Volume 12 No.1
Fall 2014

Tomorrow's Antitrust Rulings on Conditional Pricing: How the Latest Economic Research May Show the Way

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I. Introduction

Under conditional pricing, to qualify for a price discount, a buyer must allocate a target level purchase or share to a seller. This arrangement could be for a single product (i.e., loyalty discounts) or it could be for a mixture of multiple products (i.e., bundled discounts). Many inventive contractual arrangements allow conditional pricing: all-unit discounts, market-share discounts, full-line forcing, and bundling.[2]

It is important to distinguish our focus from contracts that explicitly condition on the price of rivals. A good example of this is the most-favored-customer (MFC) agreement. With an MFC agreement, a seller guarantees to match the lowest price a buyer can get from any of the seller's rivals. By contrast, our focus is on contracts that provide a buyer with price discounts conditional on the level of that buyer's own purchases.

Regardless of the types of the contractual arrangements, conditional pricing can either harm or promote competition—depending on the circumstances. Conditional pricing harms competition when a firm with marker power is able to foreclose a rival from a large portion of the market, raise the rival's cost, or drive it out of the market entirely.[3]

Conditional pricing can also promote competition.[4] For instance, in the absence of conditional pricing, a distributer may free-ride on a supplier's promotional investment, reducing the supplier's incentives to invest. A conditional pricing agreement may reduce this free-riding problem by aligning the supplier and distributor's incentives to engage in promotion. This can promote inter-brand competition, to the ultimate benefit of consumers.

As a result, in economic theory, the competitive effects of conditional pricing practices are ambiguous. Thus, these competitive effects become an empirical question. We survey the small, but growing, body of empirical research on conditional pricing, and consider the guidance it gives to the resolution of inconsistencies in current judicial thinking.

II. Apparent inconsistencies in recent case law

Over the last 15 years, courts have faced an increasing number of cases involving conditional pricing practices. In deciding cases, courts have relied on case law relating to either predatory pricing or vertical restraints as their guide. Considering conduct to fall within the class of predatory-pricing has invited the use of a price-cost test, in which conduct involving pricing above cost is not considered problematic. This test is simple, easily administrable (at least conceptually), and provides bright-line rules for business and legal communities. However, the analysis may run the risk of overly simplifying what in practice are complicated economic phenomena. The vertical restraint case law, on the other hand, allows for a more comprehensive analysis of the pro- and anticompetitive effects of conditional pricing practices. But full analyses of complicated antitrust cases are hard to administer and burdensome on the parties. In the absence of a unified approach within economic research, the courts have oscillated between these two approaches and at times adopted inconsistent standards of review.

Cases involving bundling contracts provide a good example of inconsistent review standards. In *LePage's v. 3M,*[5] LePage's, a private label transparent tape seller, brought an antitrust action against 3M, the manufacturer of Scotch tape. LePage's claimed that 3M engaged in anticompetitive bundled discounts that prevented it from gaining or maintaining large volume sales. The Eastern District of Pennsylvania decided against the applicability of a price-cost test, adopting the full rule of reason approach employed in vertical restraint cases. In an *en banc* hearing, the Third Circuit affirmed the approach adopted by the district court. By contrast, four years later, in *Cascade Health Solutions v. PeaceHealth*, the Ninth Circuit contradicted the Third Circuit's analytical approach declaring a price-cost test to be appropriate in bundling cases.[6]

A second type of case subjected to inconsistent standards of review has involved loyalty discounts. In *ZF Meritor v. Eaton*,[7] a manufacturer of heavy-duty truck transmissions, ZF Meritor, sued the other leading manufacturer, Eaton Corporation. ZF Meritor claimed Eaton's market-share

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[2] Exclusive dealing contracts are a special case of market-share discounts where the required market share to qualify for the discount is 100%. Tying is a special case of bundled discounts, where the individual components of a bundle are not available for à la carte purchase.
[3] Theories of conditional pricing as facilitating collusion are also possible. We follow the recent case law in focusing on foreclosure theories as the primary anticompetitive concern.
[4] Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, Handbook of Antitrust Economics, 391 – 414 (Paolo Buccirossi, ed., 2008).
[5] *LePage's Inc. v. 3M,* 324 F.3d 141 (3d Cir. 2003).
[6] *Cascade Health Solutions v. PeaceHealth,* 502 F.3d 895 (9th Cir. 2007).
[7] *ZF Meritor, LLC v. Eaton Corp*., 646 F.Supp.2d 663 (D. Del 2009).

