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Competition Issues in Aftermarkets - Note from BIAC

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More documents related to this discussion can be found at

www.oecd.org/daf/competition/aftermarkets-competition-issues.htm

Please contact Mr. Antonio Capobianco if you have any questions about this document
[E-mail: Antonio.Capobianco@oecd.org]

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Business and Industry Advisory Committee (BIAC)

The Business and Industry Advisory Committee ("BIAC") to the OECD appreciates the opportunity to submit these comments to the OECD Competition Committee for its session on competition issues in aftermarkets.

1. Introduction

1. The existence of aftermarkets has given rise to a number of antitrust concerns and economic theories about the impact of aftermarket monopolization on customers. There are various theories pertaining to aftermarkets, and the ability and incentives of firms to exploit their customers through monopolization of the aftermarket. Many of these theories emanate from a debate over the potential for harm coming from aftermarket monopolization, particularly where there is competition in the upstream markets. The debate has advanced significantly over time and has benefitted from a great deal of economic thinking that is relevant to the consideration of such cases. The economic thinking has permeated, sometimes directly and sometimes less directly, the primary legal cases that have addressed monopolization in aftermarkets.

2. To examine these issues, we focus on the evolution of economic thinking, followed by the case law that reflects this thinking. First, we present the so-called single monopoly profit principle, which emerged as a critique out of the Chicago school and which asserts that aftermarket monopolization generally should not be considered harmful and, in any event, is preventable through *ex ante* contractual solutions. In response to this principle, a so-called post-Chicago approach has emerged that pinpoints the characteristics of the primary market and aftermarket through which the aftermarket monopolization could in fact cause harm. Both of these schools of thought are relevant in considering the potential for harm in aftermarket cases and offer serious ground for evaluation of the issues.

2. The Chicago Critique and the Single Monopoly Profit Principle

3. The crux of the Chicago school single monopoly profit critique is as follows: a firm holding market power on one product cannot increase its profits by tying it to a complementary product in an attempt to make monopoly profits on the second product as well. There is a single demand for the "system" composed of the two complementary products, and thus a single source of profit to be made; hence, whatever profit the firm can earn from exploiting this demand can be achieved simply by selling its primary product at the appropriate price. Under this line of thought, entering the secondary market can even be a lossmaking strategy, if other firms are more efficient.

4. Applied to aftermarkets, the logic of "tying" holds that a monopolist on the equipment market has no economic incentive to monopolize the aftermarket for its good. It can acquire the monopoly profit with a competitive aftermarket, and might even benefit from competition in said aftermarket.

5. The firm does not need to have a monopoly: as long as it has some market power on the primary market, the conclusion holds—indeed, as long as competition is imperfect,

each firm is a monopolist on its "residual demand," that is, on the demand for its products, given the other firms' offerings. Tying equipment to the aftermarket through aftermarket monopolization cannot aim at restoring or extending market power to achieve higher profits. When it holds true, the single-profit rule implies that if a firm is engaged in tying—or, in the case of aftermarkets, in monopolization—it must be for efficiency reasons. It also indicates that buyers would only agree to such ties and acquire aftermarket services from the equipment seller if the rebate granted on the equipment compensates totally for the supracompetitive prices on the aftermarket, meaning that customers are not harmed by the monopolization.

6. The Chicago critique has also developed an analysis specific to aftermarkets, which holds that competition on the equipment market is sufficient to eliminate any possibility of excessive pricing on the aftermarket. The main idea is that competition to attract customers on the market for the primary good reins in lifecycle costs, even if customers were myopic and did not consider aftermarket prices in their decision to buy the primary good. The theory is that producers will compete away their aftermarket profits by discounting the primary good in order to lock customers in. If the primary market is perfectly competitive, the level of the rebate is expected to equal the amount of aftermarket rents exactly.

7. Thus, according to the Chicago school, anticompetitive behaviour on the aftermarket for equipment goods cannot arise, even if the firm has market power in the primary market, because this so-called installed-base opportunism[1] is extremely unlikely to be profitable. The reasoning behind this conclusion relies on two main assumptions, which are presented below.

- **Customers are perfectly informed and farsighted**

8. In the Chicago critique, customers are rational and perfectly informed. They master the information required to make optimal choices, and will take maintenance costs into account when deciding which equipment to acquire.

