Towards An Evidence Based Framework for Enforcement of Vertical Mergers

By Gopal Das Varma

After a hiatus of several decades, the government has tried three prominent vertical merger cases in the past four years. These are the DOJ's effort to stop the acquisition of Time Warner programming by AT&T in 2018 (*AT&T*), the FTC's effort to stop the acquisition of Grail by Illumina in 2021 (*Illumina*) and the DOJ's effort to stop the acquisition of Change Health Care by United Health Group in 2022 (*UnitedHealth*).

In each case, the government's central allegation has been founded on the theory that the merged company will allegedly acquire the "ability and incentive" to use its control of a critical input to disadvantage its rivals. Disadvantaging rivals could take many forms, including raising rivals' cost of the input, the full foreclosure of rivals, degrading the quality of input sold to rivals, abusing business sensitive information about rivals with the effect of slowing down rivals' innovation, denying necessary technical assistance to rivals, etc.[1]

Proof of the ability to foreclose is typically offered by demonstrating that there are no adequate substitutes of the input, i.e., that the input supplier has market power. On the other hand, the government's analysis of whether a merged company will have the incentives to foreclose its rivals is typically undertaken by a forward-looking (prospective) analysis of the short-run economic gains and losses to the merged company from foreclosing its rivals.[2] Although the government's

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[1] In *AT&T*, the government alleged that the merger, among other things, will likely lead to an increase in the cost of Time Warner programming for rivals of AT&T's satellite TV service DirecTV, leading to a lessening of competition in the market for video programming distribution. *See* Complaint, United States v. AT&T, Inc., 310 F. Supp. 3d 161 (D.D.C. 2018) (No. 1:17-CV-02511), 2018 WL 3752091[hereinafter AT&T Complaint]. In *Illumina*, the government alleged that post-acquisition, Illumina will likely raise the price of its NGS machines and reagents, delay their delivery, degrade the quality of service or deny assistance needed for gaining FDA approval to Grail's rivals, leading to a lessening in competition for development of Multi-Cancer Early Detection ("MCED") tests. Complaint, In the Matter of Illumina, Inc., and Grail, Inc., FTC Docket No. 9401 (Mar. 30, 2021) [hereinafter Illumina Complaint]. In *UnitedHealth* the government alleged, among other things, that the merger will give UnitedHealth access to sensitive business information of rival insurers leading to loss of innovation incentives of rivals. The government also alleged that the merger will give the incentives and ability to United to deny innovative products developed by Change to its rivals, leading to a lessening of competition in the market for the sale of commercial health insurance to national accounts and large employers. Complaint, United States v. UnitedHealth Grp. Inc. (No. 1:22-CV-0481) [hereinafter UnitedHealth Complaint].

[2] A merged company will have the incentive to foreclose a rival if the foregone profits from selling the input to that rival are less than the profits that the merged company can earn by way of additional demand for its product created by diversion of the lost customers of the rival to the merged company. The analysis is frequently referred to as vertical math. See, e.g., the Court's description of the government expert's vertical math in UnitedHealth: "This claim is based on Dr. Gowrisankaran's 'vertical math' calculations, which found that if United forgoes all sales that loss would likely be offset by downstream gains in commercial health insurance markets." Slip Opinion, United States v. UnitedHealth Grp. Inc. (No. 1:22-CV-0481), 2022 U.S. Dist. LEXIS 170934 [hereinafter UnitedHealth Opinion]. In some cases, the government's concern is not full foreclosure but an increase in the price of the input to rivals ("raising rivals' cost"). The predicted price increase is closely related to the extent by which the merger increases the gains to the merged company from full foreclosure ("disagreement payoff"). Overall, the incentive calculations are driven by the change in the objective of the merging companies from own profit maximization (before the merger) to joint profit maximization (after the merger).

incentive analysis has a sound basis in economic theory and logic, the courts have been skeptical about enjoining mergers based on a prospective theory of economic incentives. In *AT&T*, *Illumina*, and *UnitedHealth*, the courts rejected the government's affirmative (*prima facie*) case, criticizing its incentive analysis as not grounded in actual pre-merger evidence.[3]