discount contracts with every purchaser foreclosed it from the market. In 2012, the Third Circuit ruled against adopting a price-cost test.[8] Again, by contrast, in 2014, in *Eisai Inc. v. Sanofi-Aventis U.S., LLC*, the District of New Jersey decided to analyze Sanofi's market-share discount agreements with hospital group purchasing organizations using a price-cost test.[9]

There are at least two reasons for these inconsistencies in judicial review:

First, a desire to conduct a direct, clear, and administrable review pushes courts toward simple tests—even when this may result in allowing some anticompetitive conduct in some cases. This involves balancing the harm of 'false-negatives' against the cost and ex-ante uncertainty surrounding a full rule of reason analysis. Weighing these concerns may well have inclined different circuits in different directions in conditional pricing cases.

The second reason is a lack of consensus within the economics literature on the competitive effects of conditional pricing. Relying on past economic research on conditional pricing means depending on a largely theoretical literature. Until very recently, empirical research on conditional pricing was extremely rare. The theory literature has highlighted both the pro- and anticompetitive potential of conditional pricing. However, theory is ill-suited to giving guidance as to the balancing of these effects in real industries. This leaves courts in a difficult position when relying on economic theory in adjudicating cases. However, with the emerging body of empirical work, we are starting to see a more data-driven picture of competitive effects. This could well start to shape the thinking of judges who have historically preferred "to wait until economic theories have undergone testing in the academic debate and have received the endorsement of economically astute legal scholars before citing them as basis for their decisions."[10]

III. Recent developments in the economics of conditional pricing

Modern thinking about conditional pricing might be thought to start with the rejection of the old Chicago School's single-monopoly theory of tying (a special form of bundled discount) by Michael Whinston in 1990.[11] Whinston pointed out that the single-monopoly theory held under highly restrictive assumptions about competition, and that relaxing these assumptions gave rise to the potential for tying to alter the level of competition in a market by forcing competitors to exit. As a result, a monopoly can profitably expand its market power to a complementary goods market via tying arrangements. This paper was significant in contributing to a drift in thinking away from the pro-defense stance of the Chicago School and prompting ongoing theory work.[12]

Despite its many advances, the recent body of theoretical research has not completed our understanding on the real-life competitive effects of conditional pricing. These models' predictions still depend on specific assumptions, and, read together, competitive effects remain ambiguous. In that sense, they provide what might be thought of as "possibility results." In contrast, recent empirical work shows us what actually has happened, and, as such, may be more influential when it comes to guiding trends in judicial approach.

We can group the empirical evidence on the competitive effects of conditional pricing into three categories: (1) papers examining conditional pricing practices as a form of price discrimination, (2) papers examining potential exclusionary effects of conditional pricing, and (3) retrospective studies of judicial and regulatory events.

1. Conditional price discounts as a form of price discrimination

The first group of empirical papers examines bundled discounts. Crawford[13] (2008) is one of the first papers testing the theory that firms use bundling as a form of price discrimination in the cable television industry. The author finds evidence that cable channels use bundling to reduce consumer heterogeneity and extract more surplus. In other words, unbundling would raise consumer welfare. However, the results bear a caveat. Crawford assumes that when TV channels are unbundled there are no changes in advertising and programming costs, because renegotiations with the content providers are not allowed.