9. The theory depends on customers' ability to properly make such calculations, even when complex: at least part of the customer base is likely to be sophisticated enough to perform these calculations, and information is available for all, be it in the form of specialized consultants or brokers who have already performed the cost/quality analysis for the competing products on the market.[2] Indeed, when the customers are businesses, and need to acquire expensive equipment that requires financing, a lifecycle cost analysis may be a prerequisite to obtaining financing.

10. What is more, the theory holds that manufacturers of the primary good themselves have a very strong incentive to make sure customers can properly compare their offers, especially in terms of pricing schemes between primary market and aftermarket. Firms offering low aftermarket prices should therefore advertise their competitive advantage and simplify lifecycle costing so as to attract customers away from competitors practicing supracompetitive prices in the aftermarket.

[1] Installed-base opportunism (also called the "lock-in" effect) refers to a situation wherein customers can only consume aftermarket goods or services supplied by the original equipment manufacturer.

[2] Carl Shapiro, *Aftermarkets and Consumer Welfare: Making Sense of* Kodak, 63 ANTITRUST L. J. 483-511 (1995); and Carl Shapiro & David J. Teece, *Systems Competition and Aftermarkets: An Economic Analysis of* Kodak, 39 ANTITRUST BULL. 135 (1994).

11. Therefore, provided the cost of information is low enough in comparison to the cost of the good, customers have no reason not to be able to calculate total cost of ownership. This is especially the case for repeat buyers, who can base *ex ante* calculation on empirics from their previous purchases and adjust it accordingly.

12. Moreover, when there is no ability to price discriminate against customers based on their level of information, all customers need not be well informed for aftermarket prices to be disciplined, since poorly informed customers can be protected by the better-informed buyers. Absent price discrimination, the mere presence of a large enough contingent of customers informed about total cost of ownership forces sellers to compete on that basis, and poorly informed customers benefit from the presence of their more knowledgeable peers.

- **Customers View the Primary and Secondary Goods as a System**

13. The Chicago critique applies to goods that are perfect complements, that is, if the aftermarket products and equipment are used in fixed proportions—as is the case if one machine is used with a fixed quantity of aftermarket products— then the combination is a true "system."

14. What matters then is the total price for the system, and the degree to which the total price is distributed among each element of the system is irrelevant. In such a situation, there is no separate consideration of aftermarket power, since both the primary and secondary markets can be considered as forming a single whole. As long as customers are informed of the costs in the aftermarket, they cannot be exploited even if there is market power in the primary market. They will choose the price system that is the most competitive, and a firm could only maintain higher aftermarket prices if its equipment prices were proportionally lower.

3. Economic Justifications for Dominance of the Aftermarket

15. As explained above, a firm with control over an important input (like spare parts) for a secondary market is likely to benefit from competition in the aftermarket. Exploitation is possible only because the firm has control over a necessary input for the aftermarket. In this framework, monopolization of the aftermarket and exclusionary practices directed against aftermarket actors, such as maintenance providers relying on the spare parts provided by the upstream firm, cannot be motivated by the will to increase profits—it must be explained by other factors, such as reputation or quality control.

- **Monopolization Mitigates Inefficiencies in the Replacement of Equipment**

16. There is also a principle which predicts that monopolization of the aftermarket can enhance the efficiency of the market by ensuring that excessive maintenance does not extend the lifecycle of the primary product beyond the point of efficiency. To an extent, maintenance can extend equipment lifetime for some products. Thus, a monopoly on the equipment market combined with a highly competitive aftermarket can lead to inefficiencies by keeping equipment in use for too long—i.e., to the point of inefficiency—whereas aftermarket monopolization can mitigate the distortion in the

arbitrage between maintenance and replacement and promote the switch to new equipment at the most efficient point.

17. If a manufacturer cannot extract profits from its market power in the aftermarket (which may be needed, e.g., to recover the costs of investment in equipment quality), it will be forced to recover these costs from the sale of the equipment itself.[3] Aftermarket prices are then lowered, and equipment prices increased, which makes it more profitable for customers to extend the life of their equipment through additional maintenance even when a replacement is warranted. As a result, consumption patterns are subject to a distortion that leads to excessive consumption of aftermarket products and insufficient consumption of equipment goods, as compared to the efficient outcome.

- **Monopolization Makes Investments in the Quality of Primary Goods Profitable**

18. Manufacturers often defend their position in the aftermarket as necessary to recoup the costs of investment in the quality of their primary goods. If they were not allowed to extract some profit from the aftermarket through supracompetitive pricing, and if quality is not observable, then firms would not be able to maintain low equipment prices and would lose their customers to low-priced equipment goods of inferior quality. Producing high-quality goods would not be profitable for firms in such a setting. This in turn would lead to inefficient levels of investment, exclusion of the high-quality products from the primary market or exclusion of low-value customers, and overall suboptimal demand for the primary good. In such cases, aftermarket monopolization can restore efficient pricing and increase total welfare.

