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Title: Aftermarkets, Exclusion, and Single-Serve Coffee

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Abstract: The Supreme Court, in the 1992 case of *Eastman Kodak v. Image Technical Services*, recognized the potential for consumers to be harmed when companies engaged in anticompetitive practices in aftermarkets. Since that time, most lower courts have ignored the *Kodak* holding and reasoning, and have been reluctant to find competitive harm in aftermarket monopolization or exclusionary conduct targeted at aftermarket competitors. As a result, there has been little, if any enforcement action involving aftermarkets. This working paper lays out the potential competitive harms that can occur in aftermarkets through the lens of Keurig's practices in the aftermarket for single-serve coffee. Keurig's practices has engendered demonstrate the need for both government antitrust enforcers and courts to take the Supreme Court's mandate seriously.

Key Words: Aftermarkets, *Kodak*, Tying, Exclusion, Exclusionary Conduct

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Aftermarkets, Exclusion, and Single-Serve Coffee

Geoffrey H. Kozen[1]

I. INTRODUCTION

In 1992, the Supreme Court decided *Eastman Kodak v. Image Technical Services*, holding that a lack of power in an equipment market cannot preclude a finding of market power in a proprietary aftermarket.[2] The opinion came as a rebuke to dominant Chicago School theorists, rejecting arguments that "a rational consumer considering the purchase of Kodak equipment will inevitably factor into his purchasing decision the expected cost of aftermarket support."[3] Rather than relying on theory about how consumers should act, the majority relied on empirical evidence that they characterized as "actual market realities."[4] The Court found that in practice consumer information costs and lock-in effects caused by high switching costs could potentially allow Kodak to profitably raise prices above competitive levels.[5]

Despite the Supreme Court speaking definitively on the issue of aftermarkets, lower courts have resisted implementation, allowing firms in aftermarkets characterized by large installed bases and high information costs to extract monopoly prices from consumers. It is time for enforcers to refocus on the anticompetitive effects of permitting dominant companies to monopolize aftermarkets in proprietary goods. An excellent example of the harm to consumer pocketbooks and to consumer choice is provided by Keurig's alleged exclusionary practices in the coffee cartridge aftermarket for its brewers. While this Working Paper cannot show anticompetitive effects with certainty—only a thorough factual analysis can establish that—this case study assumes the factual allegations are true, and shows the myriad anticompetitive harms that can spring from a failure to preserve independent and competitive aftermarkets.

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[2] 504 U.S. 451 (1992).
[3] *Id.* at 495 (Scalia, J., dissenting).
[4] *Id.* at 466 (majority opinion).
[5] *Id.* at 473–77.

Americans drink more coffee per person than anywhere else in the world.[6] And coffee consumption in the United States is not likely to decrease anytime soon: the largest coffee-drinking demographic in the country is Hispanic Americans,[7] one of the fastest growing segments of the population.[8] While coffee has long been an enormous industry, the way Americans are making their coffee has recently changed markedly. In 1998, Keurig introduced a single-cup coffee brewer system that would allow consumers to brew just enough coffee for themselves, quickly, without having to grind beans, measure coffee, handle used filters, or substantially clean up.[9] The new brewing model became a hit, with almost 30% of Americans using single-serve brewers on a daily basis by 2013.[10] Keurig sells brewers near or below cost, and then seeks to recoup its profits through coffee cartridges priced above marginal cost.

As other companies have sought to emulate Keurig, and to profit from the high demand for single-serve coffee that is compatible with its machines, Keurig has responded with a series of strategic steps that appear calculated to exclude competition from the market and keep prices high. It has relied on exclusive contracts with manufacturers and distributers to potentially raise the costs of its rivals and has recently announced a redesign of its coffee makers that could, through digital rights management technology, potentially prevent competitors from selling compatible cartridges in the aftermarket.

Much of the scholarship surrounding aftermarkets and exclusion has focused on either repair services or on non-durable, non-differentiated parts; these focuses are typified by the discussions that followed the Supreme Court's *Kodak* decision.[11] In these situations, many scholars have found that aftermarket monopolization is not harmful. Where aftermarket products are not homogeneous, however, many of the key assumptions of consumer behavior no longer hold.[12] As a result, there is more of an opportunity for anticompetitive exclusion by a foremarket leader.

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[6] Marvin G. Perez and Lynn Doan, *Coffee Cravers Ignoring Bean-Price Surge for Caffeine Fix*, BLOOMBERG NEWS, Mar. 13, 2014, *available at* http://www.bloomberg.com/news/2014-03-12/coffee-cravers-ignoring-bean-price-surge-for-caffeine-fix.html.
[7] NATIONAL COFFEE ASSOCIATION USA, *2014 National Coffee Drinking Trends*, *available at* http://www.ncausa.org/i4a/pages/index.cfm?pageID=924. The report indicates that 74% of Hispanics, compared to 61% of Caucasians and 44% of African Americans, drink coffee regularly.
[8] Anna Brown, PEW RESEARCH, *U.S. Hispanic and Asian Populations Growing, but for Different Reasons*, June 26, 2014, *available at* http://www.pewresearch.org/fact-tank/2014/06/26/u-s-hispanic-and-asian-populations-growing-but-for-different-reasons/.
[9] *The Keurig Story*, KEURIG.COM (Sept. 15, 2014), http://www.keurig.com/the-keurig-story.
[10] NATIONAL COFFEE ASSOCIATION, *supra* note 7.
[11] *Eastman Kodak v. Image Technical Services, Inc.*, 504 U.S. 451 (1992).
[12] See section III.B, *infra*.

The paper proceeds as follows: Part I begins with an overview of the coffee industry in which Keurig operates, including the separate single-serve coffee maker market and the aftermarket for single-serve cartridges that are compatible with Keurig machines. It explains why this constitutes a relevant antitrust market. Part II will discuss aftermarket monopolization and its effects. Part III will examine naked exclusion and how it can hurt competition. Part IV will do the same for exclusion through tying arrangements, and demonstrate why innovation cannot justify permitting Keurig to avoid enforcement of competition law.

II. KEURIG'S BUSINESS, MARKETS, AND ANTICOMPETITIVE PRACTICES

Keurig Green Mountain makes both single-serve brewers and compatible cartridges, known in the industry as "portion packs."[13] It reported annual revenue of $4.36 billion in 2013.[14] While the company also sells bulk coffee, that constitutes only a small proportion of sales. There are two relevant product markets in examining single-serve coffee. First, Keurig competes in a foremarket for the design, manufacture, and sale of single-serve brewers. Secondly, Keurig competes in a market for the design, manufacture, and sale of cartridges of coffee, tea, and other beverages that are compatible with its brewers, the "K-Cup Market."[15]

A. OVERVIEW OF THE MARKETS IN WHICH KEURIG COMPETES

1. Single-Serve Brewers

Keurig first introduced single-serve brewers to the American market in 1998, and the innovation soon proved highly popular. Single-serve brewers provide a faster, cleaner, and easier alternative to drip coffee makers or to using a French press. While each of the three brewer designs competes to capture the coffee drinking public as customers, and therefore to some extent Keurig is competing with all coffee makers,[16] the market is highly tiered, meaning any competition between

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[13] Much of the factual evidence in this piece comes from specific lawsuits that are now being litigated. For the purposes of analysis, all the allegations reported in those suits are taken as true, absent my finding evidence to the contrary. Obviously this analysis may require modification if those allegations prove erroneous.
[14] GREEN MOUNTAIN COFFEE ROASTERS, INC. FISCAL 2013 ANNUAL REPORT 32 (2013), *available at* http://files.shareholder.com/downloads/GMCR/3000890867x0x722116/241A67DD-8DCC-4BE1-B30B-65371EDC095E/Green_Mountain_Annual_Report.pdf; Frances Rathke, Keurig Green Mountain CFO, Green Mountain Q4 2013 Earnings Call (Nov. 20, 2013), transcript available at http://www.morningstar.com/earnings/PrintTranscript.aspx?id=60483466.
[15] This paper will refer to the coffee market, because the excluded competitors are independent coffee roasters. However, all arguments also hold for tea or other beverages produced in K-Cups.
[16] Memorandum of Law in Support of Defendant's Motion to Dismiss the Direct Purchaser Plaintiff's Consolidated Class Action Complaint at 18–19, In Re. Keurig Green Mountain Single-Serve Coffee Antitrust Litigation (S.D.N.Y. 2014) (No. 1:14-md-02542).

Keurig and drip brewers is unlikely to be intense enough to qualify as a single market for antitrust purposes. The existence of tiers is clear from the premium consumers are willing to pay for single-serve brewers. The typical cost of a Keurig product ranges from $90 to more than $200.[17] By comparison, a drip coffee maker often retails for between $15 and $30.[18] French presses can be even cheaper. Because they possess other features valued by consumers, it is unlikely that the price of Keurig brewers, and other single-serve brewers, is meaningfully constrained by drip coffee makers or by French presses.

In the market for single-serve coffee makers, Keurig has a dominant position. While it competes with other single-serve brewers, such as Mars' "Flavia;" Bosch's "Tassimo;" Philips' "Senseo;" and Nestle's "Nespresso," in recent years Keurig has controlled 89% of all single-serve home brewer sales by dollar value.[19] Keurig utilized a loss-leader model for its sales— it retails brewers at or below cost, in the hopes that consumers respond to lower up-front prices. Keurig has sold over 35 million brewers, including 10.6 million in fiscal year 2013, and 5.1 million in the first quarter of 2014.[20] These quantities dwarf all competitors, and allow Keurig to exercise market power. Moreover, due to technical difficulty, exclusionary patents, and required capital investment,[21] the barriers to entering the market for single-serve brewers are high. Thus, Keurig's exercise of market power is unlikely to draw effective entry, at least in the short term.[22]

2. The K-Cup

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[17] Shop, KEURIG.COM (last visited Oct 1, 2014); Search for "Keurig Brewer", AMAZON.COM (performed by author Sept. 15, 2014); Search for "Keurig Brewer", KOHLS.COM (performed by author Sept. 15, 2014); Search for "Keurig Brewer", MACYS.COM (performed by author Sept. 15, 2014); Search for "Keurig Brewer", TARGET.COM (performed by author Sept. 15, 2014); Search for "Keurig Brewer", WALMART.COM (performed by author Sept. 15, 2014).
[18] Search for "Drip Brewer", AMAZON.COM (performed by author Sept. 15, 2014).
[19] The single-serve brewer market in 2013 had net sales of $930 million. NPD Group Consumer Tracker Services, *Single_Serve Coffeemaker Sales Near $1 Billion in U.S.*, Apr. 28, 2014, *available at* https://www.npd.com/wps/portal/npd/us/news/press-releases/single-serve-coffeemaker-sales-nearing-1-billion-dollars-in-u-s/. Keurig's brewer net sales in 2013 came in at $827.6 million. FISCAL 2013 ANNUAL REPORT, *supra* note 14, at 78. Thus, Keurig's sales represent 88.98% of the market by value.
[20] Fact Sheet, Keuriggreenmountain.com (June 2014), *available at* http://www.keuriggreenmountain.com/~/media/Files/PDF/Media%20Library/Fact%20Sheets/Keurig_Green_Mountain_Fact_Sheet_6_2014.ashx; Green Mountain Coffee Roasters Reports Full Fiscal Year and Fourth Quarter Fiscal 2013 Results, KEURIGGREENMOUNTAIN.COM (Nov. 20, 2013) *available at* http://investor.keuriggreenmountain.com/releasedetail.cfm?releaseid=808735; Brian Kelley, Keurig Green Mountain CEO, Green Mountain Q1 2014 Earnings Call Transcript at 2 (Feb. 5, 2014), transcript available at http://www.morningstar.com/earnings/earnings-call-transcript.aspx?t=GMCR&pindex=2.
[21] *See* Part II, *infra*.
[22] *See* Stifel, Nicolaus & Co., *Updated Thoughts on Keurig 2.0 and F1Q14* at 3 (Jan. 30, 2014). ("Keurig's dominant brewer market share makes it unlikely any new entrant could gain meaningful share.")

The second important market to review is the K-Cup market. It covers only those portion packs that are compatible with Keurig's brewer technology. The portion packs used in other, competing, single-serve brewers are not compatible with Keurig's brewers. Instead of Keurig's K-Cup, other brewers require "pods" or "T-Discs." K-cups are likewise not compatible with non-Keurig brewers. The different types cannot be used interchangeably by consumers. Further, Keurig's exclusionary contracts with machinery makers keep competitors from easily substituting supply.[23]

The Supreme Court recognized, in *Kodak*, that a proprietary aftermarket can be a relevant market for antitrust purposes.[24] The limited supply substitutability of K-Cups and other, competing cartridges, and non-existent demand substitutability, make clear that this is exactly the sort of aftermarket that the Supreme Court was considering. Further evidence that the K-Cup market is an independent aftermarket is that, for internal competitive purposes, Keurig tracks only K-Cup market shares.[25] It is at this market that Keurig's anticompetitive practices are aimed. Until September 2012, Keurig owned patents allowed manufacture and marketing of K-Cups without competition.[26] After the patent expired, Keurig attempted to exclude competitors rather than to compete on product merits.