In fact, in a follow up paper, Crawford and Yürükoğlu[14] (2012) find the opposite result—by accounting for changing input costs. They assume that cable networks are forced to renegotiate prices with content providers due to unbundling. As a result, networks' input costs increase. The increasing input costs are then passed on to the customers. The authors

[8] *ZF Meritor, LLC v. Eaton Corp., 696 F.3d 254 (3d Cir. 2012).*
[9] *Eisai Inc. v. Sanofi-Aventis U.S., LLC, No. 3:08-cv-04168 U.S. Dist. LEXIS 46791, at *68-71 (D.N.J. Mar. 28, 2014).*
[10] William E. Kovacic, *The Influence of Economics on Antitrust Law*, 30 Economic Inquiry, 294-306 (1992).
[11] Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 American Economic Review, 837-59 (1990).
[12] For recent theoretical papers, see: (1) John Asker and Heski Bar-Isaac, *Raising Retailers' Profits: On Vertical Practices and the Exclusion of Rivals*, 104 American Economic Review, , 672-86, (2014); (2) Giacomo Calzolari and Vincenzo Denicolò, *Competition with Exclusive Contracts and Market-Share Discounts*, 103 American Economic Review, 2384-2411 (2013); and (3) Barry Nalebuff, *Bundling as an Entry Barrier*, 119 Quarterly Journal of Economics, 159-87 (2004).
[13] Gregory S. Crawford, *The Discriminatory Incentives to Bundle in the Cable Television Industry*, 6 Quantitative Marketing and Economics, 41-78 (2008).
[14] Gregory S. Crawford and Ali Yürükoğlu, *The Welfare Effects of Bundling in Multichannel Television Markets*, 102 American Economic Review, 643-85 (2012).

turn the earlier Crawford[15] (2008) result on its head: unbundling leads to a decline in consumer welfare, at least in the short run.

A third paper examining the same issue is Byzalov[16] (2010). The author finds very similar results to Crawford and Yürükoğlu, though the mechanism through which consumer welfare declines is different. Byzalov argues that unbundling leads to a decline in demand. Consumers no longer purchase content they do not value. With lower demand, cable networks' license revenues also decline. To offset this revenue contraction, networks likely increase their license fees for the remaining customers and cause a decrease in consumer welfare.

By contrast, Chu, Leslie, and Sorensen[17] (2011), examining theater pricing, and Shiller and Waldfogel[18] (2011), examining the digital music industry, both find evidence suggesting unbundling would increase consumer surplus. Both studies find that bundling is highly effective in extracting consumer surplus, such that consumers may well benefit from a simpler unbundled pricing schedule. Notably neither paper considers the impact on product mix or input pricing from unbundling.

We now turn to empirical papers examining loyalty discounts as a form of price discrimination. Miravete and Röller[19] (2003) is one of the earlier empirical papers examining the effects of competition and non-linear pricing on firms' profits and consumer welfare. The authors' empirical setting is the US telecommunications industry in the 1980s. They find that competition decreases fixed service fees and increases consumer participation. Additionally, telecommunication firms' efficiency gains from competition are partially passed on to the large customers, in terms of loyalty discounts. Therefore, customers with loyalty discounts further benefit from these price declines.[20] As a result, consumer welfare improves.

In a paper examining the Yellow Pages ad market, Busse and Rysman[21] (2005) find comparable results. The authors establish that competition brings lower prices for customers. And larger customers benefit disproportionately more from increasing competition, because additional price benefits are passed on to them via loyalty discounts. As a result, loyalty discounts equate to a price discrimination strategy that improves consumer welfare.

Recent, unpublished, work by Onishi[22] (2013) partially contradicts the above findings. Onishi studies the vertical relationship between aircraft manufacturers and airlines. To compete for larger orders, manufacturers give big airlines loyalty discounts. Onishi then argues that the resulting price distortion leads to inefficient aircraft utilization, resulting in productive inefficiency.

2. Potential exclusionary effects of conditional pricing practices

The second stream of research on conditional pricing practices focuses on potential exclusionary effects of these contracts. As in the previous stream of research, there are empirical papers investigating exclusionary effects of bundling and loyalty discounts.

The first paper on bundling is Wang [23](2011). The author examines the effects of grocery-gasoline bundled discounts on gasoline market competition in Australia. He concludes that discount gasoline operates as a loss-leader and has no exclusionary effects in the gasoline market.

A second paper working on potential exclusionary effects of bundling is Ho, Ho, and Mortimer[24] (2012). This paper examines the welfare effects of full-line forcing contracts in the home video rental industry. Full-line forcing is a unique bundling contract, where a buyer receives a reward (discount) if she purchases the full-line of products a producer sells. The authors find that movie distributers' full-line forcing agreements with video retailers are both profit maximizing and welfare enhancing. Foreclosure effects of bundling are negligible and the availability of a variety of movie titles enhances consumer welfare.