19. Aftermarket monopolization may serve as a quality signal for equipment.[4] If customers cannot directly assess the quality of the different equipment products on offer before their purchase, they could be drawn towards lower-cost products. Tying together primary products and the aftermarket can drive customers to interpret higher prices as a quality signal, and the market could establish better discrimination between heterogeneous customers with varying values for the good. However, the results hold true only under specific hypotheses, such as the assumption that higher quality goods are associated with higher aftermarket demand (when one could suppose that high-quality goods need less maintenance).

- **Contract Law Adequately Protects Buyers**

20. In the Chicago critique, installed-base opportunism or "hold-up" is nearly impossible if customers are well informed and, in any event, highly unlikely to enhance profits in most cases. While most adherents to the Chicago critique do admit that a risk of opportunism could arise, they believe that contract law enables buyers to protect themselves when they acquire a good knowing that they will be locked in, at least for some time. They therefore have strong incentives to negotiate contractual protections at the time of purchase, when they are still in a (relatively) strong bargaining position.

[3] Kenneth G. Elzinga & David E. Mills, *Independent Service Organizations and Economic Efficiency*, 39 ECON. INQUIRY 549-560 (2001).

[4] Marius Schwartz & Gregory J. Werden, *A Quality-Signaling Rationale for Aftermarket Tying*, 64 ANTITRUST L. J. 387-404 (1996).

21. The sum of the above principles suggests that antitrust is an unwieldy way of addressing aftermarket issues, especially given the perceived low levels of harm to customers in such cases. Rather, protection from aftermarket exploitation should remain managed exclusively through contracts.

4. Post-Chicago Analysis: Aftermarket Monopolization Can Be Harmful

22. The post-Chicago analysis argues that aftermarket monopolization can be harmful to customers, and tries to assess under which circumstances such harm is likely to occur. It relies on theories which find that, under fairly general conditions including a competitive primary market and fully informed customers performing lifecycle cost analysis, installed-base opportunism—made possible by the existence of locked-in customers and switching costs—is likely to be profitable for a firm, even if it induces losses on the primary market.

23. The fact that an installed base exists is likely to create the potential for supracompetitive aftermarket prices and monopolization attempts that are not disciplined by customers' switching behavior, reputation effects, or any of the disciplining forces the Chicago critique expects to make the overall pricing of the system drop to its competitive level. Some of the bases for the post-Chicago observations are discussed below.

- **The Surprise Theory**

24. The "Surprise Theory" applies when the lifecycle cost analysis performed by customers at the time of purchase of the primary good is affected by an unexpected change in the aftermarket terms or pricing. The key element of the Surprise Theory is that the manufacturer can exploit locked-in buyers by making unexpected changes in aftermarket policies, for instance by excluding rivals in order to monopolize the aftermarket and extract more profits from captive buyers who already purchased the equipment and are unable to switch in a timely manner.

25. As Shapiro states, "The surprise theory starts from the assumption that buyers in the aftermarket are vulnerable, and asks whether the equipment manufacturer will find it profitable to unexpectedly change its policies so as to exploit them. The firm that takes advantage of its installed base of customers who find it costly to switch to other brands is said to engage in installed-base opportunism."[5] He adds, "Under the surprise theory, antitrust injury would occur if buyers had anticipated or relied on competitive aftermarkets, but some change in the manufacturers' policies blocked that competition."[6]

26. The fact that the change was unexpected and unlikely to be expected is a central tenet of the Surprise Theory. Purchasers can try to protect themselves through contracts signed at the time of purchase. By shifting their aftermarket expenses to the time of the equipment purchase, when they are likely to enjoy a better bargaining position, buyers may be able to secure better prices and conditions on aftermarket products. But a pivot by the equipment supplier in their aftermarket practices may undermine the ability of the buyers to protect themselves at the time of acquisition. The Surprise Theory reflects that

[5] See Shapiro, *supra* note 2, at 488.

