greenlee, David Reitman & David S. Sibley, *An Antitrust Analysis of Bundled Loyalty Discounts*, 26 INT'L J. INDUS. ORG. 1132, 1137 (2008).

the bundled discount, the seller additionally engages in third-degree price discrimination by charging the standalone *A* buyers a higher price now that it is able to identify them. Third-degree price discrimination can be shown to reduce welfare when output is no higher than under single pricing,[44] but it can increase welfare when output increases. For example, to return to the story of the computer screen cartel, the computer manufacturer would offer a lower price by bundling the computer and the screen. But it might have a set of customers who use its computers for servers and do not require a monitor. The computer maker would then respond by offering a bundled discount for the package but pricing separately to the server buyers, charging them whatever price maximizes its profits, which could be the same, higher, or lower than the old price under strictly separate sales. Assessing welfare gains in such a case would require computation of the welfare gains accruing to the customers who purchase the bundle, offset by or added to the welfare gains or losses suffered by those who purchase the single product. Once again, the baseline is whatever alternative the seller would adopt if the bundled discount were prohibited.

D. *Vertical Restraints and Third-Degree Price Discrimination*

Vertical nonprice restraints have rarely been condemned since the Supreme Court's *GTE Sylvania* decision in 1977.[45]   In fact, vertical nonprice restraints can facilitate third-degree price discrimination, whose potential for competitive harm is greater than the potential for harm from the second-degree price discrimination that results from variable proportion tying.[46]   Third-degree price discrimination creates a discontinuity in demand that necessarily entails a welfare loss unless the price discrimination increases output.[47]   For example, if a seller charges commercial users a price of 100 and home users a price of 60, a commercial user who values the product at 99 will not purchase it, but a home user who values that unit by 61 will. The result is a welfare loss of 38 because the product is transferred to a lower value buyer. If the third-degree price discrimination transfers only one sale from a higher value to a lower value customer, the result reduces consumer welfare, assuming that nothing else changes and that output does not increase.

Vertical nonprice divisions of all kinds—customer, product, or territorial—can facilitate third-degree price discrimination by enabling a seller to segregate its sales between customers who place different values on the product. For example, hotdogs in the stadium may claim a price of

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44. *See* Richard Schmalensee, *Output and Welfare Implications of Monopolistic Third-Degree Price Discrimination*, 71 AM. ECON. REV. 242, 242 (1981); Hal R. Varian, *Price Discrimination*, *in* 1 HANDBOOK OF INDUSTRIAL ORGANIZATION 600 (Richard Schmalensee & Robert D. Willig eds., 1989).

45. Cont'l T.V., Inc. v. GTE Sylvania Inc., 433 U.S. 36, 57–58 (1977).

46. *See* HOVENKAMP, *supra* note 4, § 11.2d.

47. *See* Hovenkamp & Hovenkamp, *supra* note 29, at 935; Schmalensee, *supra* note 44, at 243.

$4, while those out on the street can be sold only at $2. If the hot dog manufacturer sells to a stadium vendor at $4, less retailer markup, and to the street vendor at $2, the street vendor will begin making stadium sales at the higher markup, or else arbitrage its hotdogs to the stadium vendor. The manufacturer will address this problem by restricting each dealer to its assigned territory, or perhaps by agreeing with the stadium manager to exclude the street vendor from making sales within the stadium. It must also prohibit the transshipping that would occur if the street dealer could supply the stadium dealer. These are typical vertical restraints.

The difficulty in assessing this practice is that the output impact is so difficult to determine. If forbidden to discriminate, the manufacturer may very well forego the street sales altogether. That will make street buyers worse off and not do a bit of good for the stadium buyers. Once again, assessing consumer welfare effects is driven entirely by determining what would happen if the price discrimination, or alternatively the territorial restraint itself, were forbidden. To the extent that manufacturers use territorial restraints as expansion techniques to capture new sales by offering more attractive terms, forbidding them is likely to be harmful rather than beneficial to consumers.

