

The Undead?

A Comment on Tying, Bundled Discounts, and the Death of the Single Monopoly Profit by Einer Elhauge

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A Comment on Professor Elhauge's Paper

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I. Introduction

Professor Einer Elhauge has written a paper whose title (*Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*¹) announces its large ambition—to drive a stake through the heart of the Chicago School's Single Monopoly Profit theory. Perhaps I watch too many scary movies, but even after watching his valiant efforts I still sense an uncanny presence, as though the creature will continue to haunt competition policy in spite of his assurances. In this note I want to explain why I think the creature may have more resilience than he has anticipated. Its resilience matters: Professor Elhauge's arguments are used to motivate a vision of the priorities for antitrust enforcement that may be seriously misguided if his optimism is unfounded.

Economic theories are useful ways to think about the world, but only if used in conjunction with empirical evidence. A theory is just a way to organize the evidence we have: It tells us that if certain conditions hold then certain other conditions will hold as well, and it is useful only if we have independent evidence that the first set of conditions holds.² We have known for some years now that the Single Monopoly Profit theory is not true always and everywhere and that, therefore, tying and bundling could be used anticompetitively.³ What matters is whether we can identify in practice when such conditions hold, and whether we have evidence that such conditions hold often enough for anticompetitive tying to be considered a frequent occurrence rather than a relatively rare exception to a more general Chicago rule.

It is now well known that tying can enable a firm with market power to practice price discrimination between different kinds of consumers. This may have

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positive or negative effects on consumer welfare according to circumstances. It can also, under conditions developed extensively in Professor Elhaug's paper in an example involving printers and scanners, allow such a firm to extract more of the surplus from multi-unit buyers. And it can sometimes be used profitably to extend market power into an adjacent market, either by evicting (or preventing entry by) a rival, or by weakening the rival (for instance, by raising its costs) so that it competes less effectively.

I want to make three main points. First, it is an empirical question whether the conditions under which tying can be anticompetitive are frequent or rare. But Professor Elhaug offers us no empirical evidence, instead relying on his own intuitions about the kinds of circumstances that are likely or not. Second, the example he develops at length to show that tying can extract more surplus from both tying and tied markets is a bizarre one, resting on a type of tying that is extremely rare and of doubtful feasibility; his argument is not generalizable to more normal cases. Third, he has failed to take account of the ubiquity of assembly operations in a modern industrial economy, a very large number of which are entirely harmless although his diagnostic tools would consider them presumptively suspect. Overall, the implication he draws that "Even without a substantial foreclosure share, tying by a firm with market power generally increases monopoly profits and harms consumer and total welfare, absent offsetting efficiencies" is both unjustified as science and impractical as policy.

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II. The Need for Empirical Evidence

For an argument constructed largely from theoretical examples, Professor Elhaug's paper contains a large number of words such as "likely" (56 instances), "probably" (7 instances), "generally" (45 instances), "often" (21 instances) and "usually" (22 instances). There is even one charming instance where he writes that a particular condition is "probably usually" met.⁴ These are used to buttress a large number of empirical assertions, many of them highly controversial. Yet I have been unable to find in the paper a single instance of the use of these terms which is supported by a careful empirical study. Perhaps the most striking case concerns the welfare implications of price discrimination, which are well known to be ambiguous.⁵

These welfare implications are ambiguous for two main reasons. First, compared to uniform pricing by a firm with market power, a price discriminating firm will charge higher prices to some buyers and lower prices to others. The consumer welfare effect will require balancing the harm to the first group against the

benefit to the second group. Second, price discrimination often increases profits (which is why firms do it), and it may be that these profits can offset some degree of net harm to consumers, even if profits carry lower weight than consumer surplus. The cases in which it does not increase profits involve either the intensification of competition by discrimination (to consumers' benefit) or a monopolist's commitment problems over time (where price discrimination likewise benefits consumers to the monopolist's detriment).