As with single-serve brewers, Keurig possesses power in the market for K-Cups. As of February 2014, Keurig controlled 86% of the K-Cup market, with 2013 revenues from K-Cups exceeding $3 billion[27]; this control was effected both through sales of Keurig's own brands and through exclusive contracts with major coffee producers. While the market is strongly differentiated among brands, most of the top brands demanded by consumers are either owned or licensed by Keurig. Coffee brands controlled by Keurig include Caribou Coffee, Cinnabon, Diedrich Coffee, Dunkin' Donuts, Eight O'Clock, Emeril's, Folgers Gourmet, Green Mountain Coffee, Green Mountain Naturals, Kahlua, Kirkland Signature, Lavazza, Lipton, Market Basket, Newman's Own

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[23] *See* section II.B.1, *infra.*

[24] *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451, 463 (1992) (holding that otherwise, "we would be forced to conclude that there can never be separate markets, for example, for cameras and film, computers and software, or automobiles and tires. That is an assumption we are unwilling to make."). *Kodak* has been undercut by some lower courts, and Court of Appeals remain divided. *Compare PSI v. Honeywell*, 104 F.3d 811 (6th Cir. 2007) and *Digital Equipment Corp. v. Uniq Digital Techs., Inc.*, 73 F.3d 756 (7th Cir. 1996) *with United Farmers Agents v. Farmers Ins. Exchange*, 89 F.3d 233 (5th Cir. 1996) and *Allen-Myland v. IBM*, 33 F.3d 194 (3rd Cir. 1994). None of the decisions question the basic premise of separate fore- and aftermarkets.

[25] *See* Brian Kelley, Keurig Green Mountain CEO & John Whoriskey, Keurig Green Mountain President, U.S. Sales and Marketing, Green Mountain Coffee Roasters Investor Day, "Our Future Opportunity" Slide Presentation at 27 (Sept. 10, 2013), *available at* http://investor.keuriggreenmountain.com/investorday.cfm (tracking portion pack unit market share).

[26] FISCAL 2013 ANNUAL REPORT, *supra* note 14, at 11.

[27] *Id.* at 32; Kelley, *supra* note 20, at Q&A Transcript 8.

Organics, Red Carpet, Revv, Seattle's Best, Starbucks, Timothy's, Tully's, Van Houtte, and Wolfgang Puck. [28]

Because of its control of many of the most demanded brands in the market, the absolute size of its market share, and very low price-elasticity of demand for coffee in the United States, Keurig is able to, and in fact does, exert monopoly power in the K-Cup market. Keurig sells its K-cups at prices between fifteen and twenty-five percent higher than competitors, and was able to profitably raise prices in 2011 by nine percent, a significant amount for a non-transitory period.[29]

B. KEURIG'S ANTICOMPETITIVE PRACTICES

In the hopes that consumers will decide on the basis of a lower initial cost, rather than making a life-cycle price calculation, Keurig sells brewers close to, at, or slightly below cost. As a result, only twenty-two percent of Keurig's revenues come from brewer sales, despite its industry dominance. Keurig then charges a fifty percent margin on K-Cup cartridges,[30] recouping brewer discounts in the aftermarket. When Keurig's patent on K-Cup technology expired in September 2012, Keurig sought to protect its market share by excluding competitors rather than accepting competition, with the accompanying risk of declining profits.

1. Keurig's Exclusive Contracts

Keurig has created and enforced exclusive and exclusionary contracts with suppliers, distributors, and retailers in order to cement control over the K-Cup aftermarket. These contracts reduce the availability of cheaper, competing coffee cartridges and raise the cost rivals must pay to create and distribute alternatives. Keurig's exclusive agreements are intended to deny its competitors access at every tier of the industry, from the machinery used to fabricate K-Cups to the components of a K-Cup; from the distribution of K-Cups to the stable of licensed brands. While these contracts may not entirely exclude competitors, they nonetheless occupy the cheapest, most efficient inputs in the industry. Keurig thus is able to raise the costs of production for rivals by forcing them to deal only with less efficient, inferior inputs.

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[28] FISCAL 2013 ANNUAL REPORT, *supra* note 14, at 7. Keurig also controls a large stable of leading tea brands: Bigelow, Celestial Seasonings, Kirkland Signature, Lipton, Market Basket, Newman's Own Organics, Orient Express, Snapple, Tazo, Tetley, Twinnings of London, and Wolfgang Puck. *Id.*

[29] FISCAL 2013 ANNUAL REPORT *supra* note 14, at 39.

[30] Rathke, *supra* note 14, at 7. Competing K-Cups are from 15% to 25% cheaper, even considering Keurig's cost-raising strategies discussed infra. The average K-Cup owner or licensed by Keurig costs $0.60, compared to a price of $0.45 for the average competing cartridge. Ross Colbert, Rabobank Group, Presentation to National Coffee Association 2013 Coffee Summit: Single Cup One Year Later 28 (Oct. 4, 2013).

While the exact contours of the agreements that Keurig signs with manufacturers are not publically available, multiple competitors report they are unable to buy the machines to make or assemble cups themselves. TreeHouse, a competitor who has brought a lawsuit against Keurig, alleges it sought to purchase new machines from a machine manufacturer, R.A. Jones, but was rebuffed; citing an agreement with Keurig, R.A. Jones would not issue a quote. The agreement allegedly prohibits the issuance of a quote on "any equipment that could be used to make 'anything that goes into a Keurig brewer.'"[31] R.A. Jones is permitted to sell the same equipment to non-competing firms, undermining any claim that the restrictions are necessary to ensure adequate supply to Keurig.[32] Keurig is alleged to have these exclusive agreements with all American equipment manufacturers, forcing would-be competitors to purchase equipment only from more expensive, foreign firms.[33] TreeHouse purportedly searched for, and was unable to find, a single supplier in the United States that was willing to sell it the machinery necessary to make compatible cartridges.[34]

Even when competitors are able to obtain the machinery, they may be unable to acquire components at a reasonable cost. A K-Cup compatible cartridge is composed of a cup, a lid, and a filter. Each piece must be either created in-house—a task far outside the business capabilities of most small coffee companies and hindered by Keurig's exclusive contracts with machinery makers—or it must be purchased from a supplier. Because each piece must be created specifically to be compatible with Keurig's system and cannot be purchased "off the shelf," there are only a few companies that provide the components at scale. Keurig is alleged to have signed exclusive agreements with the major manufacturers of each.[35]

In the cup market, there are three established vendors: Winpak, Phoenix, and Curwood. Each supplies Keurig's competitors with cups compatible with other brewers, such as Tassimo or Flavio. But each is prohibited, through exclusive agreement, from selling any cups compatible with Keurig brewers.[36] This forces competitors to purchase from companies with neither the technical expertise, nor the economies of scale, of the established cup manufacturers. Competitors thus have higher costs for producing competing K-Cups. Further, Winpak and a company called LMI

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[31] Complaint at 38 ¶180, TreeHouse Foods, Inc. v. Green Mountain Coffee Roasters, Inc. (S.D.N.Y. 2014) (No. 14 CV 0905).
[32] *Id.* at 38 ¶182.
[33] *Id.* at 39 ¶184.
[34] *See id.* at 39 ¶ 184.
[35] *Id.* at 39 ¶¶ 186–87.
[36] *Id.* at 39–42 ¶¶ 188–99.

Packaging supply almost all the foil lid components. They likewise refused to do business with competitors of Keurig,[37] also raising competitors' costs by forcing them to rely on smaller, newer, and less efficient entrants. The same pattern holds true for suppliers of compatible filters.[38]

At the distribution level, Keurig distributes through over 500 Keurig Authorized Dealers ("KADs").[39] The KADs include such major supply companies as Vistar, Aramark, United Stationers, and W.B. Mason.[40] To become a KAD, a distributor is required to sign a long-term agreement[41] that explicitly threatens distributors with the loss of Keurig's entire line of authorized and licensed products if a distributor agrees to carry any competing brand of cartridge. KADs agree not to

> directly, indirectly, or through an affiliate promote, market, sell or otherwise make available (a) any beverage base or portion pack product, other than Keurig Packs, that can be used in a Keurig Brewer, (b) any brewer other than a Keurig Brewer that is intended for use or usable with Keurig Packs.[42]

The firms under exclusive contract with Keurig collectively supply almost all of the out-of-the-home market. Threats to cut suppliers off from Keurig's entire stable of owned and licensed brands, many with high name recognition and consumer demand, will prevent distributors from carrying competing cartridges. This, in turn, requires sellers of competing cartridges to rely on whatever smaller, specialty distributors may remain in the market, or to sell directly to businesses, often a far less efficient practice.[43]

Finally, when a coffee company agrees to license with Keurig, it agrees "not to sell coffee . . . to any third party for the specific intended use . . . in the Keurig Brewing System; and (2) not to license any trademarks for use by third parties in connection with products intended for use with the Keurig Brewing System." By ensuring that high-demand licensed brands like Starbucks and Dunkin Donuts cannot also license with a competitor, Keurig raises barriers to entry by preventing any other competitor to sell a brand portfolio complete enough to lure distributors away from Keurig. To

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[37] *Id.* at 42–43 ¶¶ 200–04.
[38] *Id.* at 43 ¶¶ 205–06.
[39] Kelley & Whoriskey, *supra* note 25, at 24.
[40] Keurig responds to this claim by arguing that the Plaintiff has failed to establish what percent of distribution this represents, and so has not carried its burden. Memorandum of Law in Support of Defendant's Motion to Dismiss Complain Filed by Treehouse, Inc. at 13–14, In Re. Keurig Green Mountain Single-Serve Coffee Antitrust Litigation (S.D.N.Y. 2014) (No. 1:14-md-02542).
[41] KAD agreements appear to specify multi-year terms, though there may be exceptions. Note that even if the arrangements were at will, they could have anticompetitive results. *See United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 193 (3d Cir. 2005); *see also* Stephen Calkins, *Wrong Turns in Exclusive Dealing Law*, *in* HOW THE CHICAGO SCHOOL OVERSHOT THE MARK 156, 164–65 (Robert Pitofsky ed., 2008).
[42] Keurig Non-Exclusive Distribution Agreement "KAD Agreement," §3.2 (2013) (on file with author).
[43] *Dentsply*, 399 F.3d at 192–93.

reinforce the barriers raised by its portfolio, "Keurig has increased its pace in partnering with major brands after its patents on K-cups expired in September 2012."[44]

2. Keurig 2.0: Keurig's Predatory Innovation

Keurig has already started the rollout of its new brewer, the Keurig 2.0. The 2.0 brewer is set to replace the former Keurig line entirely. The 2.0 will be able to make carafes of coffee, like Keurig's existing Vue brewer. The brewer is not merely an upgrade that gives new customers additional coffee-making options though. It also uses digital rights management (DRM) technology in an attempt to ensure that competing cartridges cannot work in the Keurig machine. Simply put, "the [Keurig 2.0] will not brew unlicensed packs."[45] While smaller, but established, competitors may be able to reverse engineer to code, it could prove costly for potential new entrants.

It is beyond dispute that antitrust seeks to foster innovation. As such, the agencies and courts have been loath to condemn even marginal or contestable innovations. Even if competition is harmed by an innovation, it may contain the seeds of the "next big thing." Despite this, redesign can also be used for predatory purposes, with innovation serving as a mere pretext for exclusion.[46] Looking at Keurig's purported innovation of including DRM in its Keurig 2.0 brewer, it seems likely that is what is occurring.[47]

III. AFTERMARKETS AND MONOPOLISTS

The crux of the case against Keurig concerns its practices in its aftermarket: the "market for goods or services used together with durable equipment but purchased after the consumer has invested in the equipment."[48] Keurig sells durable brewers in the foremarket, which last for an extended period of time, and complements them with consumable individual-serving coffee pods in the aftermarket, which are exhausted after each use. It is necessary to use the aftermarket complement to get utility from the brewer, and it is only owners or operators of Keurig brewers who demand the aftermarket goods.

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[44] Trefis Team, *Keurig Green Mountain's Earnings Preview: Recent Distribution Deals To Boost Brewer and Portion Pack Sales*, FORBES.COM (Aug. 5, 2014) *available at* http://www.forbes.com/sites/greatspeculations/2014/08/05/keurig-green-mountains-earnings-preview-recent-distribution-deals-to-boost-brewer-and-portion-pack-sales/.

