NOT ALL PRE-EMPTIVE MERGERS ARE ALIKE: A CLASSIFICATION OF RECENT CASES

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I. INTRODUCTION

There has been much recent debate about whether antitrust agencies *have been* sufficiently attentive to preemptive mergers, where one firm acquires another that it expects will become a more vigorous competitor in the future.[2] The suggestion, sometimes described in terms of "killer acquisitions" (Cunningham et al., 2020), "kill zones" (The Economist, 2018),[3] or, less graphically, "the elimination of nascent competition," is that agencies may have allowed transactions that, while perhaps not substantially reducing competition in the short-run, deprived consumers in the future of lower prices, better products, and more variety. It has been claimed that these types of mergers have been particularly common in certain sectors, such as the tech and pharmaceutical industries (Hemphill & Wu, 2020),[4] but it is an open question whether these issues arise more generally.

The debate has touched on questions related to both the economics of innovation and investment, as well as the design of policy. For example, the theoretical relationship between market concentration and innovation is ambiguous because a firm may have more incentive to introduce a new product when it has market power (this is often called the "efficiency effect"), but, as a force in the other direction, an incumbent may have less incentive to introduce new products that will cannibalize its existing sales ("replacement effect").[5] However, a recent contribution by Federico et al. (2020) argues that, notwithstanding this ambiguity, a merger between competitors will typically cause innovation to fall.[6] In terms of policy, the debate has asked whether it would be appropriate to change presumptions or the burden of proof so that parties would have to demonstrate procompetitive effects, and whether HSR thresholds should be reduced to prevent firms eliminating nascent rivals without agency scrutiny.[7]

2 For example, the FTC's Hearings on Competition and Consumer Protection in the 21st Century (October 2018), Senate Antitrust Subcommittee (September 2019) and the OECD Competition Meetings (June 2020) have all involved panel discussions or hearings on topics related to the acquisition of nascent or potential competitors.

3 https://www.economist.com/business/2018/06/02/american-tech-giants-are-making-life-tough-for-startups.

4 Hemphill, C. Scott & Tim Wu (2020), "Nascent Competitors," *University of Pennsylvania Law Review*, forthcoming.

5 The balances of these forces have been investigated empirically in, for example, Igami & Uetake (2020), who try to understand the effects of consolidation on innovation in the hard disk drive industry. Igami, Mitsuru, & Kosuke Uetake, "Mergers, Innovation, and Entry-Exit Dynamics: Consolidation of the Hard Disk Drive Industry, 1996–2016," Review of Economic Studies, forthcoming.

6 See, in particular, Section 2.4 of Federico et al. (2020), "The Misleading Economic Literature on Competition and Innovation." Federico, Giulio, Fiona Scott Morton & Carl Shapiro (2020), "Antitrust and Innovation: Welcoming and Protecting Disruption," *Innovation Policy and the Economy*, 20(1), 125-190.

7 For example, the UK's Furman report on "Unlocking Digital Competition" (2019) considered a presumption against acquisitions by large technology companies, although it ultimately rejected the change as appropriate. Cunningham et al. (2020) and Wollmann (2019 and 2020) provide evidence on problematic acquisitions being completed underneath existing notification thresholds. Cunningham, Colleen, Florian Ederer, & Song Ma (2020), "Killer Acquisitions," Yale University. Wollman, Thomas (2019), "Stealth Consolidation: Evidence from an Amendment to the Hart-Scott-Rodino Act," American Economic Review: Insights, 1(1), 77-94. Wollman, Thomas (2020), "How to Get Away with Merger: Stealth Consolidation and Its Real Effects on US Healthcare," NBER Working Paper.

While we believe that these issues are important, we also believe that the nature of the debate might lead people to believe that similar issues are raised by all preemptive merger cases, whereas we think that this is not the case. The main objective of this short article is to provide a typology of horizontal preemptive merger cases, distinguished by whether one or both firms have products that are on the market, and whether it is clear what the products that are in development would ultimately look like. While antitrust enforcement agencies have to answer the same question ("will this merger reduce future competition?") in each category, and the way that we divide a continuous spectrum of cases is necessarily a little arbitrary, we believe our classification is useful in explaining why fact patterns, types of evidence and, sometimes, opinions about these cases can differ.