[6] *Id*.

contract law is not a perfect protection from all possible injuries in the aftermarket, due to the impossibility of drafting complete contracts.[7]

27. This theory is closely related to reputation issues: installed-base opportunism may impact a firm's reputation and substantially decrease its future sales (and, in turn, its future aftermarket earnings). The magnitude and disciplining force of reputation effects are somewhat ambiguous, but some factors can clearly be associated with a greater likelihood that reputation acts as a deterrent against opportunistic practices.

28. Taking advantage of locked-in customers is only possible to a given extent—the rent a manufacturer extracts from a given customer cannot exceed that customer's switching cost. If it is less costly for the customer to switch brands than to continue using the acquired equipment, the firm will lose that customer (assuming a competitive alternative exists). However, the customer's switching costs are extremely variable, depending on their time discount factor, the age of their equipment, competition in the upstream market, etc. Thus, a firm trying to monopolize its aftermarket will face some elasticity of demand, since the customers with the lowest switching costs will leave in response to supracompetitive aftermarket prices or lower quality service.

- **The Limited Commitment Theory**

29. The Limited Manufacturer Commitment principle identifies a scenario where at the time the primary equipment is purchased, the equipment manufacturer has limited ability (and incentives) to commit to low prices in the aftermarket.[8] At any given point in time, firms have an incentive to increase aftermarket prices for locked-in customers. Even if competition in the primary market makes firms offset their profits from the increase in aftermarket prices by a rebate on equipment prices, locked-in customers do not benefit from the offsetting and are therefore exploited. Furthermore, if aftermarket products are not bought in fixed proportions, the amount of aftermarket products sold is suboptimal, reducing the value of the equipment for all customers. Finally, low equipment prices and high aftermarket prices can lead to over-replacement of the equipment, which also is inefficient.

30. Therefore, regardless of the competition in the equipment market and of how informed and farsighted the customers are, customers are likely to be exploited in the aftermarket. At least to some extent, competition in the aftermarket is the only force capable of reducing the firms' incentives to take advantage of their locked-in customers.

[7] Shapiro explains, "Warranty coverage, rental and lease arrangements, and long-term service contracts all serve the function of shifting buyers' purchases from the aftermarket to the systems market. Thus, they diminish the importance of the aftermarket and any scope for consumer injury from aftermarket practices and policies. Nondiscrimination clauses, second sourcing provisions, and commitments to open systems all reduce the manufacturer's ability to engage in installed-base opportunism. However, it must be recognized that these contractual protections typically do not entirely eliminate the possibility of installed-base opportunism, since it is quite difficult for buyers to obtain ironclad protection by writing a 'complete' contract that specifies all relevant aftermarket terms and conditions.

Any analysis of installed-base opportunism must account for any explicit contractual protections obtained by customers. If most customers are so protected, any antitrust injury will be limited to a minority of consumers." *Id.* at 489.

[8] Severin Borenstein, Jeffrey K. MacKie-Mason & Janet S. Netz, *Antitrust Policy in Aftermarkets*, 63 ANTITRUST L. J. 455 (1995); Severin Borenstein, Jeffrey K. MacKie-Mason & Janet S. Netz, *Exercising Market Power in Proprietary Aftermarkets*, 9 J. ECON. & MGMT. STRATEGY 157-188 (2000).

Under this principle, even in the presence of dynamic considerations such as reputation effects, the profits that can be extracted from installed-base opportunism generally outweigh the losses on the primary market at any given point in time. In other words, absent competition in the aftermarket, equilibrium market prices tend to be supracompetitive, increasing the overall total cost of ownership for customers.

31. An alternative theory leads to the same conclusions.[9] This theory argues that due to the inability of customers to accurately discount future aftermarket costs at the time of equipment purchase, firms can maintain high aftermarket prices without being punished by customers. This in turn leads to reduced efficiency caused by premature replacement of equipment and poorly informed decision-making on the primary market.

- **The Costly Information Theory**

32. The Costly Information principle relaxes the assumption of perfectly informed and farsighted customers. It takes into account the fact that in some cases, the rate of uninformed or myopic buyers can be high, and these customers are not able properly to account for aftermarket costs at the time of equipment purchase. Their lack of information reduces the competitive pressure on the equipment market, since higher aftermarket prices are not punished by customers' decisions to purchase from firms with lower aftermarket prices.

33. In a setting with myopic customers, manufacturers have no incentive to offer lower aftermarket prices, because they will not attract more customers by doing so. To the contrary, they are fully incentivized to extract as much profit as they can from their locked-in customers. To put it simply, costly information partly or fully severs the linkage between primary market and aftermarket,[10] allowing a firm in a competitive equipment market to still hold considerable aftermarket power, due to an artificial reduction in competitive pressure caused by customer myopia.