[45] Brian Kelley, Keurig Green Mountain CEO, Green Mountain Q4 2013 Earnings Call (Nov. 20, 2013), transcript available at http://www.morningstar.com/earnings/PrintTranscript.aspx?id=60483466.

[46] *E.g. United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001); *but see Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp.* 592 F.3d 991 (9th Cir. 2010) (finding even minimal innovation to be protected, despite anticompetitive outcomes)

[47] *See* section IV.B.2, *infra*.

[48] Severin Borenstein, et al., *Antitrust Policy in Aftermarkets*, 63 ANTITRUST L.J. 455, 455 (1995).

The economic feasibility of anticompetitive behavior by firms in proprietary aftermarkets has created serious disagreement among economists. The Supreme Court directly addressed the question in 1992 in *Eastman Kodak v. Image Technical Services*.[49] There the court, over the strident dissent of Justice Scalia, found that in practice foremarket firms can and do profitably exert anticompetitive pressure on aftermarkets. Despite Supreme Court endorsement, proponents of neoclassical economic theory, which the Court rejected in *Kodak*, were able to prevail at the summary judgment stage of every single lower court case alleging aftermarket monopolization for the next two decades.[50] This Part will examine where the theory fails, and will show why aftermarket monopolization should be viewed with skepticism by the agencies and by courts.

A. NEOCLASSICAL THEORY

The neoclassical Chicago School argument purports to show that aftermarket monopolization cannot be anticompetitive, because it cannot harm consumers. The theory holds that consumers are able to rationally assess the full lifetime cost of a durable good, in this case the coffee maker. That means they will be able to lay out, with precision, how much of the non-durable aftermarket good they will need, and consequently what the total price of the system will be for them. This calculation is called "lifecycle pricing." Because consumers are assumed to engage in lifecycle pricing, new or repeat customers will look at higher aftermarket prices, and demand lower equipment prices that precisely balance any increases. If they are not offered lower initial equipment prices, they will migrate to other, competing, foremarket products. Thus, any increase in cost in the aftermarket will be precisely offset by decreased costs in the foremarket. Further, existing customers will simply abandon the system and switch to another, competing system, as soon as the overcharges in the aftermarket exceed the switching cost.

This theory has been championed by such seminal antitrust scholars as Herbert Hovenkamp[51] and Richard Posner. [52] When Kodak made the same arguments in *Kodak*,[53] Justice Scalia provided a friendly ear. Joined by Justices O'Connor and Thomas, he wrote that

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[49] 504 U.S. 451 (1992).
[50] Douglas F. Broder et al., Kodak *Lives: New Jersey Jury Finds Antitrust Violation in the Aftermarkets for Maintenance of Avaya Products*, K&L GATES LEGAL INSIGHT (May 2014), *available at* http://www.klgates.com/files/Publication/689b0e28-8034-450f-a7da-226a04991356/Presentation/PublicationAttachment/6d355416-fc25-4ebb-8e5e-2e2873d53f52/Antitrust_Alert_05132014.pdf.
[51] *See* HOVENKAMP, THE ANTITRUST ENTERPRISE 98 (2006) ("a nondominant automobile manufacturer such as Chrysler cannot reap monopoly profits simply by charging $10,000 for replacement transmissions. The word would quickly get out and no one would buy Chryslers anymore.").

> [i]n the absence of interbrand power, a seller's predominant or monopoly share of its single-brand derivative markets does not connote the power to raise derivative market prices generally by reducing quantity. As Kodak . . . point[s] out, a rational consumer considering the purchase of Kodak equipment will inevitably factor into his purchasing decision the expected cost of aftermarket support. . . . If Kodak set generally supracompetitive prices for either spare parts or repair services without making an offsetting reduction in the price of its machines, rational consumers would simply turn to Kodak's competitors for photocopying and micrographic systems.[54]

This theory rests on three key assumptions. The first is that consumers can cheaply acquire the necessary information to engage in lifecycle pricing, and that they do in fact acquire and consider that information.[55] Second, though at least some of the non-durable aftermarket goods are usually purchased after the durable product—who buys a lifetime supply of coffee with their coffee maker?—the pricing assessment must be capable of being made as if the purchases were simultaneous.[56] Finally, the theory assumes strong competition in the foremarket with little brand differentiation, as consumers are posited to be capable of effectively switching to an equally appealing competitor if aftermarket prices rise too much.[57] For the theory to be predictive, all three assumptions must be true. Critics of this explanation, including the Supreme Court majority in *Kodak*, have identified several ways the assumptions can fail, leading to results that diverge from the predictions. Each of the critiques appears to apply to Keurig.

B. COMPETITIVE HARM IN AFTERMARKETS

Keurig has adopted several policies making price information in the K-Cup aftermarket more costly for potential consumers to obtain, thereby abrogating the lifecycle pricing assumptions. It has engaged in installed base opportunism by raising prices on K-Cups for existing consumers unexpectedly. And as described previously, Keurig enjoys a dominant position in the foremarket, limiting the ability of consumers to switch to a competitor. One set of theorists has determined that even under the assumptions of the neoclassical theory, anticompetitive outcomes are possible. Their

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52 RICHARD POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE (2d ed. 2001) ("The seller who exploits his 'monopoly' over replacement parts will find himself without many purchasers of his original equipment.").

53 *Kodak*, 504 U.S. at 465–66, 467 ("[T]he existence of market power in the service and parts markets absent power in the equipment market 'simply makes no economic sense.'").

54 *Id.* at 486 (Scalia, J., dissenting) (citations omitted).

55 Jeffrey K. MacKie–Mason & John Metzler, *Links Between Vertically Related Markets:* Kodak*, in* THE ANTITRUST REVOLUTION 386, 394 (John E. Kwoka, Jr. & Lawrence J. White, eds., 5th ed. 2008).

56 *Id.* at 395.

57 *Id.*.

research found that "the equilibrium price of the aftermarket good is independent of the degree of substitutability among equipment brands, even as the primary market becomes, in the limit, perfectly competitive."[58]

1. Chicago-School Neoclassical Theory Fails on Its Own Merits

Scholars have demonstrated that the theory even fails under its own assumptions. Rather than increases in aftermarket price being matched by discounts in the foremarket, Borenstein, MacKie–Mason, and Netz show that an aftermarket monopolist will generally price at a supracompetitive rate, and harm consumer welfare.[59] This is because a firm can earn some, if not all, monopoly profits by raising prices for locked in aftermarket customers, while cutting foremarket costs for new customers to balance the scales. New customers will benefit from a net balance between increased aftermarket costs and diminished foremarket prices, but existing customers who paid a higher price for the durable good can be gouged up to the cost of switching.[60] Increased prices are not the only harm that consumers suffer as a result of this policy. As prices in the aftermarket rise, customers purchase less of the aftermarket good; because utility is only derived from the durable good when used with the aftermarket complement—there is no benefit to owning a brewer if you are unwilling to make coffee in it—the utility of each brewer goes down when consumers purchase fewer pods. Thus even if consumers are paying no more for the system, they are realizing less value from their purchase.[61]

2. Lifecycle Pricing and Costly Information

A more far-reaching critique points out that each of the assumptions underlying the theory[62] fails when subjected to a critical lens.[63] "Acquiring . . . information is expensive."[64] If the cost of acquiring lifecycle prices is too high for consumers, or if the information is not available, consumers will rationally decide not to engage in lifecycle pricing. This is exacerbated by evidence that 43% of Keurig machines are purchased as gifts.[65] When a buyer intends to give the machine to someone else, only brewer cost is a concern; there is little or no incentive to acquire lifecycle cost information.

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[58] Borenstein, et al., *supra* note 48, at 463 n.22 (citing Severin Borenstein, Jeffrey MacKie-Mason & Janet Netz, *Market Power in Proprietary Aftermarkets* (unpublished manuscript 1994)).
[59] Borenstein, et al., *supra* note 48.
[60] *Id.* at 461.
[61] *Id.* at 462.
[62] The assumptions are (1) lifecycle pricing; (2) simultaneous price assessment; and (3) foremarket competition.
[63] Note that this section will initially discuss theoretical weaknesses of lifecycle pricing. Each weakness, however, appears to have been exploited by Keurig. *See* nn. 67–72, *infra*, and accompanying text.
[64] *Kodak*, 504 U.S. at 474.
[65] Morgan Stanley Research, *Single Serve Coffee: Consumers Speak Out* at 5 (Mar. 7, 2011).

If consumers are not willing to lifecycle price, but merely look at the cost of the upfront durable good, then firms will be able to sell the aftermarket good without providing any offsetting discount on the foremarket good. The Supreme Court in *Kodak* recognized these problems, opining that

> [l]ifecycle pricing of . . . durable equipment is difficult and costly. In order to arrive at an accurate price, a consumer must acquire a substantial amount of raw data and undertake sophisticated analysis. The necessary information would include data on price, quality, and availability of products needed to operate, upgrade, or enhance the initial equipment. . . . In addition, of course, in order to price accurately the equipment, a consumer would need initial purchase information such as prices, features, quality, and available warranties for different machinery with different capabilities, and residual value information such as the longevity of product use and its potential resale or trade-in value. . . . Much of this information is difficult—some of it impossible—to acquire at the time of purchase.[66]

There are several ways that firms can intentionally raise the costs of information gathering. One of the simplest ways that a foremarket producer can raise the price of lifecycle goods is to hide the information consumers may need to adequately price. This can be done by displaying price information only once a potential consumer logs in to a website, by not advertising foremarket and aftermarket prices in the same place, or by prohibiting distributors to advertise prices at all. When consumers are looking to buy the foremarket product, they may not be willing to walk to another part of the store or to scour every page on a website to find the cost of the consumable. If they have to log into the website, even for free, they be deterred by requirements to create a profile, or by having to remember their user name and password. The goal of the foremarket producer is, essentially, to ensure that potential customers never see the prices of each of the two goods in the same place.

A similar practice that can cause confusion and make lifecycle pricing more difficult is to bundle the initial foremarket good with a certain amount of the consumable at a single price. The firm hopes that, because a certain amount of consumable comes with the foremarket good, consumers will not take the time to seek out the cost of the consumable alone until after they have already made the investment and are looking to replenish the now-exhausted aftermarket good.[67]

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[66] *Id.*, 473 & n.20.

[67] *Cf.* Keurig 2.0 Introductory Offer, KEURIG.COM (Offering $20 off a Keurig 2.0 system bundled with two free boxes of K-Carafe packs) (last visited Oct. 20, 2014), *available at* http://www.keurig.com/2-0-intro-offer?CID=CARAFEBREW&sitepreference=full&cm_mmc=email-_-promo-_-OP1570+KBU+101714+K20Promo+3516+V2-_-Prosp.

If consumers are familiar with the product, producers can raise the cost of calculating lifecycle prices by only offering the good in unfamiliar sales units. This forces customers to convert from one unit to another, and given the aversion many people evince toward even simple math, this may dissuade some from taking the time to do the arithmetic. Further, this assumes that a customer notices that sales are in unfamiliar units; some may simply assume that the price is for the common sale volume, and erroneously price accordingly.

Both the consumable and the durable good may be highly differentiated. A consumer doing lifecycle research would have to look into the features of each durable product—for each foremarket brand and each intrabrand product—the reliability, the longevity, whether particularly desirable aftermarket brands can be purchased in a form compatible with each foremarket product, and of course the price, in order to make a comparison. They would also have to examine quality-controlled price in the differentiated aftermarket and possibly other non-price features such as availability in order to make a fully informed decision.

Notably, Keurig employs each of the above strategies to raise the cost of price information for potential customers, and so to insulate itself from possible competitive fallout from its inflated aftermarket prices. In its KAD Non-Exclusive Distribution Agreements, Keurig demands that distributors not

> (a) list, display or broadcast pricing for any Keurig Product or Keurig Pack (1) through or at any store . . . (2) via the Internet, (3) via any mass e-mails or fax blasts other than those directed solely at Distributor's customers currently purchasing Keurig Products from Distributor or (4) via any other mode of mass communication[68]

Furthermore, Keurig's agreements require that distributors abstain from "list[ing] or display[ing] any pricing for any Keurig Products or Keurig Packs, other than [Keurig Direct] Brewers, on any page or area of Distributor's . . . [Webs]ite that is available to the general public"[69] and shall "establish, maintain and utilize functionality . . . that requires all visitors to enter a customer specific and non-public password before gaining access to the Keurig Areas."[70] All of these practices serve to make it more difficult for consumers that wish to compare the full lifecycle cost of Keurig's brewers. Further, as mentioned, Keurig often sells its brewers bundled with an initial supply of Green Mountain K-Cups. While doing so ensures that consumers will not need to shop for cartridges when

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[68] Keurig Non-Exclusive Distribution Agreement "KAD Agreement," §2.1 (2013) (on file with author).
[69] *Id.* at §2.3.
[70] *Id.* at §2.3(x).

they buy the brewer, it has the side effect of reducing the likelihood that they might notice inordinately high K-Cup prices until after they have purchased the brewer and used up their first batch.[71]

To complicate matters, Keurig K-Cups are sold by cup count. Many consumers, before the advent of the single-serve brewing model, purchased their coffee by weight and so are unfamiliar with the unit sale price of K-Cups. It is not always obvious how much coffee is in each single-serve cup, making conversion to the familiar metric difficult. Conversely, few consumers are used to thinking of a pound of coffee by the number of discrete cups it will brew. Further, even if consumers were able to discover that a K-Cup contains only eight grams of coffee,[72] not all consumers can translate this into pounds. In 2012, the New York Times summed up the issue: "[i]t's hard to tell how much coffee costs, even if you know what you spent."[73]

Accurate consumer valuation is made even more difficult by differentiation in both the brewer and the coffee markets. Keurig offers several different options for brewers, each with different specifications. Competitors like Nespresso or Flavio also offer differentiated product lines. Each represents a different balance of price, quality, non-price features, and coffee brands available. Converting all this information, together with aftermarket prices, into a single point of "value" as required to lifecycle price accurately is difficult and time consuming, making it less likely consumers will actually engage in lifecycle pricing. Because the information necessary for effective lifecycle pricing can be costly or impossible to obtain,[74] Keurig is able to limit the discounts it would otherwise have to offer new customers on its brewers, while maintaining supracompetitive prices in the aftermarket.