Courts prefer actual evidence over prospective theory

A brief analysis of the opinions may be helpful to recognize the courts' preference for actual evidence over a theory of incentives. The incentive analysis presented by the government typically takes the pre-merger status quo as given and does little to delve into the economic incentives that shaped the pre-merger outcome. For example, in *AT&T* the government's expert analysis did not consider whether and by how much prior acquisitions in the video programming industry may have led to raising of rivals' costs.[4] However, the parties' expert—through a retrospective analysis of historical data—argued that there is no actual evidence that prior vertical acquisitions in the industry had led to significant cost increases for rivals. The government argued that the parties' expert analysis was inappropriate because, among other things, some of the prior mergers were approved subject to contractual remedies that likely prevented the merged entities from raising rivals' costs. Notwithstanding the government's claim that the historical data is potentially misleading, the court preferred to rely on the parties' retrospective empirical analysis instead of the government's prospective theory of bargaining leverage.[5]

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In *UnitedHealth*, the government's theory was that the merger—by giving United Health Group access to Change Healthcare's third-party claims editing data—would likely create a future disincentive for its rivals to innovate. The court noted that the government presented no actual evidence that United Health Group was already using data to disadvantage its rivals, even though United already owned the claims-editing business of Optum and so already had access to business sensitive claims-editing data of its rivals.[6] Here again, the court looked at whether actual historical evidence supports the government's allegation instead of relying on the government's prospective analysis of incentives.

Similarly, in *Illumina* the court found that the government's incentive analysis ignored the fact that Illumina, by virtue of its partial ownership, was already entitled to 12% of Grail's profits pre-merger.

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[3] In the UnitedHealth Complaint, the government alleged one horizontal theory of harm and two distinct vertical theories. The Court ruled that the government had proved its horizontal theory but failed to take into account the remedial divestiture proposed by the parties, which in the Court's opinion resolved the potential horizontal concern. The two vertical theories were rejected by the Court. See UnitedHealth Opinion (No. 1:22-CV-0481).

[4] While describing the economic model of bargaining leverage in AT&T, the government's expert noted that, "One of the virtues of the methodology I am using is that my findings relate to *the effect of the merger on the negotiated price*, not the pre-merger or post-merger level of that price standing in isolation." Expert Report of Carl Shapiro at n.170, United States v. AT&T, Inc., 310 F. Supp. 3d 161 (D.D.C. 2018) (No. 1:17-CV-02511), 2018 WL 3752091 (*emphasis added*).

[5] "To sum it up, neither the Government nor Professor Shapiro has given this Court an adequate basis to decline to credit Professor Carlton's econometric analysis. And that analysis, according to Professor Carlton, definitively shows that prior instances of vertical integration in the video programming and distribution industry have had no statistically significant effect on content prices." United States v. AT&T Inc., 310 F. Supp 3d 161 (D.D.C. 2018). See also decision by the U.S. Court of Appeals, United States v. AT&T, Inc., 916 F.3d 1029 (D.C. Cir. 2019).

[6] UnitedHealth Opinion at 37 (No. 1:22-CV-0481) ("This matters for two reasons. First, if United is already in possession of data from which competitively sensitive insights could be gleaned and shared with UHC, then there has to be something about the proposed acquisition that would change United's ability and incentive to do so with Change's data. And second, if the ability and incentive already exist, then present circumstances can serve as a natural experiment for what might occur in the post-acquisition world. Under Section 7 case law, courts must consult pre-merger conduct and history in making their predictive judgment about the state of post-merger competition.") (citations omitted).

As a result, under the government's incentive theory, Illumina already had an incentive to disadvantage Grail's rivals, even if incrementally. But the government presented no actual evidence that Illumina was already disadvantaging Grail's rivals; only a prospective economic analysis that sought to prove that full ownership of Grail would create such incentives for Illumina.[7]

Is harm to rivals the same as substantial lessening of competition?