34. Some equipment markets are more likely to involve costly information about the aftermarket costs associated with the various primary market competitors. Shapiro cites automobile markets as an example where "many buyers make their equipment purchases with poor information about aftermarket costs."[11] In such a case, the dynamic that is

[9] John J. Voortman, *Curbing Aftermarket Monopolization*, 19 J. LEGIS. 155 (1993).

[10] The European Court of Justice judgment in the *EFIM* case set a standard for the assessment of the links between the primary market and its aftermarket. The four-prong test assesses whether the upstream and downstream markets are sufficiently connected so as to rule out a dominant position in the aftermarket. The test asks: (i) whether customers can make an informed choice, (ii) whether they are likely to make such an informed choice accordingly; and (iii) whether, in case of an apparent policy of exploitation being pursued in one specific aftermarket, a sufficient number of customers would adapt their purchasing behaviour at the level of the primary market (iv) within a reasonable time. Case C-56/12 P, Eur. Fed'n of Ink & Ink Cartridge Mfrs. (EFIM) v. Eur. Comm'n, ¶ 12 (Sept. 13, 2013), *available at* http://curia.europa.eu/juris/liste.jsf?num=C-56/12&language=EN#.

It is worth noting that this test is similar to the one used for product market delineation. Therefore, if each of these four conditions is met, not only is dominance excluded in the aftermarket, it would point toward one single market for primary and secondary products. In other words, if one of these conditions is not verified, upstream and downstream markets are considered as separate markets and dominance cannot be ruled out.

[11] Shapiro, *supra* note 2, at 492.

supposed to protect customers from abusive aftermarket prices and behaviours through competition on the primary market fails to apply, and customers are likely to be harmed by aftermarket monopolization: the lack of information acts as a source of market power in the primary market.

35. In response to the assumption that firms have an incentive to advertise their aftermarket prices and educate customers about their competitive advantages, post-Chicago literature shows that manufacturers may in fact benefit from "shrouding" their prices and making it more complex for customers to assess lifecycle costs.[12] Farsighted, well-informed customers would interpret shrouded prices as being high, which makes them unprofitable. However, uninformed customers can be exploited, which makes customer education unprofitable for firms, even if it is costless. As such, myopic customers are not protected from exploitation by better-informed customers or by price competition on the equipment market.

36. Moreover, empirical studies have demonstrated that customers behave in a myopic fashion in some cases. These studies, for example, of purchases for energy-intensive household appliances, for which energy represents a significant fraction of the overall cost of ownership, point in the exact opposite direction of that supposed by Chicago scholars.[13] They observe that customers put much more emphasis on the upfront cost than on energy consumption, buying cheaper equipment with higher usage costs rather than more expensive models that have a lower overall lifecycle cost. Customers display myopia, which can also be interpreted as a very high preference for the present. They focus on the more immediate costs, and do not appear to perform lifecycle cost analysis, as Chicago scholars would expect.

5. Evaluating the Potential Magnitude of Harm

37. There is now a general consensus in the economic community and literature that aftermarket monopolization is both possible and profitable for a firm under certain fairly general assumptions. However, there is less consensus on the magnitude of this harm: no empirical studies have managed to measure the impact of the identified anticompetitive effects in general. The Chicago critique considers the impact generally to be small and thus discards the notion that antitrust is appropriate for dealing with such cases. But there are a series of factors that tend to make harm from market monopolization more likely and severe. Coppi provides a checklist that "can be used to evaluate the likelihood that aftermarket monopolization results in significant anticompetitive effects (consumer harm) in a specific case."[14] Below we present some key elements of this checklist.

[12] Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets* (Nat'l Bureau of Econ. Research, Working Paper No. 11755, 2005), *available at* www.nber.org/papers/w11755.pdf.

[13] Jerry A. Hausman, *Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables*, 10 BELL J. ECON. 33-54 (1979); Dermot Gately, *Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables: Comment*, 11 BELL J. ECON. 373-374 (1980); Jerry A. Hausman & Paul L. Joskow, *Evaluating the Costs and Benefits of Appliance Efficiency Standards*, 72 AM. ECON. REV. 220-225 (1982).

[14] Lorenzo Coppi, *Aftermarket Monopolization: The Emerging Consensus in Economics*, 52 ANTITRUST BULL. 53, 68-69 (2007).