We illustrate our discussion using recent preemptive merger cases brought by the US antitrust agencies, and the FTC in particular. In doing so, our article builds on discussions by Feinstein (2014),[8] Hoffman (2019),[9] and Moiseyev (2020).[10] However, we take the viewpoint of economists who are interested in the types of evidence and analysis that can be used to determine whether a merger will reduce competition relative to a but-for world where the proposed merger does not happen. We do not focus on more legal questions such as where to draw the line between, for example, "actual potential competition" and "perceived potential competition," or when it is appropriate to challenge a preemptive merger under Section 2 of the Sherman Act, rather than Section 7 of the Clayton Act. Our discussion will also highlight that, when analyzing future competitive effects, it is also necessary to assess possible efficiencies and the possibility that firms that are not party to the merger may also emerge as competitors.

II. DEFINITION OF PREEMPTIVE MERGERS

For the purposes of this article, we define a preemptive merger as a merger between firms whose broadly-defined "market positions," at the time of the transaction, are likely to understate how closely the firms would compete in the future absent the merger. We use the term market positions to capture the relative competitiveness of the firms based, for example, on the specifics of the products on the market, if any, and the costs that the firms incur to produce and distribute those products, as well as simple measures such as market shares.

We interpret our definition to include mergers involving two firms that already sell substitute products, where, without the merger, one or both of the firms is likely to improve its market position in the future due to falling costs or improved quality. We also interpret it as including mergers where one or both firms do not currently sell products of the type being considered, so do not currently have any sales, but have products that are in development. When one firm has a product in development, we may already see some effect of competition on prices, as customers anticipate how the market may change in the future, but we would typically expect (quality-adjusted) prices to fall more when both firms have products available for purchase.

The definition does not, however, require that preemptive mergers have net anticompetitive effects, as they might allow products to be brought to market more quickly, with higher probability or with lower cost. If the merger is reviewed, the likely net effect is something that the agency has to evaluate.

Our definition, because it requires that competition would likely increase absent the transaction, does, however, exclude some transactions that could be described as eliminating "potential competition." For example, suppose that the merging parties currently produce two different grades of a chemical that are sold to industrial customers for different end-uses. However, the firm making one grade could, if prices increased, switch some of its capacity to making the grade supplied by the other party. In this case, the merger might, because it eliminates a potential producer, have anticompetitive effects even though the products that the firms typically produce are not direct substitutes. As long as this situation is expected to remain stable absent the merger, then the merger would not count as preemptive for the purposes of our definition, although it could, of course, raise other types of competitive concern.

8 https://www.ftc.gov/system/files/documents/public_statements/forward-looking-nature-merger-analysis/140206mergeranalysis-dlf.pdf (accessed July 24, 2020).

9 https://www.judiciary.senate.gov/imo/media/doc/Hoffman%20Testimony2.pdf (accessed July 24, 2020).

10 https://www.competitionpolicyinternational.com/potential-and-nascent-competition-in-ftc-merger-enforcement-in-health-care-markets/.

III. TYPOLOGY

We now develop our typology of cases. The classification is organized so that it progresses towards cases where the parties are further away, in terms of time and the development of their products, from competing head-to-head in a relevant product market. There will obviously be cases that lie close to the boundaries of the different groups, and so are hard to classify, and some cases will fit into different types for different products, but we believe that the groupings can help to understand the types of issue and evidence that typically matter for an agency's assessment.

Type 1: Both parties already offer competing products, but one or both of them will likely become more significant competitors absent the merger.

This type of case is most clearly illustrated by examples where a large incumbent firm proposes to merge with a smaller rival that is growing as its technology improves or its distribution expands. From an economist's perspective, it may sometimes be easier to show competitive effects in these cases than in ones where market shares are stable, because it may be possible to identify how the incumbent has been changing its pricing, marketing or other strategies to address the growing threat to its customer base.