[15] Crawford, *supra* note 13 at 41-78.
[16] D. Byzalov, *Unbundling Cable Television: An Empirical Investigation*, (Temple Univ., Working Paper, 2010), http://astro.temple.edu/~dbyzalov/cable.pdf , (accessed July 15, 2014).
[17] Chenghuan S. Chu, Phillip Leslie, and Alan Sorensen, *Bundle-Size Pricing as an Approximation to Mixed Bundling*, 101 American Economic Review, 263–303 (2011).
[18] Ben Shiller & Joel Waldfogel, *Music for a Song: An Empirical Look at Uniform Pricing and Its Alternatives,* 59 Journal of Industrial Economics, 630–60 (2011).
[19] E.J. Miravete & L. H. Röller, *Competitive Non-Linear Pricing in Duopoly Equilibrium: The Early U.S. Cellular Telephone Industry*, 4069 Center for Econ. Pol. Res. (2003), *available at* http://www.eugeniomiravete.com/papers/Miravete_Roller_CEPR_4069.pdf, (accessed July 15, 2014).
[20] This paper uses the terms quantity discounts, instead of the terminology we use—loyalty discounts.
[21] M. Busse & M. Rysman, *Competition and Price Discrimination in Yellow Pages Advertising*, Rand Journal of Economics, 378-90 (2005).
[22] Ken Onishi, *Quantity Discounts and Capital Misallocation in Vertical Relationships*, (Northwestern Univ., Working Paper, 2013), *available at* http://www.uq.edu.au/economics/documents/jobmarketpapers/kenonishi.pdf, (accessed July 15, 2014).
[23] Zhongmin Wang, *Supermarket and Gasoline: An Empirical Study of Bundled Discount*, 5th Annual Conference on Empirical Legal Studies Paper (2013), *available at* http://ssrn.com/abstract=1628770, (accessed August 1, 2014).
[24] Katherine Ho, Justin Ho, & Julie Holland Mortimer, *The Use of Full-Line Forcing Contracts in the Video Rental Industry*, 102 American Economic Review, 686-719 (2012).

The empirical literature on the potential exclusionary effects of loyalty discounts is very small. However, Conlon and Mortimer[25] (2014) investigate potential efficiency and foreclosure effects of an all-unit discounting contract between a manufacturer and a retailer in the confection industry. In most industries, retailers' incentives to provide costly marketing and stocking services may not be aligned with manufacturers' incentives. For example, restocking candy is the number one priority for a confectioner. However, a retailer knows that if customers cannot find a particular candy, they will switch to another close alternative. Restocking is not the retailer's priority. Therefore, the manufacturer bears most of the stock-out costs. According to the authors, all-unit discounts allocate stock-out costs more evenly, leading to an increase in retailer's service level. When the retailer starts to bear part of the stock-out costs in terms of missed discount opportunities, it starts to invest in marketing and stocking. Therefore, all-unit discount contracts better align investment incentives between the confectioner and retailer. Additionally, the authors find suggestive, non-conclusive evidence that these discounts lead to rivals being foreclosed. In the end, the paper does not conjecture about the overall consumer welfare effects of all-unit discounts.

3. Retrospective analysis of judicial and regulatory events

The third group of empirical research papers examining conditional pricing practices conducts retrospective analyses of judicial and regulatory events. Hanssen[26] (2000) examines block booking of films in the movie industry. Block booking is a form of bundling, where the movie companies sell motion pictures as a group or block. In 1962, the Supreme Court declared block booking illegal. The Court's reasoning was that this practice was forcing exhibitors to purchase movies they do not want to show just to be able to get the movies they want to show. After a historical analysis, the author shows that in reality block booking contracts were very flexible and the exhibitors were able to negotiate the number of movies they agree to purchase. Therefore, block-booking contracts were not forcing exhibitors to purchase less popular movies by tying them with more popular movies. Instead, they were simply efficient quantity-selling arrangements, where the movie companies were providing exhibitors large numbers of movies to save on their selling costs.