- **High Switching Costs**

38. The level of switching costs is a threshold requirement for profitable exploitation: a firm can only exploit a locked-in customer for as long as the additional profits it extracts from her are lower than the costs of switching brands. Therefore, the higher the cost associated with switching from one supplier to another, the more a firm can exploit its customers without being punished by customers leaving due to abusive pricing or practices in the aftermarket. As a consequence, high switching costs generally enhance both the likelihood and the anticompetitive effects of aftermarket monopolization.

- **Low Competition on the Primary Market**

39. Even if competition on the primary market is not sufficient to dissipate all aftermarket profits as originally claimed by the Chicago school, it remains a relatively strong protection for customers. Indeed, the more competitive the primary market, the more the rebates in the primary market are likely to offset the aftermarket profits, since firms will tend to compete away the aftermarket rents to lock in customers. Thus, when there is low competition on the primary market, the harmful effects of anticompetitive practices on the aftermarket are more likely to be strong.

- **Significant Information Asymmetries**

40. Information asymmetries can arise from different sources and have direct effects on a firm's ability to profitably pursue aftermarket monopolization strategies.

41. *Low-Quality Information*: If customers face costly information in the primary market, they will not manage to properly assess the lifecycle cost of the product. That allows firms to exploit customers once they are locked in through supracompetitive pricing in the aftermarket, without necessarily offering the corresponding rebates on the equipment market. If a firm were to engage in aftermarket monopolization, such a situation would result in significant customer harm.

42. *Large Proportion of Uninformed Customers*: Myopic customers do not take into account aftermarket prices when they buy the primary good because they lack the ability or sophistication to perform a lifecycle cost estimation, because they cannot assess their future demand for aftermarket products, or because they discount future costs and make a judgment solely based on upfront prices. The higher the rate of this type of customer, the more firms are incentivized to exploit their installed base of customers. The ability and likelihood of opportunism are greater, as are the associated anticompetitive effects.

43. *Lack of Complete Contracts*: Contract law is a tool customers can use at the time of purchase to protect themselves from ex-post exploitation once they are locked in. They can use contracts to shift negotiations in time and benefit from a better up-front bargaining position to acquire some insurance against installed-base opportunism. The lack of this type of contract enhances the likelihood and gravity of anticompetitive effects.

- **Large Aftermarket**

44. The larger the size of the aftermarket relative to the primary product market, the greater the potential gain from increasing the price of aftermarket products, resulting in

more latitude for anticompetitive conduct. For instance, the aftermarkets of products with a long lifetime, which are not frequently replaced, are more likely to be profitably monopolized than short-lived equipment.

45. The ratio of locked-in customers to new customers is positively correlated with the potential severity of harm: a high ratio of locked-in customers reduces the penalty associated with losses in the primary market due to high aftermarket prices—particularly where switching costs are high—which in turn increases the likelihood of anticompetitive practices.

- **Weak Reputation Effects**

46. Reputation is likely to discipline firms. If the sales lost on the primary market due to diminished reputation are significant enough, they can offset the extra profits extracted from the locked-in customers that already bought the primary product. The arbitrage strongly depends on market structure, but some features are more likely to weaken reputation effects enough to make installed-base opportunism profitable.

47. *The Market is Shrinking*: If the market is shrinking, then by structure, the relative size of the pools of current and future buyers is inherently smaller than that of the locked-in customers. A firm active in a shrinking market is more likely to discount losses on the sales market and try to extract maximum benefits from its installed base. This also may be true for products nearing the end of their production lifecycle.

48. *The Firm is Exiting the Market*: If a firm is exiting the market in which it is active, it has no expectation of future sales and is totally immune to the disciplining effects of reputation. It will therefore be likely to exploit its customer base through supracompetitive pricing in the aftermarket.

49. *The Firm is not Present on Multiple Markets*: Firms that are active in several markets will potentially pay a higher penalty with regard to reputation for exploiting their installed base and thus will tend to have a weaker incentive to raise aftermarket prices. Conversely, a firm present in a single market has less to lose in terms of reputation if it exploits its locked-in customers.

- **High Discount Rates**

50. The higher the discounts a firm is willing to grant on the equipment market, the more profit it expects to extract from the corresponding aftermarket. This is an indication of potential significant harm in the event of aftermarket monopolization.