E. Resale Price Maintenance and Nominally Higher Prices

A fair amount of data suggests that retail prices are nominally higher under resale price maintenance than they would be otherwise.[48] One would certainly expect that, because if RPM has any impact at all it is to prevent price-cutting by certain dealers. Higher nominal prices do not necessarily make for reduced consumer welfare, however. To the extent that RPM is induced by manufacturers in order to control free riding, pricing could be higher but consumer welfare could be higher as well. By contrast, RPM induced by a powerful dealer or dealers' cartel is likely to produce higher retail prices that are detrimental to consumers.[49] The classical defenses of RPM used to defend the practice used two parallel demand curves, with the higher one indicating that demand for the good with the RPM-induced dealer services was stronger than demand without them.[50] Welfare improved even though nominal prices were higher because the net effects of the increased services plus the induced price were positive.

But what if the shifted demand curve is not parallel but is less steep, as Figure 3 below illustrates? In this case, more marginal customers (those with lower valuations) take a great deal of value from the point-of-sale services, while "inframarginal" customers do not. Intuitively, this seems to be a robust presumption. For example, the marginal purchaser of a computer or other technically complex device is likely to be the newbie who needs a fair amount of point-of-sale education in order to convince him

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48. *See* 8 AREEDA & HOVENKAMP, *supra* note 10, ¶¶ 1628, 1630–33.

49. *Id.* ¶ 1604.

50. *See, e.g.*, HOVENKAMP, *supra* note 4, §§ 11.3a, 11.3c.

or her of the need for a computer. The inframarginal customer may be an experienced user who does not need such services. In Figure 4, the maintained price with the point-of-sale services is P_2, reflecting the higher marginal costs (MC_2) that the point-of-sale services require the dealer to provide. By contrast, P_1 and MC_1 represent the lower price and marginal cost that accrues from closed box sales without the point-of-sale services. Output is a little higher when the services are supplied, thus making RPM profitable to the manufacturer. However, the consumers' surplus triangle above MC_2 is definitely smaller than the triangle above MC_1, notwithstanding MC_2's higher output. In both cases the retailer is earning only a competitive return.

Figure 3
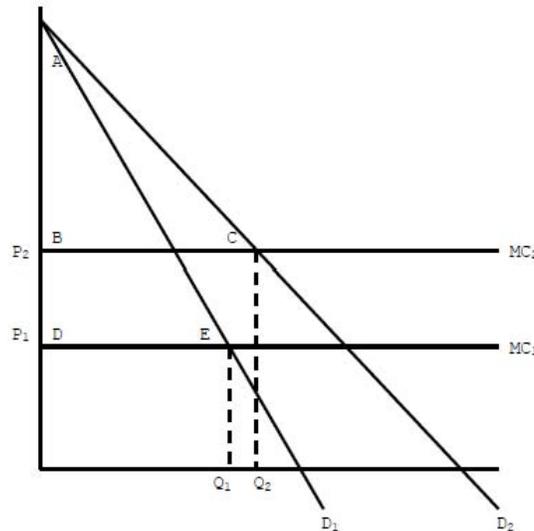
The figure illustrates the possibility that consumer welfare can be reduced by some instances of resale price maintenance even though the particular instance actually increases output. Of course, this figure, like most others, is engineered to illustrate that possibility. Whether consumers' surplus actually declines depends on a number of factors, including the amount of the price increase, the cost of the incremental point-of-sale services, and the direction and amount by which the demand curve shifts under RPM. As the proportion of inframarginal customers is lower, RPM used for this reason is more efficient. Making these measurements reliably would place heroic burdens on courts except perhaps in obvious situations.