I am not aware of any empirical study that has tried to investigate whether, in a modern economy overall, the conditions under which price discrimination increases welfare are more likely than those under which they reduce it. Professor Elhauge does not cite any. This does not, however, deter him from claiming the support of the economic literature for the conclusion that "imperfect price discrimination likely decreases consumer welfare."⁶ This is a travesty of what the literature says: It has shown conditions under which imperfect price discrimination lowers consumer and total welfare, and it is Professor Elhauge's own assertion—based on generalization from particular examples with such simplifications as linear demand schedules⁷—that these conditions are "likely" to hold in tying cases.⁸

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Not knowing of empirical studies to the contrary either, I cannot know whether Professor Elhauge's intuitions are reliable. But neither can

he. And I can suggest some reasons why we would be unwise to trust his intuitions as the last word on the matter. First of all, it is easy to think of common cases where price discrimination is likely to enable groups of consumers to be served who might otherwise be served little or not at all. These cases will increase overall consumer welfare since they benefit these groups while leaving more or less unaltered the conditions under which the rest of the market is served. End-of-season clothing sales, cheap train tickets for seniors, educational discounts on software for students, sales of low-priced pharmaceuticals to developing countries, pre-paid mobile phone tariffs, children's prices in restaurants and movie theatres; the list is long (and most of these cases are popular even among people who think that, in the abstract, price discrimination is a bad thing). Price discrimination of this kind almost certainly enhances consumer welfare: If pharmaceutical companies had to charge identical prices in the United States to those they charge in Bangladesh, who can doubt that they would simply withdraw from the Bangladesh market, with no beneficial impact on their pricing in the United States to compensate? I do not know whether the kind of price discrimination made possible by tying is more like these cases or more like the welfare-reducing cases, but I am sure that argument by analogy with textbook examples using linear demand is not the way to settle the question.

A second reason for caution is that Professor Elhauge claims that producer surplus should essentially be given zero weight in social welfare, even though most of the arguments he gives for this conclusion (such as the higher average income of shareholders when compared to consumers⁹) imply that they should be given a lower weight but still one greater than zero. He asserts—again without any empirical backing—that “any additional monopoly profits reaped by tying will be dissipated by the costs of competing to obtain market power.”¹⁰ That there is some such dissipation is not seriously disputed by economists, but there are also beneficial effects on innovation of competition to obtain market power, as is recognized in the patent system. It is an empirical question what the net impact of these countervailing forces will be. There is a large literature trying to measure such effects, with far from conclusive findings (though several scholars have found “U-shaped” results, with some degree of market power being more beneficial to innovation and growth than either complete monopoly or a high degree of competition).¹¹ There are also harmful effects of monopoly other than those Professor Elhauge mentions, such as the dissipation of monopoly rents through high production costs.¹² But their overall impact on the social value of producer profits remains an empirical question. Professor Elhauge does his readers no service by claiming that his own intuition can be substituted for empirical research.

My unscientific impression is that most economists would consider that a world in which all price discrimination was forbidden would have lower total welfare than a world in which all price discrimination was permitted. Their main ground would probably be that price discrimination of some kind is so pervasive (try thinking of industries where firms never give discounts to loyal customers), and that so many firms have some levels of fixed costs which they need to recover by pricing even a little above marginal cost, that innovation will be increased for given cost to consumers if firms can do this in ways that are responsive to differential price elasticities. My (again unscientific) impression is also that this reasoning is correct. I have less clear intuitions about the effects purely on static consumer welfare, which might, on average, go either way. But I am not interested in persuading readers that my intuitions are more reliable than Professor Elhauge’s. Choosing one scholar’s intuitions over another’s is not the way in which this question should be settled.

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III. Printers and Scanners

In pages 8-14 of his paper, Professor Elhauge develops an example of tying which is designed to show “the leveraging of one monopoly profit into two monopoly profits that the single monopoly profit theory said was impossible.”¹³ His example involves two goods, printers and scanners, demand for which is independent. Buyers (who are identical) also buy multiple units for which their willingness to pay is declining with the number of units bought, so that each buyer in effect has

a downward sloping demand curve. The fact that buyers are identical means that this is not a story about tying facilitating price discrimination, but a case—indeed a challenging one for the Chicago doctrine—in which monopoly rent in one market is independent of monopoly rent in the other. Printers are supplied monopolistically, scanners are supplied competitively. So far, so good.

Now comes the strange part. “The printer monopolist can often extract this individual consumer surplus,” writes Professor Elhaug, “by refusing to sell its

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printers at the monopoly price to buyers unless they also agree to buy *all* their scanner requirements from the printer monopolist.”¹⁴ This is a tying requirement such as the world has rarely seen outside of gangster life. A normal tie would

say “if you buy a printer you must buy a scanner with it,” but would leave you able to buy any subsequent scanners from the competitive supplier. This would leave you still facing the competitive marginal cost for scanners. And your marginal cost for the printer would have been raised by the monopolist’s margin on scanners, since every extra printer you buy means you must buy one more scanner at the monopoly price before being free to buy at the competitive price. Thus the tie would lower your marginal willingness to pay for printers exactly as the one monopoly profit theory says it would. Nor does the argument depend on there being one scanner sold per printer: any fixed number of overpriced scanners that must be bought with printers would still raise the implicit marginal cost of printers.