3. Installed Base Opportunism

The second key assumption underlying lifecycle costing is that assessing aftermarket prices can be done simultaneously with purchase of the durable good. But this is not the case; for most of the product lifecycle, changes in prices are unforeseeable. At any given time, every customer who has already invested in the durable good, and does not need a replacement in the near future, is

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[71] *See, e.g.*, Keurig 2.0 Introductory Offer, *supra* note 67.
[72] Oliver Strand, *With Coffee, the Price of Individualism Can Be High*, N.Y. TIMES, Feb. 7, 2012, *available at* http://www.nytimes.com/2012/02/08/dining/single-serve-coffee-brewers-make-convenience-costly.html?_r=0.
[73] *Id.*
[74] *See Kodak*, 504 U.S. at 473 ("Much of this information is difficult—some of it impossible—to acquire at the time of purchase."); *cf.* Steven Salop and Joseph Stiglitz, *Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion*, 44 REV. OF ECON. STUD. 493, 493 (1977) ("Many people do not calculate unit-price in the supermarket." And if prices were raised, "[c]onsumers would be unwilling to gather the extra information needed to switch stores or brands.").

vulnerable to the manufacturer increasing price of the consumable good without warning; the higher the cost of switching to a competing system, the more vulnerable a customer is. This so-called "installed base opportunism" can occur even for consumers who successfully lifecycle price. "If the cost of switching [to a different foremarket product] is high, consumers who already have purchased the equipment, and are thus 'locked in,' will tolerate some level of service-price increases before changing equipment brands."[75] "[A] seller profitably could maintain supracompetitive prices in the aftermarket if the switching costs were high relative to the increase in service prices, and the number of locked-in customers were high relative to the number of new purchasers."[76] Switching "cost might be related to the depressed resale value of used . . . equipment, the transaction costs involved in researching, negotiating, and implementing the purchase of a rival's line, or the time and investment in retraining employees to use the rival's products. Aside from any economic loss, there might also be a psychological constraint involved in switching equipment, particularly if this involved selling a machine that still has a substantial useful life."[77]

Keurig has an extremely large installed base, estimated at over 35 million units.[78] And it has acquired an enormous and exclusive portfolio of many of the leading coffee brands in the United States, from Starbucks and Dunkin Donuts to Caribou and Wolfgang Puck for which customers may have brand loyalty.[79] Furthermore, the brewing units can sell for several hundred dollars, a substantial investment for many families. When Keurig takes advantage of its customers by increasing the prices of K-Cups, as it did in 2011,[80] high switching costs, both monetary and psychological, may keep consumers from abandoning the brand.

4. Foremarket Power

Lastly, the neoclassical theory relies on an absence of foremarket power, such that consumers are able to switch from one durable system to another when price rises. If consumers have no place to turn when aftermarket prices rise, switching may not be practicable. "When foremarkets are not competitive . . . a manufacturer can increase its profits further by monopolizing the aftermarket.[81] The market for single-serve coffee brewers is highly concentrated. Keurig is

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[75] *Kodak*, 504 U.S. at 476.
[76] *Id.* at 476.
[77] Warren S. Grimes, *Antitrust and the Systemic Bias Against Small Business: Kodak, Strategic Conduct, and Leverage Theory*, 52 CASE W. RES. L. REV. 231, 249 (2001).
[78] Fact Sheet, *supra* note 20.
[79] FISCAL 2013 ANNUAL REPORT, *supra* note 14, at 7.
[80] *Id.* At 39.
[81] MacKie–Mason & Metzler, *supra* note 55, at 397.

estimated to control 89% of the coffee brewer market by sales value.[82] Unless other single-serve brewer makers have substantial unused productive capacity, or unless switching resources into brewer fabrication has very low costs, in the short run consumers who don't like Keurig's prices have limited options.[83] Even in the long run, Keurig's extensive and exclusive coffee portfolio, including many of the most desirable brands, makes it difficult for other brewers to expand market share and compete in the foremarket.

C. LESSONS FROM MARKETING AND BEHAVIORAL ECONOMICS

If Keurig were to charge too much for K-Cups, the Chicago theory predicts that it would earn a reputation as a brand that gouges customers, and new purchasers would avoid the brand.[84] As with lifecycle pricing, there are problems with this explanation. It requires consumers to know both what prices they are paying, and what a fair price would be. The conversion issues between K-Cup prices and bulk coffee prices likely make this knowledge difficult for many to obtain.[85] Further, the brands of coffee that are licensed to Keurig are sold under the licensee's brand. Consumers may not recognize that Keurig sets all the prices; they may assume that observed prices are competitive, but high.[86] Because much of its portfolio is licensed, some backlash over price could deflect from Keurig to licensees themselves, limiting the damage Keurig faces.

The discussion in section II.B.1, *supra*, shows the difficulty of engaging in lifecycle pricing. Beyond that, behavioral economists have shown empirically that even when lifecycle price data is available, and the calculations are simple, consumers put far more weight on up-front cost than they do on usage costs, even assuming high discount rates.[87] This has proven true for consumers assessing appliance energy costs,[88] as well as for financial experts assessing mutual fund management

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[82] *Supra* note 19.
[83] It is no defense to argue that consumers could switch back to drip brewers if prices become too high. It is certainly true that they could switch, but that is the case with almost any monopolized product; as any price goes infinitely high, potential consumers will switch to increasingly distant substitutes. The concept of product markets limits how distant a substitute can be considered for antitrust purposes; in this case, drip brewers are not in the same product market. *See supra* section I.A.1.
[84] *See* HOVENKAMP, *supra* note 51, at 98 ("The word would quickly get out and no one would buy Chryslers anymore.").
[85] *See* section II.B.1, *supra*.
[86] Telephone Conversation with Gregory T. Gundlach, Distinguished Professor of Marketing, University of North Florida Coggin College of Business (Sept. 5, 2014); *see also* Kelly Spors, *How Keurig's New Brewing Systems Will Hurt Small Competitors*, AMERICANEXPRESS.COM (Mar. 4, 2014), *available at* https://www.americanexpress.com/us/small-business/openforum/articles/how-keurigs-new-brewing-systems-will-hurt-small-competitors/ (incorrectly stating that Starbucks and Dunkin' Donuts independently market private-label pods and undercut Keurig's prices).
[87] Jerry A. Hausman & Paul L. Joskow, *Evaluating the Costs and Benefits of Appliance Efficiency Standards*, 72 AM. ECON. REV. 220 (1982).
[88] *Id.*

fees.[89] Thus it is likely that even if consumers do calculate lifecycle costs when selecting a brewer, Keurig could profitably maintain anticompetitive price levels in the K-Cup market through loss-leader pricing in the foremarket. Consumers would respond to the comparatively low price in the foremarket more strongly than Chicago economists predict. In fact, this is exactly what Keurig seems to be doing. By charging supracompetitive aftermarket prices, Keurig would attract entry by competitors looking to share the spoils. If the firm wants to remain dominant, engaging in exclusionary practices becomes paramount.[90]

IV. Exclusion and Raising Rivals Costs

A dominant market position allows a firm to exclude competitors and foreclose competition. Keurig enjoys a dominant position in both the single-serve brewer and the K-Cup markets. It has used that position to sign dealers and distributors to long-term, exclusive contracts. To be sure, there are plausible competitive reasons that a supplier might sign such contracts. They provide parties with greater future certainty and can be a vehicle to prevent other manufacturers' free-riding on advertising and promotional efforts. As a result, exclusionary practices are often permitted in competitive markets. But pro-competitive outcomes are far less likely when companies that already have a dominant share market seek exclusivity. Recognizing this, Section 2 prohibitions against monopoly maintenance may constrain the actions of dominant firms while allowing the same acts by firms in competitive markets. Monopolists are not free to use all available means against their rivals, even if some of those means would be permissible for a non-monopolist.

"A violation of Section 2 consists of two elements: (1) the possession of monopoly power and (2) '. . . maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.'"[91] The Supreme Court has held that, under this standard, the antitrust laws protect competitors from the exclusionary tactics of dominant firms. Such firms cannot use their power "to destroy threatened competition."[92] They cannot "attempt[ ] to exclude rivals on some basis other than efficiency."[93] A dominant firm

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[89] Brad M. Barber et al., *Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows*, 78 J. OF BUSINESS 2095 (2005).
[90] Borenstein, et al., *supra* note 48, at 459–60.
[91] *United States v. Dentsply Int.'l, Inc.* 399 F.3d 181 (3d Cir. 2005).
[92] *Otter Tail Power Co. v. United States*, 410 U.S. 366, 377 (1973).
[93] *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 605 (1985) (citing ROBERT BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 138 (1978)).

violates the Sherman Act when it uses its "monopoly power 'to foreclose competition . . . or to destroy a competitor.'"[94]

Because Keurig is dominant in the K-Cup aftermarket, as indicated by its more than 85% market share,[95] Keurig's ability to engage in anticompetitive exclusionary practices that help it maintain its power should raise concerns. While Keurig may argue that exclusive contracts ensure availability of inputs, prevent competitors from free-riding on advertising, or avoid confusion, those same contracts also restrict the ability of competitors to reach consumers, and so restrict consumer choice. When the competing cartridges do reach consumers they are often more expensive than they would be without these exclusive contracts, as competitors' costs of production and distribution are higher. Price competition is less robust as a result. One legitimate justification that Keurig may have is in quality control and protection of brand goodwill—if inferior aftermarket products produce less acceptable outcomes to consumers, the Keurig brand may suffer as a result.[96] Despite the fact that quality control could prove a potent argument, it is not an argument Keurig has empasized. Even if their position changes though, quality control alone cannot be a justification for upholding the restrictions. The Supreme Court has held that it is imperative that customers be able "to make their own choice on . . . matters of quality."[97]

A. ECONOMICS OF EXCLUSION

The Sherman Act enjoins conduct that harms competition. When exclusive dealing prevents a sufficient number of a supplier's competitors from distributing their products to a sufficient number of customers without having to endure substantially higher costs, concerns about competition arise.[98] Indeed, at least one commentator has identified exclusion as the most pernicious

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[94] *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 482-83 (1992).
[95] Brian Kelley Q1 2014 Earnings Call, *supra* note 20, at Q&A Transcript 8; Keurig's market share provides circumstantial evidence of market power. *See United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956) (Cellophane); *United States v. Aluminum Co. of Am.*, 148 F.2d 416 (2d Cir. 1945) (Alcoa) (Learned Hand, J.). The direct evidence showing their ability to exercise market power and keep prices of K-Cups high provides confirmation. *Kodak*, 504 U.S. at 469 n.15; Andrew I. Gavil, *Exclusionary Distribution Strategies of Dominant Firms: Striking a Better Balance*, 72 ANTITRUST L.J. 3, 12 (2004).
[96] *See* Joseph P. Bauer, *Antitrust Implications of Aftermarkets*, 52 ANTITRUST BULL. 31, 40 (2007). But as Bauer notes, low quality competitors may have the opposite effect, and enhance the reputation of the durable goods producer. *Id.* at n.29, *quoting* Edward Iacobucci, *Tying As Quality Control: A Legal and Economic Analysis*, 32 J. LEGAL STUD. 435, 437–38 (2003) ("[U]sing inferior tied goods may not harm the tying good's reputation. . . . In some circumstances, purchasing inferior tied goods from independent suppliers may enhance the tied good's reputation and expected profits.")
[97] *Aspen Skiing*, 472 U.S. at 610.
[98] Steven C. Salop, Sharis A. Pozen, & John R. Seward, *The Appropriate Legal Standard and Sufficient Economic Evidence for Exclusive Dealing under Section 2: The FTC's* McWane *Case* 5 (Georgetown Law Faculty Publications, No. 365, Aug. 7, 2014).