Problematically, in considering the use of resale price maintenance to induce point-of-sale services, it is worth noting that vertically integrated

manufacturers who own their service outlets will typically engage in precisely the same behavior. For example, a computer manufacturer with franchised retailers might want to use RPM to induce the dealers to invest in consumer education provided in the retailer's store, as the figure illustrates. But if it is profitable for the manufacturer to use RPM in this way when it has independent dealers, it is very likely also profitable for the manufacturer to provide equivalent point-of-sale services through its wholly owned dealers. Distribution costs would rise, but output would also rise, thus profiting the manufacturer. But in the latter case, we would be using antitrust to micromanage a manufacturer's unilateral decision about what to include or not to include in its product/service package. For example, an automobile manufacturer's decision to include overnight test drives might benefit some customers but hurt others who simply pay the increased price of the car. But that hardly turns such decisions into antitrust violations.[51]

III. ALTERNATIVE ECONOMIC GOALS

Beyond general and consumer welfare are other economic concerns that legal policy generally should not ignore. That does not entail, however, that antitrust is a necessary or even a useful tool for considering them. Typically, a better approach is to limit the use of competition policy to make the economy as large as realistically possible by rules that encourage both competition and the attainment of technological efficiency. Having made this pie as large as it can be, a secondary set of policies can then be used to reallocate some of the resulting wealth in ways that satisfy other economic needs, but without doing excessive harm to the efficiency-encouraging goals of the first set of policies. For example, if formation of a cartel is thought to be necessary to protect less efficient firms from bankruptcy, antitrust is better used to prevent the cartel by ignoring the bankruptcy defense, but then permit tax or welfare policy to shift some resources to employees and perhaps owners of the bankrupt firms. Preserving inefficient firms by giving rivals higher price/cost margins would be an egregiously inefficient way of protecting small business.

Many practices that are challenged under the antitrust laws produce dislocations in the economy, as do many practices that have no antitrust relevance whatsoever. Plant closings can yield a loss of jobs, as can consolidation of distribution chains, whether brought about by merger or simple internal reorganization. Further, these injuries can result in competitive as well as noncompetitive markets.

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51. *See id.* §11.3c; William S. Comanor, *The Two Economics of Vertical Restraints*, 21 SW. U. L. REV. 1265 (1992); Kenneth G. Elzinga & David E. Mills, *The Economics of Resale Price Maintenance*, *in* 3 ISSUES IN COMPETITION LAW AND POLICY 1841 (Wayne D. Collins ed., 2008); Lawrence S. White, *Resale Price Maintenance and the Problem of Marginal and Inframarginal Customers*, 3 CONTEMP. POL'Y ISSUES 17 (1985). The basic theory of the inframarginal consumer comes from A. Michael Spence, *Monopoly, Quality, and Regulation*, 6 BELL J. ECON. 417 (1975).

Consider, for example, the merger between competing gasoline producers who have a sufficiently small market share that no price impact results. To the extent the merger produces any efficiencies, the producers will be better off and consumers will be either better off or indifferent.[52] However, one consequence of the merger is that the two firms consolidate various gasoline stations and eliminate some jobs.[53] Should antitrust policy intervene in this case in order to protect these jobs?

The injury in this case has absolutely nothing to do with *competition policy*. Even if two tiny restaurants in Manhattan or London should merge, with no market-wide consequences whatsoever, the result might very well be some consolidation. For example, the consolidated restaurant may require only one head chef rather than two. Indeed, if a single owner of two restaurants should close one of them and consolidate its operations, that result could follow even if the market shares involved are trivial.