51. There are two effects that can arise when high discounts are offered on the primary market, both related to the preference for the present and discount rates. The first pertains to the customers' discount factors: if the customer discounts future costs in comparison with the upfront equipment price, firms will be able to charge supracompetitive aftermarket prices without risking lost sales in the primary market. The second is based on the firms' discount rates: firms that are more focused on their near-term results, rather than longer-term profitability, value the current extra profits extracted from the monopolization of the aftermarket more than future losses in sales on the primary market due to bad reputation effects.

6. Legal Analysis of Aftermarket Cases

52. For years, U.S. courts followed the Chicago critique and generally did not recognize anticompetitive behavior in aftermarkets. In 1992, however, the U.S. Supreme Court reviewed the *Kodak* case and concluded that, even with a competitive primary market, anticompetitive behavior could arise in the aftermarket.[15] The Court ruled that a manufacturer could have a monopoly in the servicing of its own equipment, irrespective of a competitive market for the sale of the primary equipment. It concluded that Kodak, by refusing to supply spare parts for its machines to independent service organizations (ISOs), was aiming at controlling the aftermarket for the maintenance of its machines, leveraging its control over spare parts to gain market power on maintenance.

53. The *Kodak* decision marked a shift in how the law viewed market power in aftermarkets, and was widely discussed in the legal and economic communities, leading to most of the economic analysis reflected above. Notably, the *Kodak* case rests, in effect, on the post-Chicago "Surprise Theory," since Kodak unilaterally decided to stop supplying spare parts to ISOs after having supplied them regularly in the past. As a result, customers of the ISOs had to use the OEM for servicing, even if the clients preferred the ISO's services to Kodak's, because the ISOs could no longer replace certain parts.

54. Following the Supreme Court's decision in *Kodak*, lower courts have reached differing conclusions on what evidence is necessary to demonstrate a separate aftermarket. A number of courts have limited the *Kodak* doctrine to situations in which the manufacturer has changed its policy on supplying aftermarket parts and service and have held that when the aftermarket policy is generally well-known that aftermarket concerns are unlikely to exist.[16]

55. Other courts have interpreted *Kodak* more broadly, finding that when customers are unable to determine the range of conditions that would apply to the aftermarket at the time of contracting, a lock-in and exploitation could occur.[17] On balance, it is difficult to observe a firm set of principles governing market definition and abuse based on post-*Kodak* case law in the U.S.

56. In the European Union, the issue of market definition in aftermarket cases has been addressed more expressly, both in the European Commission's Market Definition Notice[18] and in EU Courts' case-law.

57. In its Market Definition Notice, the European Commission (EC) identifies aftermarkets as an area where the general principles applicable to market definition is generally the same as in other cases but should be applied with care. It states that the method of defining aftermarkets requires "assessing the responses of customers based on their purchasing decisions to relative price changes, but taking into account as well, constraints on substitution imposed by conditions in the connected markets."[19]

[15] Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451 (1992).

[16] *See* Queen City Pizza v. Domino's Pizza, 124 F.3d 430 (3rd Cir. 1997).

[17] *See, e.g.*, Newcal Indus. v. IKON Office Sol., 513 F.3d 1038 (9th Cir. 2008).

[18] Commission Notice on the Definition of Relevant Market for the Purposes of Community Competition Law, 1997 O.J. (C 372) 5-13.

[19] *Id*., ¶ 56.

58. This suggests a two-step approach for defining aftermarkets. In the first stage, the general market definition principles apply, including the hypothetical monopolist test. Arguably, this would inevitably lead to the conclusion that a primary product and its aftermarket products constitute separate product markets since there is no substitution between them (e.g., a printer and its ink cartridges). Competition on the connected markets, i.e., the primary market, would be considered in a second stage. The EC does not elaborate on how competition on the connected markets may impact the market definition of the aftermarket products.

59. The Market Definition Notice, however, provides the following helpful examples: "A narrow definition of market for secondary products, for instance, spare parts, may result when compatibility with the primary product is important. Problems of finding compatible secondary products together with the existence of high prices and a long lifetime of the primary products may render relative price increases of secondary products profitable. A different market definition may result if significant substitution between secondary products is possible or if the characteristics of the primary products make quick and direct consumer responses to relative price increases of the secondary products feasible."[20]

60. These examples suggest that the EC considers that two criteria should be taken into account when examining aftermarket products, namely: (i) the importance of the aftermarket product's compatibility with the primary product; and (ii) the characteristics of the primary product, and in particular its price and lifetime. According to the EC, a separate aftermarket would exist when compatibility with the primary product is important, the price of the primary product is particularly high, and the primary product has a long lifetime.