of all anticompetitive practices, due to its ability to not only diminish price competition, but also to inhibit economic growth and to squelch nascent technological advance and innovation.[99] New entrants are unable to effectively challenge monopolists, despite the latter earning supra-competitive profits. While exclusionary tactics may not keep rivals from the market entirely, such tactics can ensure that potential rivals remain too small to effectively constrain a market behemoth and unable to expand profitably. These practices can reduce efficiency and consumer welfare even if competitors stay in business.[100] The barriers enable the monopolist to lengthen the period during which it can extract monopoly profits from consumers by reducing pressure to bring prices to competitive rates. Courts have responded by condemning exclusionary practices in markets ranging from credit cards[101] to Internet browsers,[102] and from false teeth[103] to media advertising.[104]

There are several ways that exclusive dealing may harm competition. It can raise the costs rivals must endure to bring products to market by requiring them to rely on far more expensive or less efficient methods of distribution or fabrication.[105] It may prevent upstart firms from entering markets entirely, limit the market share of entrants, or allow the dominant firm to extract rents.[106] When markets are characterized by economies of scale, this can mean that costs run significantly higher. As a result,

> the firm(s) instituting the exclusive dealing may gain the power to raise or maintain supra-competitive prices. If rivals have higher costs or are unable to expand efficiently as a result of the exclusives, a monopolist will face less pressure to reduce its own prices. As a result, unless there is sufficient competition from other non-excluded competitors, or significant cognizable efficiency benefits, competition and consumers likely will be harmed.[107]

Further, by excluding competitors, the monopolist restricts consumer choice, itself an antitrust harm. The existence of this second harm is what makes clear that competitors need not be

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[99] Jonathon B. Baker, *Exclusion as a Core Competition Concern*, 78 ANTITRUST L.J. 527, 559–60 (2013).
[100] Michael L. Katz, *Exclusive Dealing and Antitrust Exclusion:* U.S. v. Dentsply*, in* THE ANTITRUST REVOLUTION 488, 500 (John E. Kwoka, Jr. & Lawrence J. White, eds., 6th ed. 2014); Steven Salop and David Scheffman, *Cost-Raising Strategies*, 36 J. INDUS. ECON. 19 (1987).
[101] *United States v. Visa U.S.A.*, Inc., 344 F.3d 229 (2d Cir. 2003).
[102] *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).
[103] *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181 (3d Cir. 2005).
[104] *Lorain Journal Co. v. United States*, 342 U.S. 143 (1951).
[105] PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 1804a (3d ed. 2010); Salop, et al., *supra* note 98, at 6; Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209 (1986); Jonathan M. Jacobson, *Exclusive Dealing, "Foreclosure," and Consumer Harm*, 70 ANTITRUST L.J. 311, 347–64 (2002).
[106] Salop, et al., *supra* note 98, at 6; Katz, *supra* note 100, at 494.
[107] Salop, et al., *supra* note 98, at 6–7.

equally efficient. Functionally, foreclosure can take the form of input foreclosure or of customer foreclosure.

The Third Circuit Court of Appeals looked at a strikingly similar case in 2005, and held that the behavior of Dentsply International constituted illegal monopoly maintenance.[108] Dentsply was a dominant firm in the artificial tooth market, with about 75% of the market by revenue and 67% by unit sales.[109] The next closest competitor controlled 5% of the market, meaning that rivals were unlikely to have achieved the same economies of scale.[110] It is striking that Keurig's market share in the compatible cartridge market is almost identical. Likewise, in the market for artificial teeth, most of the sales went through dealers. While there was a possibility of selling teeth directly to laboratories or dentists, it was widely viewed as less efficient and less effective than dealing with dealers, and Dentsply was accused of discouraging dealers from selling any competing tooth lines, with the implicit threat to cut off any dealer who strayed. Keurig, too, is in a market where sales are often most efficiently accomplished through the use of distributors, be they supermarkets or office supply companies such as W.B. Mason. Keurig, however, has not merely relied on implicit threats to cut off "disloyal" dealers—its threats are explicit.[111] As a practical matter, in each case dealers do not have a meaningful business option of foregoing the entire portfolio of the dominant firm. Keurig's case is perhaps even more egregious, as it has scooped up exclusive licenses with many of the highest-demand coffees, preventing others from assembling a portfolio able to compete head-to-head. In each case, despite dealer dissatisfaction, none have proven disloyal to the monopolist and switched to sales of competing brands.[112]

That Keurig has not been able to entirely exclude its rivals from the market is not the test. *Dentsply* held that "it is not necessary that all competition be removed from the market. The test is not total foreclosure, but whether the challenged practices bar a substantial number of rivals or severely restrict the market's ambit."[113] Other Circuits have held likewise; the D.C. Circuit in its *Microsoft* ruling found that "the opportunities for other traders to enter into or remain in that market

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[108] *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181 (3d Cir. 2005).
[109] *Id.* at 184.
[110] *Id.*
[111] *See* Keurig Non-Exclusive Distribution Agreement "KAD Agreement," §3.2 (2013) (on file with author).
[112] Complaint at 38, 50 ¶¶ 183, 233, TreeHouse Foods, Inc. v. Green Mountain Coffee Roasters, Inc. (S.D.N.Y. 2014) (No. 14 CV 0905); *Dentsply*, 399 F.3d at 185.
[113] *Dentsply*, 399 F.3d at 191.

must be significantly limited," but not entirely eliminated.[114] Like Dentsply, Keurig's exclusionary behavior has served to significantly raise the costs of competition for its rivals, who are excluded from more efficient distribution methods. Despite failing to drive rivals from the market entirely, Keurig has nonetheless been able to keep prices at supracompetitive levels, limit output, and diminish consumer choice. Together, these would certainly seem to be enough to constitute monopoly maintenance in violation of Sherman Act Section 2.

1. Input Foreclosure

Input foreclosure occurs when a firm denies inputs to rivals or raises the costs of those inputs.[115] While there are some cases when exclusion of inputs provides efficiency benefits, the ultimate evaluation requires determination of whether exclusivity "harms competition by denying rival manufacturers effective, efficient distribution to significant numbers of potential customers," and "weakens the rival's ability to compete" or whether it instead "promotes efficient distribution by aligning manufacturer and dealer interests in ways that promote better offerings to consumers."[116]

One way input foreclosure can take place is by a dominant firm denying competitors access to needed equipment or parts through the usual channels. The rivals may then be forced to work with new, less efficient, market entrants who do not have expertise or the economies of scale, and therefore suffer from higher costs relative to suppliers servicing the dominant firm. There are valid business reasons to contract exclusively with upstream suppliers of raw materials and machinery. But those justifications have their limits; if a company exclusively contracts with far more suppliers than are necessary to meet its needs, or if the dominant firm permits sales of machinery to non-competitors, there is little chance of a pro-competitive outcome.

Keurig's exclusive contracts with equipment manufacturers seem to fall into this second category. R.A. Jones is allegedly permitted to sell its fabricating machines, so long as those machines do not go to companies producing competing coffee cartridges. Keurig's exclusive contracts with Winpak, Phoenix, Curwood, and LMI appear to foreclose far more than required to meet demand. Because exclusive contracts prevented Keurig's competitors from accessing input, the competing firms were forced to purchase at higher cost from abroad or to work with new entrants that lacked skill and expertise. It is not surprising, therefore, that the cost of fabricating a compatible portion pack is incrementally higher for Keurig's competitors than it is for Keurig.

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[114] *United States v. Microsoft Corp.*, 253 F.3d 34, 69 (D.C. Cir. 2001).
[115] Michael H. Riordan & Steven C. Salop, *Evaluating Vertical Mergers*, 63 Antitrust L.J. 513, (1995).
[116] Katz, *supra* note 100, at 493.

It can be helpful to also analyze distribution, the means necessary to bring a product to market.[117] Production firms are rarely expert in moving goods to customers, and instead rely on distributors;[118] distributors provide "substantially reduced distribution costs" and "cheap, high volume supply lines."[119] Though in theory producers could sell directly to customers, economically it may prove prohibitive.[120] It is not necessary that all distributors be foreclosed for this to raise costs. If rivals are limited to only the residual capacity of large distributors, the rival may have to split its sales in such a way that it is unable to achieve bulk discounts. Similarly, if distribution is characterized by economies of scale, the rival manufacturers will face higher distribution costs when they are restricted to smaller distributors.[121] At least one court has recognized this dynamic—in the distribution of software—finding that "although Microsoft did not bar its rivals from all means of distribution, it did bar them from the cost-efficient ones.[122]

Keurig has exclusive agreements with many major distributors, over 500 in total.[123] While these agreements are alleged to run multiple years, they are capable of constraining competition regardless of the term. Keurig has already used its market power to amass a large and exclusive portfolio of high-demand coffee brands, notably including Starbucks. When a dealer is faced with an all-or-nothing choice between the market leader and a small competitor, the dealer will likely accept the monumental portfolio of brands for fear that if it does not, rivals will gobble up sales, even if the contract is not long-term.[124] This may occur even when the distributor recognizes that future upstream competition may be limited.[125]

As a result, emerging and nascent competitors are unlikely to be able to lure distributors away from Keurig. Richard Posner has examined a similar dynamic in the fashion industry, when top brands sought to eliminate upstarts. He found that entry was effectively barred by the barriers

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117 *See* Krattenmaker & Salop, *supra* note 105.
118 *See United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 196 (3d Cir. 2005); *cf.* BERNARD ASCHER, GLOBAL BEER, THE ROAD TO MONOPOLY 29–30 (2012), *available at* http://www.antitrustinstitute.org/sites/default/files/Global%20Beer%20Road%20to%20Monopoly_0.pdf.
119 *LePage's, Inc. v. 3M*, 324 F.3d 141, 160 n.14 (3d. Cir. 2003).
120 *Dentsply*, 399 F.3d at 189 ("The reality is that over a period of years, because of Dentsply's domination of dealers, direct sales have not been a practical alternative for most manufacturers. It has not been so much the competitors' less than enthusiastic efforts at competition that produced paltry results, as it is the blocking of access to the key dealers"); *cf.* Tess Stynes, *Keurig Green Mountain Profit Up 33%*, WALL ST. J. (Aug. 6, 2014), *available at* http://online.wsj.com/articles/keurig-green-mountain-profit-up-33-1407357502..
121 *See* Katz, *supra* note 100, at 501.
122 *United States v. Microsoft Corp.*, 253 F.3d 34, 64 (D.C. Cir. 2001).
123 Kelley & Whoriskey, *supra* note 25.
124 AREEDA & HOVENKAMP, *supra* note 105, at ¶ 1802e3; Katz, *supra* note 100, at 500.
125 Joshua S. Gans, Intel *and Blocking Practices, in* THE ANTITRUST REVOLUTION 413, 418 (John E. Kwoka, Jr. & Lawrence J. White, eds., 6th ed. 2014).

portfolios create: "[c]ompeting manufacturers of dress patterns could, in principle, have created their own retail outlets, but who would shop there if the most popular brand could not be found? Competing manufacturers would have had to create a line as long and as popular as Standard Fashion's line, and that may have been very costly to do."[126]

Notably, to effectively exclude and raise costs, Keurig does not have to exclusively contract with *every* distributor. Often distribution, like production, will benefit from economies of scale and scope. If Keurig is merely able to ensure that its rivals are limited to a choice between smaller distributors of limited efficiency and less efficient, less effective direct sales, competitors costs will be higher than Keurig's for the same service, raising marginal cost and retarding rivals' ability to compete on price.[127]

2. Customer Foreclosure

Customer foreclosure occurs when dominant firms use exclusionary arrangements to ensure that competitors have access to too few customers to cover costs and remain viable.[128] While input foreclosure results in increased costs for a competitor, customer foreclosure is designed to diminish the revenues that a competitor is able to realize. It is important to note that "[i]nput and customer foreclosure can . . . occur simultaneously. . . . When this occurs, their impacts can be mutually reinforcing."[129]

Customer foreclosure is ably demonstrated by *Lorain Journal Co. v. United States.*[130] In that case a dominant local newspaper, which reached over 99% of families in the city of Lorain, Ohio, sold distribution services to advertisers.[131] It had enjoyed a monopoly over daily advertising distribution for the preceding fifteen years.[132] However, in 1948, a radio station opened to serve the community. A substantial number of advertisers wanted to advertise on the radio as well as in print,[133] but the Lorain Journal would have none of it. The Journal adopted a practice of refusing to carry any advertising for companies that chose to advertise on the radio station. Because the newspaper advertisements were so widely seen, they were viewed by advertisers as indispensable. As a result, almost no advertisers were willing to switch and lose all newspaper advertising. This prevented the

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[126] Richard A. Posner, *Vertical Restraints and Antitrust Policy*, 72 U. CHI. L. REV. 229, 229-30 (2005).
[127] Salop & Scheffman, *supra* note 100; *Dentsply*, 399 F.3d at 191.
[128] Salop, et al., *supra* note 98, at 12.
[129] *Id.* at 14.
[130] 342 U.S. 143 (1951).
[131] *Lorain Journal Co. v. United States.*, 342 U.S. 143, 146 (1951).
[132] *Id.* at 147.
[133] *Id.* at 147–48.

radio from selling enough advertising space to be economically viable.[134] The Court held that this customer foreclosure scheme was an illegal attempt to monopolize in violation of Section 2.[135]

This is also the case with Keurig. Distributors are necessary for K-Cup and compatible cartridge manufacturers to bring their goods to market efficiently. By entering exclusive arrangements with many distributors[136] Keurig has made it nigh impossible for competitors to reach certain customers. By restricting the customer base that competitors could otherwise service, Keurig has insulated itself from competition. If these companies remain viable, their output and ability to grow and achieve economies of scale will likely be stunted, making them less of a threat or putting them out of business entirely. In either case, Keurig's incentive to lower prices beyond monopoly levels is reduced.