Three recent cases where transactions were abandoned after the FTC issued a complaint, CDK/Auto/Mate (complaint issued 2018), *Illumina/PacBio* (2019), and *Edgewell/Harry's* (2020), illustrate the issues and types of evidence that may be involved in this type of transaction. In the first case, CDK, one of the two leading suppliers of car Dealer Management Software ("DMS"), proposed to acquire Auto/Mate, which offered a competing platform but with lower prices, shorter contracts and more flexible integration with third-party applications.[11] Auto/Mate was experiencing double-digit annual sales growth, and documents revealed how CDK's customers used Auto/Mate to negotiate better terms and lower prices. In contrast, other small DMS suppliers displayed low growth and lacked certifications from major car manufacturers, making it unlikely that they would replace the competitive pressure from Auto/Mate. The FTC also found that the price that CDK was willing to pay for Auto/Mate was significantly above its initial valuation of the business, with the premium reflecting a desire to prevent Auto/Mate's acquisition by an alternative buyer that could accelerate its growth.

In *Illumina/PacBio* (2019), the FTC challenged the acquisition of Pacific Biosciences ("PacBio") by Illumina, the dominant supplier of systems for "next-generation DNA sequencing." At the time of the acquisition, PacBio, which supplied systems that could read longer gene sequences than Illumina's systems, had recently released a new system that would allow its customers to do so at lower cost, so that, based on documents from both parties, the acquisition was expected to prevent significant competition from emerging.[12]

In *Edgewell/Harry's* (2020), Edgewell, the maker of Schick and several other brands of wet shave razors, proposed to acquire Harry's, which, after developing a direct-to-consumer business, had successfully entered several brick-and-mortar retail chains and had just launched a range of shaving products for women. The FTC used the fact that Harry's retail entries had caused Edgewell and Procter & Gamble, the maker of Gillette razors, to lower their prices and increase marketing as evidence that the merger would substantially reduce both current and future competition.[13]

Type 2: One firm has a product on the market, and the other firm does not yet sell a product in the market but is about to do so.

In the first group of cases, one could use direct evidence about current competition, such as an incumbent losing customers, to argue that competitive effects at least as large would arise in the future absent the merger. In contrast, in the second type of case, the market share of one of the firms may be exactly, or close to, zero, so that additional projection is required. However, this does not imply that direct evidence of competitive effects is necessarily absent.

11 https://www.ftc.gov/system/files/documents/cases/docket_no_9382_cdk_automate_part_3_complaint_redacted_public_version_0.pdf.

12 "When the parties entered into the Acquisition agreement, PacBio expected its Sequel II instrument and related chemistry improvements to be an inflection point for the company. The Sequel II will expand the projects and use cases for which customers could use PacBio, and will position PacBio as a much closer alternative to Illumina." https://www.ftc.gov/system/files/documents/cases/d9387_illumina_pacbio_administrative_part_3_complaint_public.pdf (accessed July 21, 2020). The UK CMA also challenged the transaction.

13 https://www.ftc.gov/system/files/documents/cases/public_p3_complaint_-_edgewell-harrys.pdf (accessed July 21, 2020).

In *Polypore* (Commission decision 2010) the FTC challenged a merger that had been consummated in 2008 between Polypore, the leading US manufacturer of separators for use in a variety of types of flooded lead-acid batteries, and Microporous, another supplier. The Commission's final decision in the case, as well as the Commission's administrative law judge's ("ALJ") decision, distinguish, in a useful way, between how far the merger could be expected to reduce competition for different types of battery.