Except where the two goods are technologically complementary, a circumstance I shall consider in a moment, it is hard to see how any tie that forced the buyer of the monopoly good to buy from the monopolist all subsequent supplies of the competitive good could possibly be enforced without illegal coercion. How can the monopolist possibly know whether the buyer has bought more scanners than printers? Even if the monopolist could know, what could stop the buyer of the printer from setting up a separate subsidiary that buys and operates its scanners? It would be like a heart surgeon who is the only one capable of curing your heart condition insisting that you should thereafter never drink in any bar but the one run by his shady brother. Or like Microsoft insisting that when you use its operating system you must also buy from it, not its browser (which is a complementary good) but also all your future supplies of coffee or Scotch whisky at monopoly prices. Many monopolists might dream of such powers but they are unenforceable in fact and in law, and the kinds of tying contracts discussed in competition cases bear no resemblance to them.

There is only one circumstance in which the monopolist can realistically enforce such a tie. That is where the monopoly good is technologically complementary to the competitively supplied good in such a way as to make useless (or more generally to lower the value of) any version of the latter supplied by a competitor. The classic instance is in aftermarket, such as for replacement parts.

Here the tie may say “if you buy a printer you must buy your cartridges from us.” But this is enforceable only to the extent that printer cartridges are technologically complementary to printers, so that using rival cartridges is either impossible or liable to pose a risk to the operation of your printer, either directly or by invalidating its guarantee. And because they are technologically complementary, they will be economically complementary, so their demand will not be independent. Then the tie will lower the willingness to pay for the printer, just as the one monopoly profit theory claims it would.

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To summarize, Professor Elhaug’s printers-and-scanners example relies on two conditions—namely independent demand for the two goods, and an enforceable tie obliging the purchaser of the monopoly good to buy all future supplies of the competitive good at monopoly prices—which are inconsistent with each other except in wildly implausible circumstances. The example, ingenious as it is, tells us nothing about the welfare implications of tying in general.

IV. The Ubiquity of Tying in a Modern Economy

Professor Elhaug writes at several points as though tying is an egregious and mostly conspicuous exception to the normal law-abiding behavior of modern firms. He is prepared to allow tying if offsetting efficiencies can be demonstrated, and the fact that this places the burden of proof on the firm suggests he thinks that cases where there are efficiencies are likely to be unusual.¹⁵ He exempts, also under some conditions, products that are used in fixed ratios and lack separate utility, and he appears to consider that this caveat will remove the risk that assembled products might mistakenly be viewed as ties.

However, these two suggestions radically underestimate the extent to which vast numbers of firms in a large range of industries have business models that are built around the assembly for their customers of component products, many of which have separate utility. Newspapers contain bundles of articles, television channels contain bundles of programs, software packages contain bundles of features, travel service packages contain bundles of holiday trips, electronic goods contain bundles of components (such as memory cards in computers, speakers in television sets, and earphones supplied with MP3 players), restaurant menus contain bundles of dishes, prepared meals contain bundles of ingredients, websites contain bundles of contributions, cars contain bundles of features. Guitars typically come supplied with strings and cameras with memory cards, though buyers can, and often do, substitute other versions for the pre-supplied ones. GPS devices come with pre-installed maps and mobile phones with pre-installed ring tones; all of these have separately marketed substitutes. Hotel rooms come equipped with minibars, and hotel bathrooms with shampoo. Lamps come with

bulbs and cars come with car radios. The list is endless. In some cases the market power of the sellers is negligible, but this is far from true for all of them. And even so, what are the implications for firms that acquire market power in industries where bundling is the norm? Should an entire business model become suspect because Professor Elhauge's intuitions tell him that tying is "generally" harmful?