3. Foreclosed Businesses Need Not Be Equally Efficient

Some commentators have argued that the only actionable foreclosure is against equally efficient competitors, and that restraints that exclude less-efficient competitors should not be condemned.[137] This standard is highly problematic, as courts and much literature have recognized. In industries marked by economies of scale, a new entrant would almost by definition not have the same efficiencies as an established firm with market power. The D.C. Circuit recognized this exact problem in *Microsoft*, opining "it would be inimical to the purpose of the Sherman Act to allow monopolists free reign to squash nascent, albeit unproven, competitors at will."[138]

This failure to protect emerging competition and smaller firms can harm consumers in both the short and long term. Even a less efficient competitor can promote near-term price competition. It can "stimulate competition and lower prices if an incumbent dominant firm is charging monopoly prices."[139] The threat of actual or potential competition from a less efficient rival can constrain a dominant firm's pricing and motivate the incumbent to be more innovative. In the face of competition, it may feel pressured to lower prices below the monopoly level either to deter entry or

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[134] *Id.* at 149–50.
[135] *Id.* at 152.
[136] Distributors include coffee shops such as Dunkin Donuts or Starbucks, more general retailers like Safeway or Target, and direct office supply companies including W.B. Mason.
[137] *See* Dissenting Statement of Commissioner Joshua D. Wright, In the Matter of McWane, Inc., Docket No. 9351 (Feb. 6, 2014), *available at* http://www.ftc.gov/system/files/documents/public_statements/202211/140206mcwanestatement.pdf.
[138] *United States v. Microsoft Corp.*, 253 F.3d 34, 79 (D.C. Cir. 2001)
[139] Gavil, *supra* note 95, at 59.

to prevent the newcomer from capturing market share.[140] Often, small newcomers may be the most innovative firms in a market. At least one commentator has noted that, far from permitting new entrants to be pummeled, "an innovation-centered antitrust policy must make scrutiny of exclusion of innovators its primary concern and a focus of resources."[141]

Even if these benefits do not accrue immediately, consumers may still benefit eventually. Entrants can produce new and innovative products that compete with the monopolist,[142] or through competition on service, quality, or choice they may eventually erode the market power of the existing firm. While the market-leading firm may not be price constrained on day one, small piecemeal entry may eventually lead to robust competition.[143]

Dominant firms have frequently sought to exclude innovative entrants that threatened their monopoly power. Some of the leading cases in the history of antitrust law have involved monopolists that attempted to suppress emerging technologies through anticompetitive means.[144] "If the antitrust laws are rendered impotent to insulate such firms at their most vulnerable time—when they are the obvious targets of complex strategies that have negative or, at best, ambiguous consumer welfare consequences—we risk the loss of the long-term benefits of the process of competition."[145] "Obviously, a monopolist should not be rewarded for eliminating competition in its incipiency."[146] If monopolists strike early, and the agencies and courts fail to intervene, "[l]ater remedies will likely prove inadequate to restore the competition that may have been lost."[147] In this light, it is unimportant that Keurig may have achieved more efficiencies of scale than rivals who only entered the market in 2012 upon the expiration of the K-Cup patent. That absent anticompetitive exclusionary practices, rivals may eventually provide a check to Keurig's pricing and expand consumer choices is enough for the law to protect potential rivals from exclusion.

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140 Steven C. Salop, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard*, 73 ANTITRUST L.J. 311, 328 (2006).
141 Tim Wu, *Taking Innovation Seriously: Antitrust Enforcement if Innovation Mattered Most*, 78 ANTITRUST L.J. 313 (2012).
142 Baker, *supra* note 99, at 559–60.
143 *See* POSNER, *supra* note 52, at 251–53; Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 254, 321 (2003).
144 *See, e.g.*, *Lorain Journal*, 342 U.S. 143 (discussing how dominant local newspaper sought to cripple new radio station by depriving it of advertising revenue); *MCI Communications Corp. v. American Tel. & Tel. Co.*, 708 F.2d 1081, 1132–33 (affirming jury's finding that AT&T refused to grant local network access to MCI as a means of excluding MCI—and its new microwave communication technology—from long-distance telephone market); *Microsoft*, 253 F.3d at 59–74 (reviewing Microsoft's multi-pronged campaign to suppress growth of middleware applications that could undermine its operating system monopoly).
145 Gavil, *supra* note 95, at 81.
146 *Sunbeam Television Corp. v. Nielsen Media Research, Inc.*, 763 F. Supp. 2d 1341, 1356 (S.D. Fla 2011).
147 Gavil, *supra* note 95, at 80.

V. TYING AND PREDATORY REDESIGN

Tying is the situation of selling one good, termed the tying good, only if purchasers also commit to purchase a second, tied good. The tie can be at the time of sale or through an exclusive contract forbidding subsequent purchase from competing sellers in the tied-good market. Ties can also be technological, using restrictive technology that can reject competing products. Tying has been, at least nominally, a per se violation of the Sherman Act for almost a century, dating back to the Supreme Court decisions in *United Shoe Machinery* in 1922[148] and *IBM* in 1936.[149] The per se rule was eventually diluted, in *Northern Pacific Railway*, with the addition of a requirement of "sufficient economic power [in the tying product market] to impose an appreciable restraint on free competition in the tied product.[150]

> [T]he essential characteristic of an invalid tying arrangement lies in the seller's exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms. When such 'forcing' is present, competition on the merits in the market for the tied item is restrained and the Sherman Act is violated.[151]

There are four elements to a per se tying violation: (1) the tying and tied goods are two separate products; (2) the defendant has market power in the tying product market; (3) the defendant affords consumers no choice but to purchase the tied product from it; and (4) the tying arrangement forecloses a substantial volume of commerce.[152] The reasons set forth are almost always due to concerns about monopoly leveraging—expanding a monopoly in one market into a second market.[153] Justice Scalia described the harm thusly: "[w]hen the defendant has genuine "market power" in the tying product—the power to raise price by reducing output—the tie potentially enables him to extend that power into a second distinct market, enhancing barriers to entry in

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[148] *United Shoe Machinery Corp. v. United States*, 258 U.S. 451 (1922).

[149] *International Business Machines v. United States*, 298 U.S. 131 (1936).

[150] *Northern Pacific Ry. v. United States*, 356 U.S. 1, 6 (1958); *see also Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 17 (1984) ("the likelihood that market power exists and is being used to restrain competition in a separate market is enough to make per se condemnation appropriate."); *Illinois Tool Works, Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 46 (2006) ("in all cases involving a tying arrangement, the plaintiff must prove that the defendant has market power in the tying product.").

[151] *Jefferson Parish*, 466 U.S. at 12.

[152] *See Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 461–62 (1992); *Jefferson Parish*, 466 U.S. at 12–18; *Microsoft*, 253 F.3d at 85.

[153] *Jefferson Parish*, 466 U.S. 2; AREEDA & HOVENKAMP, *supra* note 105, at ¶ 1701b.

each."[154] A second concern stems from the possibility of a monopolist extracting additional monopoly profits from consumers through metering price discrimination.[155] In either case, while the practices may be permissible when undertaken in a competitive market, monopolists engaging in such conduct must be given special attention.[156]

Keurig recently announced that it would introduce a new brewer, Keurig 2.0, to replace its current lineup. The Keurig 2.0 contains technology to scan proprietary ink in K-Cups and rejects any non-licensed cartridges.[157] This represents a form of technological tying because it effectively requires brewer customers to purchase their coffee pods exclusively from Keurig. The company, as discussed earlier, has market power in the single-serve brewer market. As a result, competitors have raised serious concerns about the ability of Keurig to leverage its brewer-market power into further power in the K-Cup market and to extract consumer surplus by metering.

A. TYING

1. Leveraging

Tying was traditionally condemned to prevent so-called monopoly leverage. The theory predicted that a seller with market power in a tying product can force consumers to purchase a product in the tied market if they wanted the tying product at all, thereby extending, or leveraging, its market power into a second market and increasing anticompetitive gains.[158] The traditional theory posited that the firm could thus collect monopoly rents in both markets, rather than in only one.[159]

This rationale has been roundly criticized. Ward S. Bowman led Chicago School theorists in arguing that when two goods are complementary, there is only one monopoly profit to earn; a monopolist cannot increase overall return by use of a tie.[160] Once a firm is extracting all possible monopoly profits in the tying market, consumers, who are presumed to effectively engage in lifecycle pricing, reject any increase in total price. Rather than pay even more than the foremarket

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[154] 504 U.S. 487 (Scalia, J., dissenting).
[155] AREEDA & HOVENKAMP, *supra* note 105, at ¶ 1711b3.
[156] *Kodak*, 504 U.S. at 488 (Scalia, J. dissenting) ("[b]ehavior that might otherwise not be of concern to the antitrust laws—or that might even be viewed as procompetitive—can take on exclusionary connotations when practiced by a monopolist.").
[157] Vanessa Wong, *With Keurig 2.0, Green Mountain Wants Its Monopoly Back*, BUSINESS WEEK (March 11, 2014), *available at* http://www.businessweek.com/articles/2014-03-11/green-mountain-releases-keurig-2-dot-0-to-help-restore-its-monopoly; *see also* Kelley, Q4 2013 Earnings Call, *supra* note 45.
[158] *Jefferson Parish*, 466 U.S. at 13–14.
[159] Joseph J. Spengler, *Vertical Integration and Antitrust Policy* 58 J. POL. ECON. 347 (1950).
[160] Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957); *see also* RICHARD POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 173 (1978).

monopoly price, consumers switch to more distant substitutes or forego the product entirely.[161] Thus, the theory predicts, there is no competitive harm from tying.[162]

There are several problems with this argument.[163] Keurig employs a loss-leader business model which could enable price discrimination between customers in the K-Cup market. Despite having power in the single-serve brewer market, Keurig sells machines near or at cost to consumers, while extracting monopoly profits in the tied K-Cup market. The tying here ensures that consumers who benefitted from Keurig's prices in the brewer market actually pay the piper in the complementary market. While the Chicago School predicts that consumers will rationally obtain full information and effectively engage in lifecycle pricing of goods, empirical studies refute this. In practice, consumers put far more weight on up-front prices.[164] The low up-front cost allows Keurig to continue collecting monopoly profits in the tied market without losing market share in the tying market, despite economic predictions that consumers drift to other foremarket options when monopolistic tying takes place.