For starting, lighting and ignition ("SLI") batteries, the Commission decided that, even though Microporous had not won any significant contracts, "it had made meaningful progress towards supply arrangements with JCI and Exide, two of the largest automotive battery manufacturers in the world," and it had forced Polypore's Daramic division, whose sales accounted for 48 percent of the market, to lower its prices.[14] Therefore, the merger eliminated current competition, as well as future competition for SLI separators. On the other hand, the Commission decided, in contrast to the ALJ, that the merger did not lessen competition in the market for uninterrupted power supply batteries because, even though Microporous had a development program for this type of separator, its success was "in doubt" and there was no evidence of competitive responses from Daramic. Of course, while economists are well-placed to interpret competitive responses from rivals, they are more dependent on documents and technical experts to assess whether technological problems are likely to be overcome.

The fact that the merger was consummated also allowed the Commission to identify post-acquisition price increases for certain types of battery separator that were consistent with the elimination of competition and the absence of efficiencies that would offset the incentive to raise prices. It was also able to use the failure of other firms, including non-US suppliers, to initiate supply in the United States as evidence against Polypore's claims that entry would constrain prices.

In this category we would also include cases where one might not yet observe effects on prices, but there is a very clear expectation of what these effects may look like. For example, the *Ameristar/Pinnacle* (2013) casino merger involved a firm (Pinnacle) that operated the largest casino resort in St. Charles, Louisiana and a firm (Ameristar) that was constructing a similarly-large resort on an adjacent site.[15] Based on the observable effects of competition in other markets where both firms operated casinos and the fact that the "entry and competitive significance" of Ameristar's casino were virtually certain, the FTC predicted post-entry market shares, and argued that the transaction was presumptively illegal. The documentary evidence was also consistent with both firms' executives expecting substantial diversion between the casinos.

In some cases, the focus is on the question of whether the firm being acquired would find it profitable to enter absent the transaction, rather than whether it had the capability to do so. In 2015, the FTC challenged a proposed merger between Steris, one of two providers of contract radiation sterilization services, using gamma radiation, in the United States and Synergy, a European firm that was allegedly in the process of expanding its US business lines to provide similar services but using x-ray sterilization technology.[16] The FTC's evidence was based on details of Synergy's plans prior to the acquisition, which included assembling a team to run the x-ray business, site selection for x-ray sterilization facilities, and negotiations with potential customers, as well as the concentrated nature of the US market and the lack of substitutes. The District Court rejected the FTC's request for a preliminary injunction based, in part, on the testimony of Synergy executives that the proposed "business model failed every one of the metrics Synergy uses to rank capital investments."[17]

Type 3: One firm has a product on the market, and the other firm does not yet sell a product in that market but it may start to sell a well-defined product in the foreseeable future.

In this type of case, which is encountered in some branded or generic pharmaceutical mergers, the concerns are that either the merger will eliminate price competition if the product in development is brought to the market, or it will lead to the development of the second product being abandoned.

The FTC has required divestitures of products to address these concerns in a number of pharmaceutical mergers. For example, in *Bristol-Myers Squibb/Celgene* (2020), the Commission was concerned about a loss of future competition between Celgene's successful Otezla

14 https://www.ftc.gov/sites/default/files/documents/cases/2010/12/101213polyporeopinion.pdf (accessed July 21, 2020).

15 https://www.ftc.gov/sites/default/files/documents/cases/2013/05/130529pinnaclepart3cmpt.pdf (accessed July 21, 2020).

16 https://www.ftc.gov/system/files/documents/cases/150529sterissynergytro.pdf (accessed July 21, 2020).

17 Order Denying FTC's Motion for a Temporary Restraining Order and Preliminary Injunction, *FTC v. Steris Corp. & Synergy Health plc*, Docket No. 1:15-cv-1080 (N.D. Ohio Sept 24, 2015), p. 35.