In February 2009 the low cost airline Ryanair caused widespread derision in the press and among customers when it announced that it was considering charging customers for the use of toilets in its aircraft.¹⁶ This service had previously been bundled with the air ticket. Many airlines have significant market power on individual routes: Is public policy seriously to consider obliging them all to follow Ryanair's example on those routes? Professor Elhauge might reply that this is obviously not a serious case, and no antitrust enforcement time or energy would be wasted pursuing cases such as these. Unfortunately, though, reasonable people

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do not agree on which tying examples are serious and which are not. Some people could not seriously imagine that Microsoft could be reproached for upgrading the features in the browser that is bundled with its operating system, given that rival browsers are downloadable easily for free; others consider this a very serious problem indeed. So long as antitrust doctrine presumptively prohibits, on the part of firms

with significant market power, practices that are extremely widespread throughout every part of a sophisticated modern economy, the choice of enforcement priorities will depend on the idiosyncratic perception of any antitrust official with time to spare and a reputation to make. One does not have to be a cheerleader for Chicago School economics (and I am not) to think that is not a desirable direction in which to move antitrust in the 21st century.

In short, we need a more precise and empirically better grounded view of the circumstances under which tying by firms with market power is harmful to competition than Professor Elhauge's paper has given us. The Chicago doctrine of one monopoly profit may not exactly be stalking the night looking for fresh blood, but for the time being it remains defiantly undead. ▼

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- 1 Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, HARV. L. REV. 123 (forthcoming Dec. 2009).
 - 2 Sometimes we may have no direct evidence about the first set, but infer indirect evidence from the fact that some of the second set of conditions hold, and use this to make further inferences about the rest of the second set.
 - 3 A useful survey of reasons is in Jean Tirole, *The Analysis of Tying Cases: A Primer*, 1 COMPETITION POL'Y INT'L 1, 1-25 (Spring 2005).

- 4 Elhauge, *supra* note 1 at 12.
- 5 See Hal Varian, *Price Discrimination and Social Welfare*, 75 *Amer. Econ. Rev.* 4, 870-875 (1995); Mark Armstrong, *Recent Developments in the Economics of Price Discrimination*, *ADVANCES IN ECONOMICS AND ECONOMETRICS: THEORY AND APPLICATIONS*, Blundel & Persson, eds, (2006); Mark Armstrong & John Vickers, *Welfare Effects of Price Discrimination by a Regulated Monopolist*, 22 *RAND*, 4, 571-581 (1991).
- 6 Elhauge, *supra* note 1, 2. All page references are to this paper unless otherwise specified.
- 7 Even with linear demand there may be good arguments for allowing price discrimination because of effects on innovation; see Theon van Dijk, *Innovation incentives through third-degree price-discrimination in a model of patent breadth*, 47 *ECON. LETTERS*, 3-4, 431-435 (1995).
- 8 Professor Elhauge's precise claim is that "the economic literature proves that price discrimination always decreases total welfare unless it affirmatively increases output" (Elhauge, *supra* note 1 at 34). While correct, this is phrased in such a way as to imply that increasing output is an unusual thing for price discrimination to do. Professor Elhauge provides no empirical arguments to support this view.
- 9 Elhauge, *supra* note 1 at 41. Although this claim is probably correct, it does not imply that all or even most shareholders are wealthy. Many individuals of modest means are shareholders through retirement plans.
- 10 *Id.* at 40.
- 11 See Philippe Aghion, Nick Bloom, Richard Blundell, Rachel Griffith, & Peter Howitt, *Competition and Innovation: an inverted-U relationship*, *Q. J. ECON.* 120, 721-728 (2005); Wendy Carlin, Mark Schaffer & Paul Seabright, *A Minimum of Rivalry: Evidence from Transition Economies on the Importance of Competition for Innovation and Growth*, *BERKELEY ELECTRONIC PRESS CONTRIBUTIONS TO ECON. ANALYSIS & POL'Y* 3, 1284 (2004).
- 12 See Charles Ng & Paul Seabright, *Competition, Privatisation and Productive Efficiency: Evidence from the Airline Industry*, 111 *ECON. J.* 473, 591-619 (2001).
- 13 Elhauge, *supra* note 1, at 11.
- 14 *Id.* at 9, emphasis added.
- 15 In a similar vein, Professor Elhauge argues that defendants should be entitled to escape a quasi *per se* prohibition by proving that price discrimination increases output. This way of placing the burden of proof implies he thinks output-increasing instances of price discrimination are the exception, not the norm. As noted above (note 8), this presumption has not been established by any empirical argument in his paper.
- 16 See *Pilots Aghast at Ryanair Toilet Charge*, *THE TIMES*, 27 February 2009, available at www.timesonline.co.uk/tol/travel/news/article5815088.ece.