On a more fundamental level, the Sherman and Clayton Acts are not merely concerned with consumer prices. They also condemn anticompetitive restrictions of consumer choice; this concern about choice been recognized by spanning the ideological spectrum from Robert Bork[165] to Robert Lande,[166] as well as by the Supreme Court.[167] Tying brewers to coffee that is either made by or licensed by Keurig prevents consumers from choosing other, competing coffee brands that they

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[161] *E.g.* Carl Shapiro & David J. Teece, *Systems Competition and Aftermarkets: An Economic Analysis of* Kodak, 39 ANTITRUST BULL. 135, 141 (1994).
[162] The model assumes that consumers effectively engage in lifecycle pricing. For criticism of this assumption, *see* section II.B.1, *supra*.
[163] *E.g.* Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COLUM. L. REV. 515 (1985); Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397, 400 (2009) (recommending the prohibition against tying, because "antitrust economics actually shows that the single monopoly profit theory is valid only when . . . [b]uyers do not use varying amounts of the tied product with the tying product.")
[164] Lorenzo Coppi, *Aftermarket Monopolization: The Emerging Consensus in Economics*, 52 ANTITRUST BULL. 53, 57–58 (2007); *see also* Tanjim Hossain & John Morgan, *… Plus Shipping and Handling: Revenue (Non) Equivalence in Field Experiments on eBay*, 6 ADVANCES IN ECON. ANALYSIS & POL'Y (2006).
[165] ROBERT BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 61 (1978) ("When we talk of the desirability of competition we ordinarily have in mind such things as low prices, innovation, choice among differing products—all things we think of as being good for consumers.").
[166] Robert Lande, *Consumer Choice as the Ultimate Goal of Antitrust*, 62 U. PITT. L. REV. 503 (2001); Robert Lande, *A Traditional and Textual Analysis of the Goals of Antitrust: Efficiency, Preventing Theft From Consumers, and Consumer Choice*, 81 FORDHAM L. REV. 2349 (2013).
[167] *FTC v. Indiana Fed'n of Dentists,* 476 U.S. 447, 459 (1986) (a refusal to compete on service, "no less than a refusal to compete with respect to the price term . . ., impairs the ability of the market to advance social welfare"); *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877, 896-97 (2007) ("The manufacturer strives to improve its product quality or to promote its brand because it believes this conduct will lead to increased demand.); *National Society of Professional Engineers v. United States*, 435 U.S. 679, 695 (1978) ("all elements of a bargain—quality, service . . . and durability—and not just the immediate cost, are favorably affected by the free opportunity to select among alternative offers.").

consider higher quality or whose taste they prefer. It also inhibits competition on other, non-price concerns, such as biodegradability of K-Cups, or coffees that are natural, organic, or fair trade. Even accepting that no additional monopoly revenues can be extracted from consumers, tying's effects on consumer choice may still represent harm to competition.

Theory claiming that double monopolization cannot raise profits fails to take the dynamic nature of markets adequately into account.[168] But Bowman assumes that the monopolist is operating at a profit-maximizing price, which is not necessarily true. Fear of inducing more aggressive competition from less close substitutes, such as other brewers or traditional drip coffee makers, and thereby losing its monopoly position more quickly than it otherwise might, could constrain Keurig's pricing decisions and prevent them from exercising their monopoly power to the maximum extent. On this theory, extension via tying could enable Keurig to cement its control enough to more fully exercise its monopoly power, and increase its profits with less fear of long-run erosion of its position.

Even assuming dominant firms cannot necessarily increase current monopoly profits through tying, they can use tying to further cement their original market power[169] or to increase market share in the tied goods market.[170] Tying may have a similar effect on competitors as exclusive contracting: an increase in cost for rivals in the tied market, making continued operation unprofitable and unsustainable.[171] Absent effective competition in the tied market, prices may rise and variety inevitably falls.[172] This phenomenon has been noted and condemned by the Supreme Court, which held that

> the law draws a distinction between the exploitation of market power by merely enhancing the price of the tying product, on the one hand, and by attempting to impose restraints on competition in the market for a tied product, on the other. When the seller's power is just used to maximize its return in the tying product market, where presumably its product enjoys some justifiable advantage over its competitors, the competitive ideal of the Sherman Act is not necessarily compromised. But if that power is used to impair competition on the merits in another market, a potentially inferior product may be insulated from competitive

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168 Elhauge, *supra* note 163, at 400; Kaplow, *supra* note 163, at 529 n.56, 530.
169 Dennis Carlton and Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. OF ECON. 194, 196 (2002); Elhauge, *supra* note 163, at 417–19; Jean Tirole, *An Analysis of Tying Cases: A Primer*, 1 COMPETITION POL'Y. INT'L. 1, 18–19 (2005); *see United States v. Microsoft Corp.*, 253 F.3d 34, 71 (D.C. Cir 2001).
170 Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837, 838–41 (1990); Elhauge, *supra* note 163, at 414–16; Tirole, *supra* note 169, at 18.
171 Whinston, *supra* note 170, at 838; Barry Nalebuff, *Unfit to be Tied: An Analysis of* Trident v. Independent Ink*, in* THE ANTITRUST REVOLUTION 458, 474 (John E. Kwoka, Jr. & Lawrence J. White, eds., 6th ed. 2014).
172 Whinston, *supra* note 170, at 839.

> pressures. This impairment could either harm existing competitors or create barriers to entry of new competitors in the market for the tied product.[173]

To the extent that other competitors exit the tied good market, reducing available untied supply, tying may also hinder entry in the tying market.[174] Tying thus may permit a dominant firm to retain control in the tying market for longer before competitive entry occurs, leading to increased extraction of monopoly profits and aggregate consumer loss.[175] This is the case even if no system-wide price increase takes place.

2. Metering

Ties between complementary goods, such as single-serve K-Cup-compatible brewers and K-Cups, may also "increase the social costs of market power by facilitating price discrimination"[176] via metering.[177] Metering occurs when a producer charges based on the use of a product. This price can either be direct, through some sort of internal counter, or indirect. An indirect fee is factored into the price of a non-durable complementary product, in this case the K-Cup. Thus consumers who use the brewer more, and presumably value it more highly, will pay more to Keurig over the lifetime of the coffee maker than consumers who use it less; *both will buy the cheap initial product*.[178] In order for a tie to be successfully used to facilitate indirect metering, three conditions must exist: (1) the tying and the tied products must be essential complements, such that neither provides value absent the other; (2) the tied good must be non-durable so that value of the tying good, measured through intensity of use, is directly related to frequency of purchases of the tied product; (3) the tied good is sold at an elevated price, driving higher profits through higher-volume consumers. When those conditions are met, a firm with market power could sell the tying good well below marginal cost, or even give it away, and still increase profits.[179]

By charging the monopoly price on only the necessary consumable accompaniment, the monopolist can extract a surplus from each that is calibrated to how much consumers value the product, and thereby increase profits.[180] All sales in the tied product are at the same price, so there is no opportunity for lower-value customers to engage in arbitrage. Because monopoly profits are

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[173] *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 14–15 (1984) (internal citations omitted).
[174] Nalebuff, *supra* note 171, at 474.
[175] HOVENKAMP, *supra* note 51, at 152.
[176] *Jefferson Parish* 466 U.S. at 14–15 (internal citations omitted).
[177] Nalebuff, *supra* note 171, at 458.
[178] *See* section II.C, *supra*; Coppi, *supra* note 164.
[179] This is especially true once one takes into account the empirically established propensity for consumers to put more weight on up-front costs. *See* Coppi, *supra* note 164, at 57–58.
[180] Nalebuff, *supra* note 171, at 462.

being extracted from the entire system, the tying producer must have market power in the tying market; this is likely the case even though the monopoly profits come in the tied market, and the tying product is being sold very cheaply. Without market power in the tying market, other producers would come in, offer a slightly more expensive tying good, and a competitively priced non-durable tied good, thereby stealing the highest-value users.[181] Contrapostitively, the ability to successfully use tying to meter prices is a strong indicator of market power in the tying market. Through metering, a monopolist like Keurig can increase its aggregate level of monopoly profits by transferring all the consumer surplus to itself.[182]

Critics of this theory's application to Keurig may point out that Keurig 2.0 is a new product, and so Keurig has no power in the foremarket, and no installed base to exploit; this strategy cannot, therefore, be successful. Any welfare-reducing metering attempted by Keurig would simply result in consumers switching to other brewers, or new entrants entering the market. This is unpersuasive; metering theory overlaps with Keurig's exclusionary practices, described in Part II and section IV.A.1, *supra*, and the effects of strong differentiation in the tied market. Keurig has a large stable of coffee brands under exclusive license, including many of the most desirable brands. The company charges an above market cost for the coffee and brewer system, evidence of continuing market power.[183] The enormous market share Keurig currently enjoys in the brewer market, over eighty-five percent, should also give rise to a presumption of market power.[184]

Critics may further argue that there exist situations in which tied contracts can have pro-competitive benefits. Keurig has claimed that the reason the technological tie is necessary is to "ensure the system delivers on the promise of excellent quality beverages, produced simply and consistently every brew."[185] In theory, concern about poor quality wrongfully being attributed to Keurig provides a conceivable reason to tie. On closer inspection, however, this explanation cannot hold water (or coffee) in this case. If the quality increase from using Keurig's K-Cups is significant

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[181] While behavioral economics often rejects this lifecycle-pricing dynamic, there is reason to believe that the highest value users are more likely than most to make these calculations. *Id.*
[182] This pricing scheme represents a wealth transfer, which may be the primary prohibition of the antitrust laws. *See* Robert H. Lande, *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*, 34 HASTINGS L. J. 65 (1982). There may also be a diminishment of consumer choice, which is likewise condemned by the antitrust laws. *See* Lande, *Consumer Choice*, *supra* note 166.
[183] AREEDA & HOVENKAMP, *supra* note 105, at ¶ 1769c.
[184] *See, e.g.*, *id.* at ¶ 383 (recommending a presumption of market power at 70-75% market share); *see also DG Competition Discussion Paper on the Application of Article 82 of the Treaty to Exclusionary Abuses* ¶31 (2005) ("It is very likely that very high market[] shares, which have been held for some time, indicate a dominant position. This would be the case where an undertaking holds 50% or more of the market, provided that rivals hold a much smaller share of the market")
[185] Kelley, Q4 2013 Earnings Call, *supra* note 45.

enough that it justifies a higher price, the tying is not necessary. Consumers would flock to the higher-quality complement-Cups without being forced to do so. To the extent that consumers would instead purchase competing products that may not "promise excellent quality beverages," the market will have shown that consumers do not value any increase in quality enough to justify the higher price. It may be true, as Keurig argues, that poor quality in non-endorsed pods may affect the reputation of the brewer negatively. However, there are methods other than tying, including marketing strategies to highlight Keurig's endorsement, that can minimize consumer confusion and while remaining less injurious to competition. Thus, even accepting Keurig's theory of improved quality does not necessitate accepting its enforced tying arrangement.

While consumers may be hesitant to purchase Keurig 2.0 brewers upon finding out that their favorite brands will not brew, and instead look for other brewers with decent pods available, they may not be able to effectively shift. Keurig's dominance of the market for brewers likely has left competing sellers supply-constrained. Consumers may not be able to shift, even if they want to, and many may instead stick with the Keurig 2.0. Because of the pernicious harms stemming from tying when engaged in by a monopolist, it is important that the enforcement agencies combat these practices through injunctions against implementing the technological tie.[186]

B. Innovation and Predatory Redesign

Despite competitive concerns with tying, a court may be solicitous of claims that the Keurig 2.0 is immune from suit on the grounds that it represents an innovation; innovation is such a critical part of competition that "[c]laims of 'anticompetitive innovation'" can "sound oxymoronic."[187] Various commentators have argued that because courts cannot meaningfully judge the value of an innovation, which only the market can effectively do, any innovation should be shielded from all antitrust oversight. In other words, any innovation should be per se legal. Though no court has yet been so permissive,[188] the circuits are not in harmony on the issue.

It makes sense that courts should in many, if not in most, cases defer to innovation. Even a company with market power can improve consumer outcomes by investing in research and development. Over the long term, innovation has resulted in far greater aggregate welfare gains than

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[186] The 2.0 machines appear to be capable brewing without the use of DRM, if Keurig so chooses. Dan D'Ambrosio, *With K-Cup Patent Expired, Others Try To Cash In*, USA TODAY (Oct. 29, 2013), *available at* http://www.usatoday.com/story/money/business/2013/10/29/life-after-the-k-cup-patent/3307187/.

[187] Alan Devlin & Michael Jacobs, *Anticompetitive Innovation and the Quality of Invention*, 27 BERKELEY TECH. L.J. 1, 8 (2012).

[188] The Ninth Circuit has come close to this level of permissiveness. *See Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp*, 592 F.3d 991 (9th Cir. 2010); section IV.B.1, *infra*.

low prices for consumers have; innovation represents the driving force behind advancements in the standard of living. When dealing with new products it is entirely appropriate that courts exercise an approach far more cautious than usual. And this has in fact been the case—courts have been hesitant to condemn innovative practices under Section 2, even if they make it more difficult for competitors to challenge an entrenched monopolist. While short-run prices may increase, consumers in general benefit from such innovations, and the legal system should ensure that it does not wrongly condemn these breakthroughs.

In certain circumstances, however, innovation can be used not to benefit the public but merely to strengthen the hand of an already dominant market participant.[189] Redesigns may intentionally and unnecessarily create incompatibilities with rival products.[190] Permitting any claimed innovation, regardless of effects, "ignores the possibility that a [purportedly] superior product might be used as a vehicle for tying sales of other products, and would pronounce products superior even where the predominant evidence indicated they were not."[191] This sort of pretextual innovation is conceptually similar to cases of pharmaceutical "patent hopping," whereby companies make small changes merely to extend the life of their patent.[192] This kind of predatory innovation can be used to strategically exclude rivals, without any consumer gains from improved quality or technical merit.[193] One notable situation that can yield anticompetitive effects occurs when the owner of an upstream platform renders it inoperable with non-licensed downstream products, thereby capturing a significant share of the downstream market.[194] While trying to determine whether an innovation is anticompetitive ex ante is a task "fraught with danger,"[195] there are several reasons to believe that the Keurig 2.0 represents this predatory form of pretextual redesign.