treatment for moderate-to-severe psoriasis and BMS 986165, a psoriasis drug in development which, at the time of the transaction, had promising clinical trial results.[18] The Commission required the divestiture of Otezla, the existing product on the market, as a condition of the merger. In *GlaxoSmithKline/Novartis* (2018), the Commission required Novartis to sell its BRAF and MEK-inhibitor drugs in development out of concern that it would halt development when acquiring GSK's portfolio of cancer treatment drugs, some of which had identical mechanisms of action.[19] Novartis was also required to provide the purchaser of the drugs in development with transitional services to maximize the probability that the drugs would be brought to market. This highlights a common issue that arises in these cases, where the divestiture or licensing of assets on its own, without additional help, access to specialist workers or financial support, may not be enough to make it likely that the development project will not be adversely affected by either the merger or the remedy. In *Actavis/Watson Pharmaceutical* (2012), the Commission required divestitures of 14 products where either one or both firms had generic products that were in development.[20]

While pharmaceutical merger cases have rarely been litigated, the setting is attractive for the development of quantitative economic evidence. For example, the structure of the clinical trial process provides a framework for assessing how likely products are to be brought to market absent the merger,[21] while likely indications will affect diversion patterns amongst drugs. Empirical research provides estimates of the typical price effects associated with additional generic entry (for example, Olson & Wendling (2018)).[22] In addition, the clinical trial framework allows for an accurate accounting of which other firms also have development projects, as well as a source of estimates of whether they are equally or more likely to be successful. Therefore, even though each possible drug overlap will have unique features, there are reasonable ways to formulate quantitative predictions of anticompetitive effects even when one firm does not yet have a product on the market.

Of course, pharmaceuticals are also the setting where Cunningham et al. (2020) provide quite convincing empirical evidence that some acquired firms' pharmaceutical development projects have been eliminated when they overlap, in terms of therapeutic category and mechanism of action, with drugs that the acquiring firm already has on the market. They suggest that many acquisitions may be motivated primarily by the desire to eliminate future competition, in contrast to the discussed acquisitions where the overlaps were simply part of a much larger transaction, most of which did not raise competitive concerns. However, these results do not necessarily indicate a systematic failure of how the Commission assesses overlaps or effects on development incentives, as their results are most significant for transactions that are below standard HSR reporting thresholds, suggesting that many of these transactions may not have been scrutinized. This raises the important question of whether this is also true in other sectors, which has motivated on-going investigations into the nature of non-reportable transactions.[23]

Type 4: Both firms have well-defined products that are in development and not yet in the market

These cases are distinguished from the previous group by the fact that neither firm is yet selling some form of the product of interest. Pharmaceutical cases frequently fall in both Types 3 and 4. For example, in the *Actavis/Watson* (2012) case mentioned above, six of the drugs affected by the asset divestitures were under development by both parties, and in *Impax/CorePharma* (2016), the Commission required the divestiture of generic pilocarpine assets because Impax and CorePharma were the only firms that were close to having developed products that could enter a market in which there were only two other existing generic suppliers.[24] For these transactions, the fact that there are well-established estimates for how additional generic entrants affect prices is a helpful part of the analysis.

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18 https://news.bms.com/press-release/bristolmyers/bristol-myers-squibbs-novel-oral-selective-tyk2-inhibitor-delivered-signi (accessed July 21, 2020).

19 https://www.ftc.gov/system/files/documents/cases/150408novartiscmpt.pdf (accessed July 21, 2020).

20 https://www.ftc.gov/sites/default/files/documents/cases/2012/10/121015watsonactaviscmpt.pdf and https://www.ftc.gov/news-events/press-releases/2012/10/ftc-places-conditions-watson-pharmaceuticals-proposed-acquisition (accessed July 21, 2020).

21 Academic research (for example, Abrantes-Metz et al. (2005), and DiMasi et al. (2016)) has documented some important facts about both the costs, and the probabilities of success in different stages clinical trials, and how this differs across types of drug category, such as small molecules and biologics. Abrantes-Metz, Rosa M, Christopher Adams, & Albert Metz (2005), "Pharmaceutical Development Phases: A Duration Analysis," Journal of Pharmaceutical Finance, Economics and Policy, 14(4), 19-41. DiMasi, Joseph, Henry Grabowski, & Ronald Hansen (2016), "Innovation in the Pharmaceutical Industry: New Estimates of R&D Costs," Journal of Health Economics, 47, 20-33.