61. The EU Courts have held that the existence of economic operators specialized and active solely on the aftermarket of a primary market, among other factors, reflect an indication of the existence of a separate aftermarket.[21] Several cases have addressed the specific factors that indicate the potential for a separate aftermarket.

62. In 2004, the Confédération Européenne des Associations d'Horlogers-Réparateurs (CEAHR) lodged a complaint with the EC alleging that luxury watch manufacturers had abused their dominant position by refusing to continue to supply spare parts to independent repairers. In 2008, the EC rejected CEAHR's complaint on the ground that there was insufficient Community interest in continuing the investigation. The EC argued, *inter alia*, that watch spare parts and watch repair and maintenance services did not constitute separate aftermarkets, instead they formed part of a single system market, together with watches.[22] The General Court annulled the EC's decision, holding that the EC had failed to show that a moderate price increase in the aftermarket products would cause a shift in demand to watches from other manufacturers, rendering such an increase unprofitable.[23] According to the General Court, for a system market to exist, it would have to be shown that:

[20] *Id*.

[21] Case T-30/89, Hilti v. Comm'n, 1991 E.C.R. II-1439, ¶ 67; Case T-427/08, Confédération européenne des associations d'horlogers-réparateurs (CEAHR) v. Eur. Comm'n, 2010 E.C.R. II-5865, ¶¶ 108, 112.

[22] *CEAHR*, *supra* note 21, ¶ 77.

[23] *Id*., ¶ 107.

> [A] sufficient number of consumers would switch to other primary products if there were a moderate price increase for the products or services on the after markets and thus render such an increase unprofitable . . . . In other words, contrary to what the Commission suggests . . . the mere possibility for the consumer to choose from several brands on the primary market is not sufficient to treat the primary market and the after markets as a single market, unless it is established that that choice is made, among others, on the basis of the competitive conditions on the secondary market.[24]

63. Further, in 2006, the European Federation of Ink Cartridge Manufacturers ("EFIM") lodged a complaint with the EC alleging that various manufacturers of inkjet printers and printer supplies had abused their dominant position by illegally excluding competing inkjet cartridge manufacturers from their respective inkjet cartridges' aftermarkets.[25] In 2009, the EC rejected EFIM's complaint on the ground that there was insufficient Community interest in continuing the investigation.[26] As in the *CEAHR* case, the EC's conclusion was based, *inter alia*, on a finding that the primary market and aftermarket were so closely linked that competition on the printer market would effectively discipline the inkjet cartridge aftermarket, i.e., that there existed a system market.[27]

64. In arriving at this finding, the EC argued that a primary market and an aftermarket are sufficiently closely linked to form a system market only where:

> a customer (i) can make an informed choice including lifecycle pricing, that he (ii) is likely to make such an informed choice accordingly, and that, (iii) in case of an apparent policy of exploitation being pursued in one specific aftermarket, a sufficient number of customers would adapt their purchasing behavior at the level of the primary market (iv) within a reasonable time.28

65. This so-called *EFIM*-test, which is largely consistent with the General Court's findings in the *CEAHR* case, was confirmed on appeal by the General Court and the Court of Justice of the European Union.[29]

7. Conclusion

66. On the whole, the analytical framework of aftermarket analysis has witnessed a substantial degree of analysis and evaluation over the 20 years following the *Kodak* decision in the U.S. While many useful principles have developed from this analysis, there is no definitive set of rules that can be established. What is clear, however, is that the issue of aftermarket market definition and the potential for exploitation is a highly fact-intensive exercise that varies by market as well as market participant.

[24] *Id*., ¶ 105.

[25] Case COMP/C-3/39.391—EFIM, Comm'n Decision, ¶ 1 (May 20, 2009), *available at* http://ec.europa.eu/competition/antitrust/cases/dec_docs/39391/39391_125_10.pdf.

[26] *Id*., ¶ 2.

[27] *Id*., ¶ 25.

[28] *Id*., ¶ 16.

[29] Case C-56/12 P, Eur. Fed'n of Ink & Ink Cartridge Mfrs. (EFIM) v. Eur. Comm'n, ¶ 37 (Sept. 13, 2013), *available at* http://curia.europa.eu/juris/liste.jsf?num=C-56/12&language=EN#.

67. As a result, undertaking the investigation of aftermarket abuses should not be undertaken lightly. Agencies should act where there are clear signs of exclusionary behavior resulting in significant consumer harm and where productive remedies can be identified. This is likely to occur rarely, but the potential for such cases should not be excluded.