Figure 4
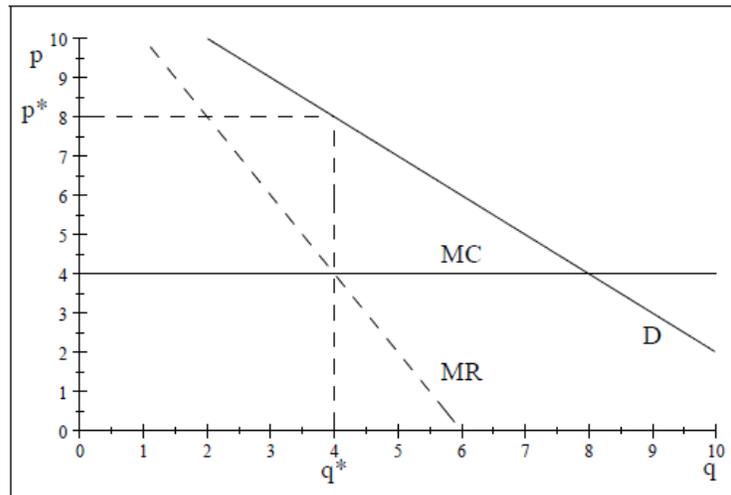
Suppose we permit a merger to monopoly in order to sustain a faltering firm. In Figure 4, the rectangle over the left side of the marginal cost function (*MC*) represents a wealth transfer from consumers to the post-merger monopoly. The triangle over the right side of *MC* represents a deadweight loss that accrues to neither producers nor consumers. The figure illustrates the rare but pedagogically helpful situation where demand

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52. In a perfectly competitive market the efficiencies produced by a merger are not "passed on" to consumers through the price mechanism, because the market price is invariant to the costs of any single firm. Rather, the firm will increase its production at the market price.

53. *Cf.* Reibert v. Atl. Richfield Co., 471 F.2d 727 (10th Cir. 1973) (denying a fuel distributor standing to sue after it lost its position after a consolidation brought about by the Atlantic/Texaco merger).

is linear and marginal costs are constant. In that case, the wealth transfer is precisely double the deadweight loss, so we can measure them as $2X$ and X, respectively. In the figure, the wealth transfer is 16 and the deadweight loss is 8. Under ordinary assumptions of demand curves (that are convex to the origin) and rising marginal costs, this ratio will be different and typically the deadweight loss will be larger than half the wealth transfer.

This merger provides the merging firms with gains of 16, assuming that the market was competitive prior to the merger. However, it does so at a cost to consumers of 24. The tax and transfer system is not costless either, so the mere fact that there is a 50 percent premium on the financial support to these merging firms is not dispositive against it. However, the administrative cost in the tax system is paralleled in this case by acquisition costs as well as the administrative expenses of the merger investigation, which could be quite costly given that we wish to measure employment or other effects as well as the competitive effects of the merger. The deadweight loss must be added on top of these administrative costs.[54]

Further, there is no reason for thinking that the private gains of 16, which this merger facilitates, are the correct amount to deal with the potential loss of employment in this market. The gains to be had from monopoly are a function of market structure, market share, and consumer behavior. The potential employment losses are a function of firm specific factors or the state of the economy as a whole that have little to do with these numbers. That is, giving the postmerger firm 16 may be too much, just right, or too small an amount to address the employment issue.

Further, because the merger creates a monopoly, the gains run across the postmerger firm's entire output, even though the only output that was at risk for loss of jobs is that of the acquired firm. If the merger facilitates collusion rather than creating monopoly, the nonmerging rivals will also be able to reduce output and raise the price. Permitting the merger effectively pays a subsidy to all the firms in the industry even though only a small portion of them are in financial distress.

In sum, permitting the anticompetitive merger in order to protect employment in the postmerger market seems seriously wasteful of resources. And this analysis considers only short-run consequences. In the process of permitting this merger, we might also be reducing the incentive to innovate or placing a price umbrella over obsolete technology or inefficient administration, which explains why the acquired firm was in financial distress in the first place. All of these losses would be overhead on our financial assistance to the distressed firm or its employees.

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54. One factor to be considered is the incidence and shifting of any tax and transfer system. If the tax is nothing more than a price increase by another name (with part of the revenue going to the government and then paid back to the firms), then the impact of the tax may not be all that different from permitting the merger to monopoly, with the important differences that the government can choose who and how much will be paid out. Direct taxes such as income taxes, however, ordinarily cannot be shifted.