22 Olson, Luke & Brett Wendling (2018), "Estimating the Causal Effect of Entry on Generic Prices Using Hatch-Waxman Exclusivity," Review of Industrial Organization, 53, 139-172.

23 For example, the FTC requested information on non-reportable transactions as part of a 6(b) study of several technology and platform companies (https://www.ftc.gov/reports/6b-orders-file-special-reports-technology-platform-companies). Wollmann (2020) also finds evidence of anticompetitive effects for dialysis center mergers, which appear to be non-preemptive, below HSR reporting thresholds.

24 https://www.ftc.gov/news-events/press-releases/2015/03/ftc-requires-divestitures-connection-impax-laboratories-incs (accessed July 21, 2020).

In these cases, it is sometimes necessary to understand the balance between the anticompetitive incentive that will exist to drop one of the development projects, and the possible gains that may result from combining the projects which make it more likely that at least one product will be brought to market. In the case of generic pharmaceuticals, where the ultimate products would be identical, the anticompetitive incentive may be especially strong. Yet there also are cases where agencies have recognized the possible benefits of consolidation. For example, the 2006 Horizontal Merger Commentary[25] gives the example of the investigation into the consummated *Genzyme/Novazyme* merger. The investigation was closed "in part, [due] to the evidence supporting the claim that the merger would accelerate development of" drugs that were designed to treat Pompe's disease, a rare but fatal condition.[26]

In Type 4 cases, product market competition may be further away, and a review has to take into account a number of possible outcomes. For example, the best outcome would be that both products are developed and brought to market by two separate firms who will then compete aggressively on pricing. On the other hand, it is also possible that, without a merger, no products will make it to market. Therefore, an assessment has to balance how the merger will affect the probabilities of these different outcomes.

There are also cases where concerns about the development of future products by both parties are combined with concerns about current product market competition. For example, the Department of Justice's 2016 complaint against the proposed *Halliburton/Baker Hughes* transaction argued that, in addition to competing for current business, the Big 3 oil services firms (the parties and Schlumberger) "compete to win the business of exploration and production ("E&P") companies and to develop next generation technologies that will allow them to drill deeper and operate in ever-more challenging conditions."[27] The complaint described, for example, the market for integrated refracturing services as a nascent market, where only the Big 3 firms could be expected to develop a complete solutions package. In this case, the Department of Justice framed its case in terms of prior competition to develop solutions for customers, for example, for drilling in extreme deepwater, as well as their market shares in currently providing the complicated products.

Cases that fit into the earlier types can also have elements of this type when it is expected that both firms will continue to improve their technologies. For example, the UK's Competition and Markets Authority's ("CMA") preliminary findings on *Illumina/PacBio* argued that future innovation would be important, and, in particular, would result in short and long-read gene sequencing technologies being likely to compete more directly in the future.[28] This view required both an assessment of the technologies that the parties would develop, but also the needs of customers engaging in areas of research that were currently evolving.

Type 5: Both firms are active in developing products, but it is unclear what form those products would ultimately take.

The final type of case involves cases where both parties are in the process of developing new products, but it is unclear what form those products might take, and therefore how closely those products would compete even if the development projects are successful. These cases may arise in settings where technology or the needs of customers is changing, and all firms, including the parties, are trying to develop solutions.

The FTC's decision in *Nielsen/Arbitron* (2013) provides an example of this type of preemptive merger.[29] Nielsen and Arbitron were near-monopoly providers of television and radio ratings respectively, and did not compete directly for the business of advertisers and advertising agencies. However, the FTC's complaint expressed the concern that the merger would eliminate competition in the development of a "national syndicated cross-platform audience measurement service because only Nielsen and Arbitron maintain large, representative panels capable of measuring television with the required individual-level demographics, the data source preferred by advertisers and media companies." The Commission allowed the merger to proceed, but required the merged firm to divest and license certain assets to comScore, which had partnered with Arbitron in a project to measure audiences across multiple media platforms.