A more recent paper by Nardotto, Vallettiz, and Verboven[27] (2014) examines the 2005 unbundling of the British Telecommunication's broadband Internet network and the leasing of its lines to new entrants. When it comes to unbundling an incumbent's infrastructure network, the traditional debate has been about weighting potential losses from incumbents' decreasing investment incentives against potential benefits from increasing platform competition. The authors examine the short and long run competitive effects of this unbundling. They conclude that in the short run new entry increases Internet penetration and expands the consumer base. However, in the long run, the new entrants mostly focus on customers who prefer faster broadband service and the entrants mostly invest in quality upgrades to increase their average broadband speed. The authors believe that the overall effect of the unbundling has been to change the focus of competition from price to quality of service. And in that dimension, consumers are better off.

IV. Analysis of the recent empirical literature: Findings and existing gaps

Unlike the theoretical body of research, the findings of empirical studies have much in common. The nascent body of empirical research has consistently found that conditional pricing practices were not put in place solely for exclusionary purposes. That is, efficiency dividends are overwhelmingly found to exist. Most papers also find increasing consumer surplus from conditional pricing.

While the volume of empirical work is small, the methodologies employed are diverse. The consistent findings of this literature, reached through a variety of empirical methods, make it more credible.

The literature has made progress in some areas, but certain gaps remain. The major gaps appear to be a function of a lack of data available to researchers. These gaps contribute to at least two kinds of biases in the existing empirical work.

First, most of the existing research is concentrated in two industries: telecommunications and cable TV. For the past 15 years, the Federal Communications Commission has experimented with various regulatory interventions. Agency involvement has increased the availability of data and industry specific information. As a result, researchers have been attracted to these industries.

Second, the literature is skewed away from research on the exclusionary impact of conditional pricing. To investigate the exclusionary effects, an author usually has to collect information on vertical contracts between downstream and upstream firms. Those data are scarce because the contracts are almost always confidential. Pricing data are more

[25] Christopher T. Conlon & Julie Holland Mortimer, *Efficiency and Foreclosure Effects of All-Units Discounts: Empirical Evidence*, (Nat'l Bureau of Econ. Res., Working Paper No. w19709, 2013), *available at* http://www.nber.org/papers/w19709 (accessed July 15, 2014).
[26] F. Andrew Hanssen, *The Block Booking of Films Reexamined*, 43 J.L. & Econ. 395, 395-426 (2000).
[27] M. Nardotto, T. Valletti and F. Verboven, *Unbundling the incumbent: Evidence from UK broadband*, (Univ. of Leuven, Working Paper, 2014), *available at* https://www.econ.kuleuven.be/public/ndbad83/Frank/Papers/Nardotto,%20Valletti%20&%20Verboven,%202014.pdf, (accessed July 15, 2014).

commonly available, facilitating investigations of price discrimination effects.

As a result, researchers study industries where data are available, whether or not those industries offer the most serious competition issues. This is problematic because the industries where it is hard to find data might be precisely the industries where the conditional pricing contracts exhibit anticompetitive effects. It is notable that there is little empirical work on industries with prior litigation on conditional pricing.

V. How this research might shape future case law

There are two trends in the antitrust treatment of conditional pricing. First, on the legal side, many courts prefer to have simple and administrable tests that provide business and legal communities bright-line rules. Second, on the economics side, the emerging body of empirical research has consistently found positive consumer welfare effects from conditional pricing contracts. In reality, conditional pricing does not appear to be routinely anticompetitive. Therefore, the justification for long and arduous legal investigations of conditional pricing practices may be losing ground.

This conclusion, however, results from a coarse reading of the economic literature. The difficulty of obtaining data, as outlined above, has likely shaped conclusions. What can likely be said with confidence is that efficiency justifications for conditional pricing practices have to be taken seriously. The absence of strong findings in support of exclusionary effects appears less dispositive, in light of the difficulties of conducting research using public data.

Hence, as courts become more familiar with the growing body of empirical work on conditional pricing practices, we expect a continued (if not increased) recognition of their pro-competitive effect. This may give some courts greater confidence in adopting bright-line rules, such as price cost tests. However, until the academic literature has the opportunity to examine more data around events that involves genuine competitive controversy, a move to presumptive legality may be premature.