As a second example, consider a dominant firm that acquires a superior technology that operates at lower variable costs than other firms in the market. This firm can engage in exclusionary pricing by charging a price above its own costs that is nevertheless too low to permit rivals to survive. In the short run, jobs and other resources could be lost. Antitrust could respond by (1) doing nothing, provided that the prices are above cost, which is more or less what we currently do; (2) force the firm to increase its price sufficiently to permit the rivals to survive; or (3) require the firm to share its technology with smaller rivals.

Setting aside distributive concerns, we are now in somewhat ambiguous territory on the competition policy questions. Reasonable people disagree about whether above-cost pricing should ever be predatory and also whether and when dominant firms should be required to share technology with rivals. However, to the extent that these questions relate to concerns about competition and total market output, they are not addressed to wealth distribution as such. Our question is whether competition policy should favor such constraints on dominant firms in favor of smaller competitors even when they are acknowledged to be inefficient. Their appeal is that they protect a class of persons (presumably small business) that we deem worthy of protection.

Forced sharing of an essential input might be thought justified on distributive grounds, even though it cannot be shown to lead to higher output and lower prices. Assuming the forced sharing was completely welfare neutral, perhaps that argument would have one kind of force. But the arguments against forced-sharing rules—such as the essential-facility doctrine—are that forced sharing reduces welfare, at least in the long run, because it eliminates incentives for independent development or innovation.[55] Firms that have a legal entitlement to procure a resource from the dominant firm have a reduced incentive to develop alternatives for themselves.

The analysis for productive efficiency is roughly similar. For example, we might use competition law in order to preserve an obsolete technology or to protect inefficient small businesses that have higher costs than dominant firms. A good example of such a use is the *Brown Shoe* decision,[56] which condemned a merger in an industry where market shares were so small that monopoly or cartel pricing was not plausible. What the merger did, however, was exacerbate a trend toward larger production facilities and vertical integration that was driving smaller shoe stores out of business. The government argued that the merger was unlawful because these smaller firms would have to compete either against lower priced or higher quality shoes.[57]

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55. *See* 3B AREEDA & HOVENKAMP, *supra* note 10, ¶¶ 771–72.
56. Brown Shoe Co. v. United States, 370 U.S. 294 (1962).
57. *See* Herbert Hovenkamp, *Markets in Merger Analysis*, 57 ANTITRUST BULL. 887 (2012), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1945964.

In every one of these cases, use of antitrust policy seems like a socially costly way of getting to a result that might be perfectly defensible on general policy grounds but that imposes high direct costs and a plethora of indirect and unforeseen costs. Whether or not protecting or subsidizing inefficient firms may be justified on grounds of general policy, using antitrust law to achieve that goal does not seem sensible, given the costs and uncertainty of the benefits. Further, as the illustrations suggest, these criticisms apply to both underuse and overuse of antitrust—that is, both to situations such as the merger case where antitrust is *not* applied for distributive reasons, and to the unilateral pricing or dealing case, where it is applied for purely distributive reasons.

CONCLUSION

When one considers both efficiency and administrability, consumer welfare emerges as the most practical goal of antitrust enforcement. In cases where consumer effects are more or less uniform, the consumer welfare principle usually requires smaller amounts of information to implement and avoids the costs and numerous errors associated with any kind of balancing of welfare gains and losses to different groups. In fact, antitrust policy almost never balances except in cases where there is nothing to put on one side of the scale or weighting differences are so great as to make the balancing solution simple and obvious.

This simplicity largely disappears, however, in cases where a practice impacts different groups of consumers in different ways and it is impossible to segregate those portions creating a consumer benefit from those that result in consumer harm. In these hard cases, decision makers may have to rely on secondary indicators or intuitions about net harm. When no firm conclusions can be drawn about consumer impact, the existence of producer gains becomes relatively more important. For example, if a tying arrangement produces significant producer gains but impacts different consumers differently and net harm or benefit is impossible to determine, then the law should be reluctant to intervene.