25 https://www.ftc.gov/sites/default/files/attachments/mergers/commentaryonthehorizontalmergerguidelinesmarch2006.pdf (accessed July 21, 2020).

26 In 2019, the Commission also concluded that the merger of Roche and Spark would not reduce the incentives of the merged firm to develop either Spark's development of a gene therapy treatment for hemophilia A. https://www.ftc.gov/system/files/documents/public_statements/1558049/1910086_roche-spark_commission_statement_12-16-19.pdf (accessed August 27, 2020).

27 https://www.justice.gov/atr/file/838661/download (accessed July 21, 2020).

28 https://assets.publishing.service.gov.uk/media/5db1b98a40f0b609ba817d38/Illumina_Pacbio_-_ProvFindings.pdf (see, in particular, Chapter 8).

29 https://www.ftc.gov/system/files/documents/cases/140228nielsenholdingscmpt.pdf (accessed July 21, 2020).

Commissioner Wright dissented from the Commission's decision in *Nielsen/Arbitron* on the grounds that, without information or predictions on factors such as the substitutability of different products, "our current economic toolkit provides little basis from which to answer accurately the question of whether a merger implicating a future market will result in a substantial lessening of competition."[30] This view highlights the key issue for these types of cases, which is that predictions about future competition absent the merger require not only an analysis of future incentives, which is something that is typically done in prospective merger analysis, but also much greater speculation about how early-stage technologies, and the demand of customers, are likely to develop. For example, one might question whether "national syndicated cross-platform audience measurement services" would ultimately form a relevant market, and whether firms that developed products in this space would necessarily cover the same set of platforms, rather than offering sets that might be complementary.

The differences between this fifth type of case and the third and fourth types of cases are really matters of degree. In Type 3 and Type 4 cases, one needs to take a view of whether particular well-defined projects are likely to be successful, and it is at least plausible that the documentary evidence may provide relatively consistent evidence on this subject. On the other hand, for Type 5 transactions, a greater degree of speculation about the broad capabilities of products that will be developed is required, and it is more likely that documents may disagree about which kinds of development are more promising or likely. For example, there may be dissenting views about whether the firms really would develop products that would complete closely for similar customers if they were brought to market. However, in the case of *Nielsen/Arbitron*, the fact that the parties were the only firms currently with broad ratings panels was one known factor that the Commission was able to use to argue that these firms were especially well-positioned to develop new, competing products.

IV. CONCLUSION

We have provided a typology of different types of merger cases that involve firms that might be expected to compete more intensely in the future absent the transaction, trying to make useful distinctions based on the types of evidence that might be used and the degree of speculation that is required about what may happen to technology, as well as incentives, in the future.

Cases requiring more speculation also present challenges when trying, several years later, to infer whether enforcement decisions in individual cases were correct because some speculation will also be required to determine what would have happened if different enforcement decisions had been made. For example, consider two cases where a merger is allowed to proceed. If a merger is consummated and a product in development is not brought to market, then it may well be unclear whether this was because of how the merger changed the incentives of the merging firm, resulting in a killer acquisition, or simply because of the type of failure that could have occurred absent an acquisition. On the other hand, when the merged firm successfully develops multiple products which gain large market shares, it may appear that the merger contributed to market power, whereas, of course, an alternative interpretation is that the agencies correctly identified that, in this particular case, the proposed transaction resulted in a firm with greater capabilities to develop successful products. Therefore, we look forward to seeing more research which provides agencies with tools to assess preemptive mergers both prospectively and retrospectively.[31]

30 https://www.ftc.gov/sites/default/files/documents/cases/2013/09/130920nielsenarbitron-jdwstmt.pdf (accessed July 21, 2020).

31 Federico, Giulio, Fiona Scott Morton, and Carl Shapiro (2020), "Antitrust and Innovation: Welcoming and Protecting Disruption," *Innovation Policy and the Economy*, 20(1), 125-190.

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