1. Antitrust Condemnation of Innovation in the Courts of Appeals

Courts are severely split on both how to determine when predatory innovation is occurring, and whether courts have a role to play in remediation. The four major frameworks for analysis were

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[189] *See generally id.*
[190] Hillary Greene, *Information Product Redesign as Commercial Expression: Antitrust Treatment of Speech and Innovation*, 95 B.U. L. REV. (forthcoming 2015) (manuscript at 32) (on file with author).
[191] *IBM Peripheral EDP Devices* 481 F. Supp. 965, 1003 (N.D. Cal. 1978), *aff'd sub nom. Transamerica Computer Co. v. Int'l Business Machines Co.*, 698 F.2d 1377 (1983).
[192] *See, e.g.*, Brief for FTC as Amicus Curiae, Mylan Pharmaceuticals, Inc. v. Warner Chilcott Public Ltd. (E.D.P.A. Nov. 21, 2012) (No. 12-CV-3824); Devika Krishna Kumar, *NY Attorney General Sues Actavis and Forest Labs Over Alzheimer's Drug*, REUTERS, Sept. 15, 2014.
[193] Devlin & Jacobs, *supra* note 187, at 8–9.
[194] *Id.* (citing Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575, 1617 (2002).
[195] *Id.* at 39.

laid out by the Second Circuit in *Berkey Photo v. Eastman Kodak Co.*[196]; by the Federal Circuit in *C. R. Bard v. M3 Sys.*[197]; by the D.C. Circuit in *United States v. Microsoft Corp.*[198]; and by the Ninth Circuit in *Allied Orthopedic Appliances, Inc. v. Tyco Health Care Grp.*[199]

The *Berkey Photo* test far predates the others, and is likely the most hostile to antitrust claims of predatory innovation. Kodak had released a new camera, accompanied by new film that was incompatible with older cameras. Kodak, at the time, had over 60% share of the camera market, and an over 80% share of the film market.[200] Berkey, which competed with Kodak in the camera market but not the film market, claimed that the film innovation improperly restrained competition in the camera market.[201] The court rejected the claim, holding that "so long as the free choice of consumers is preserved . . . . [i]f a monopolist's products gain acceptance in the market, therefore, it is of no importance that a judge or jury may later regard them as inferior, so long as that success was not based on any form of coercion."[202] The problem with this test is that it relies on the revealed preferences of consumers in the world where innovative exclusion is purported to have taken place. If a competing product cannot come to market because of tactical innovation, then any choice made by consumers is merely illusory. As a result a challenger can never win. Either an innovative product succeeds, which proves its value, or it fails, in which case there is no competitive harm, and so nothing to worry about.[203] The test thus fails to provide a meaningful criterion to determine the anticompetitive aspects of innovation.

The Ninth Circuit, in *Tyco Health Care*, appears to have followed in the very restrictive shoes of the Second. In the case Tyco Health Care was alleged to have power in the market for sensors and machines measuring blood oxygen content.[204] In response to possible competition, Tyco developed and sold new monitors that were incompatible with existing sensors.[205] Competing sensor manufacturers sued, claiming Tyco's actual intent in introducing the new censors was to forestall entry and exclude them from the market. The court rejected their challenge, quoting *Berkey Photo* to hold that "[a] monopolist, no less than any other competitor, is permitted and indeed encouraged to

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196 603 F.2d 263 (2d Cir. 1979).
197 157 F.3d 1340 (Fed. Cir. 1998).
198 253 F.3d 34 (D.C. Cir. 2001).
199 592 F.3d 991 (9th Cir. 2010).
200 603 F.2d 263, 269–70.
201 *Id.* at 267–68.
202 *Id.* at 287.
203 Devlin & Jacobs, *supra* note 187, at 21.
204 592 F.3d 991, 994 (9th Cir. 2010).
205 *Id.* at 995.

compete aggressively on the merits, and any success it may achieve solely through 'the process of invention and innovation' is necessarily tolerated by the antitrust laws."[206] Tyco's intent, or the anticompetitive effects, was irrelevant. The panel refused to balance benefits of redesign against anticompetitive effects; rather it found that there was clear improvement in calibration, flexibility, functionality[207]; these were enough to insulate all claims of predatory conduct. The court held that "[i]f a monopolist's design change is an improvement," it is "necessarily tolerated by the antitrust laws, unless the monopolist abuses or leverages its monopoly power in some other way when introducing the product."[208] The court did not specify what sort of abuse or leverage would violate this standard, or how innovation should be analyzed when no clear improvement is present.

While the Ninth Circuit rejected a balancing test to determine if innovation is pretextual and predatory, the D.C. Circuit accepted such a test wholeheartedly. One of the claims against Microsoft, at the time a dominant firm in the operating system market, was that it had integrated the previously separate Internet Explorer browser into its Windows system. The alleged goal was that Microsoft would eliminate Netscape as a competitor in the Internet browser market through this technological tie, and thereby shore up its monopoly over operating systems.[209] The court laid out a balancing test that it would apply to allegations of predatory innovation: (1) the conduct must "harm the competitive *process* and thereby harm consumers. In contrast, harm to one or more competitors will not suffice"[210]; (2) if this is accomplished, the monopolist "may proffer a 'procompetitive justification' for its conduct"[211]; (3) "the plaintiff must demonstrate that the anticompetitive harm of the conduct outweighs the procompetitive benefit."[212] While this test was not an issue in *Microsoft*—Microsoft failed to offer a procompetitive justification for its actions—how it should be applied going forward, including the nature of proof regarding possible future actions, was not remarked upon, leaving outcomes unpredictable.

Finally, the Federal Circuit avoided attempts to quantify innovation by focusing strictly on intent.[213] The plaintiff, Bard, was countersued by M3 claiming it had monopolized the market for

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206 *Id.* at 998.
207 *Id.* at 1001.
208 *Id.* at 1000.
209 253 F.3d 34, 71 (D.C. Cir. 2001) (exclusive practices "help keep usage of Navigator below the critical level necessary for Navigator or any other rival to pose a real threat to Microsoft's monopoly.").
210 *Id.* at 58.
211 *Id.* at 59.
212 *Id.*
213 157 F.3d 1340, 1382 (Fed. Cir. 1998).

automated biopsy guns and for the needles that are compatible with them.[214] While Bard's guns had originally accepted standard-specification needles, it modified the gun at some point to accept only proprietary needles. The defendant alleged that the redesign that arguably had no impact except to make rivals' complementary supplies obsolete.[215] This was supported by internal documents which showed that the purported improvements had "no effect on . . . performance."[216] While they did not decide if the product actually constituted an improvement, the circuit judges relied on proof that Bard "made a change in its [product] for predatory reasons, i.e., for the purpose of injuring competitors in the . . . market, rather than for improving the operation of the [product]."[217] This analysis fails to register that issues of intent are often irrelevant to antitrust analysis; to put it simply, many firms act to gain an advantage over their competitors, even to put them out of business.[218] While the competing firm may be harmed, competition may be furthered. Thus, a strictly intent-based regime cannot provide a meaningful way to separate the wheat from the chaff, although intent may be relevant in ascertaining the likelihood of an innovation's importance.

2. Keurig 2.0—Innovative breakthrough or repackaged reject?

Despite problems with each of the above methods of determining whether an innovation is pretextual, each can be applied to Keurig's new brewer. Each, taking the full context into account, would probably find that innovations in Keurig 2.0 are pretextual and designed to exclude competition. If the only way a new product can profitably be introduced is to restrain the legitimate competition of older products, then one must seriously wonder whether the new product genuinely benefits consumers. Though the carafe-capacity is a meaningful improvement, the exclusionary aspect of the DRP arguably adds nothing and is likely intended to stifle competition. As a result, that aspect of the redesign may potentially constitute a violation of the antitrust laws.

Under the test of *Berkey Photo*, the Second Circuit looks at whether a product was successful in the market, absent coercion. But the innovation in question is inherently coercive, as described in section IV.A, *supra*. If consumers preferred the quality and reliability of the K-Cups, no tying would be necessary. If they prefer cheaper alternatives, then coercion is present. Likewise, Keurig's innovation would be predatory under application of the *Tyco* test espoused by the Ninth Circuit. That test would protect any innovation, no matter how anticompetitive, if there were evidence of

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[214] *Id.* at 1367.
[215] *Id.* at 1382.
[216] *Id.*
[217] *Id.*
[218] HOVENKAMP, *supra* note 51, at 138.

"clear improvement" and an absence of other indicia of anticompetitiveness. It is unclear how affirmatively denying consumers a choice between aftermarket brands fails to be an indicia of anticompetitiveness. Keurig executives have made clear that while the Keurig 2.0 could, technologically, work with competing cartridges;[219] "a K-Cup will be a K-Cup."[220] In this situation, the Ninth Circuits admonition against a monopolist leveraging or abusing market power is clearly on point. Keurig is using technological change in an attempt to exclude competitors and raise barriers to entry. Thus, it would likely fall afoul of the *Tyco Standard*. In a similar vein, the purported innovations in the Keurig 2.0 brewer cannot be sustained under the *Microsoft* test. Keurig has thus far failed to show a convincing procompetitive justifications for its actions. Much as with Microsoft, the actual balancing can be avoided based on an inability of the innovator to counterbalance anticompetitive effects. Finally, though it requires further evidence to prove, the Federal Circuit's intent test seems likely to be met. On a November 20, 2013 call with investors, Brian Kelley, the CEO of Keurig, stated that the "introduction of Keurig 2.0" is "an opportunity to convert unlicensed [K-Cup competitors] into licensed partners."[221] Under its licensing agreements, Keurig requires that former competitors in the K-Cup market allow Keurig Green Mountain decision-making authority over output, allegedly to ensure non-competitive, restricted sales and thereby increased market price. Intent to convert independent competitors into cowed licensees who are dependent on Keurig's good will to sell their product represents a substantial attempt to squelch competition. Under the Federal Circuit's test, a new, innovative product introduced by a firm with market power, with the goal of restraining competition, is per se illegal under section 2.

There can be no question that this predatory redesign harms consumers. Consumers ignore or at least discount aftermarket expenses when purchasing a durable good, and are as such vulnerable to installed base opportunism.[222] It is possible, even likely, that consumers who have already purchased Keurig 2.0 purchased the machine without giving much thought to aftermarket expenses.[223] In light of that, Keurig has engaged in an anticompetitive and opportunistic redesign of its machine. It is exploiting consumer ignorance to extract monopoly rents. Even if all the exclusive dealing arrangements were terminated tomorrow, the technological redesign in the 2.0 would prevent a competitive K-Cup market from emerging. Because Keurig made clear that the Keurig 2.0

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[219] D'Ambrosio, *supra* note 186.
[220] Kelley, Q4 2013 Earnings Call, *supra* note 45.
[221] Kelley, Q4 2013 Earnings Call, *supra* note 45; *see also* Stifel, *supra* note 22, at 1.
[222] *See* section II.B.2, *supra*.
[223] *See* section III.B.2, *supra*.

machine is capable of brewing competing cartridges,[224] the agencies should seek to enjoin Keurig from implementing the exclusionary software.

VI. CONCLUSION

This paper has examined Keurig's practices in aftermarket monopolization discretely, noting that each raises barriers to entry in addition to costs for competitors. Keurig's exclusionary contracts with machine manufacturers and distributors, technological tying, and pricing practices raise the costs faced by competitors. Likewise, these same practices, coupled with Keurig's large and exclusive portfolio of brands, erect barriers to entry for potential new competitors. Each of these practices buttresses Keurig's monopoly, allowing it to extract more excess profits from customers for an extended period of time. Each discrete anticompetitive act, however, is not occurring in isolation. The Supreme Court has instructed that in Section Two abuse of monopoly cases, conduct should not be viewed in isolation, but should be looked at as a whole.[225] Looking at the long list of steps Keurig has taken to insulate outsized profits from market pressure, it is clear that in aggregate its exclusionary practices have a large anticompetitive effect and should be enjoined.

More importantly, the paper has shown that, as the Supreme Court recognized in *Kodak*, anticompetitive harms can occur from aftermarket monopolization. Though it has dropped as an enforcement priority in the last two decades, it is time for the enforcement agencies to once again weed out such anticompetitive harms to consumers.

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[224] D'Ambrosio, *supra* note 186.
[225] *Cont'l Ore Co. v. Union Carbide & Carbon Corp.*, 370 U.S. 690, 699 (1962).