In *Illumina*, setting aside Illumina's pre-existing partial ownership of Grail, the court also questioned the government's claim that a showing of ability and future incentive to harm rivals is sufficient for the government to establish that a merger will substantially lessen competition.[8] The Court noted that merger analysis is ultimately about protecting competition, not competitors. Thus, a showing of likely harm to rivals by itself may not be enough for the government to establish its *prima facie* case.[9] Although the Court did not elaborate, as a matter of economics, a vertical merger that results in an increase in rivals' costs may not necessarily lessen competition. On the one hand, an increase in input prices paid by rivals can impair rivals' competitiveness in the downstream market. On the other hand, having to compete against a more efficient rival (the merged entity) can increase rivals' incentives to compete more vigorously than they did pre-merger. (The merged entity may be more efficient than the merging downstream firm because of merger-induced efficiencies.) In any given merger, the net of these two opposing effects determines whether an increase in input prices paid by rivals leads to a lessening of competition.[10]

Suitable natural experiments may not be available for many vertical mergers

Not all vertical mergers may present the government with a historical event that is comparable to the merger on hand and whose analysis can serve as a source of actual evidence for its incentive theory. The *UnitedHealth* Opinion offers a more general preview of the type of evidence courts are likely to expect from the government in future vertical merger cases. "The Court must make a 'predictive judgment' about the competitive effect of the proposed merger, and that prediction must be based on "real-world evidence related to the 'structure, history [,] and probable future' of the relevant markets."[11] In other words, the government's theory of post-merger incentives must be consistent with, and based upon, the incentives and observed actions of upstream and downstream firms that

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[7] Initial Decision at 175, In the Matter of Illumina, Inc., and Grail, Inc., FTC Docket No. 9401 (Sept. 9, 2022) [hereinafter Illumina Decision] ("In summary, Complaint Counsel and Dr. Scott-Morton fail to account for Illumina's pre-merger stake in Grail and make unwarranted assumptions in describing the alleged changes in Illumina's incentives.").

[8] Illumina Decision at 168, FTC Docket No. 9401 ("Complaint counsel contends that to meet its *prima facie* burden to show that a merger is likely to substantially lessen competition, it is sufficient to prove that Illumina has an ability and incentive to take action to harm Grail's rivals post-Acquisition. . . . Such a minimalist formulation of the *prima facie* burden is unsupported by legal precedent.") (citations omitted).

[9] Illumina Decision at 170, FTC Docket No. 9401.

[10] In *AT&T*, the government did attempt to show that even after accounting for efficiencies, the magnitude of the likely increase in the cost of Turner programming to AT&T's rivals will lead to an increase in the average cable subscription price paid by households. An increase in average prices paid by consumers may constitute harm to consumers and, by implication, a lessening of competition. However, the Court rejected the incentive underpinnings of the government's bargaining leverage model, obviating the need for it to reach an opinion as to whether a showing of increase in consumer prices is adequate to infer loss of competition. Expert Report of Carl Shapiro, U.S. v. AT&T, Inc., 310 F. Supp. 3d 161 (No. 1:17-CV-02511).

[11] UnitedHealth Opinion at 49 (No. 1:22-CV-0481).

shape the pre-merger outcome. The government's approach of using a minimal set of pre-merger data points to predict post-merger incentives appears to have fallen short of this higher bar.[12]

A framework based on actual evidence

It may be helpful to briefly review the government's typical approach in horizontal mergers, where the government has historically been more successful than in recent vertical mergers. In a horizontal merger, the government's analysis starts with an evaluation of pre-merger competition between the merging firms—competition that stands to get lost as a result of the merger. Actual evidence of pre-merger competition between merging firms can take many forms, including quantitative evidence about how often the firms are the top two choices of customers; anecdotal evidence about how often and to what extent they actually undercut each other's prices; testimonies from customers about how often they played the two firms off of each other to secure price discounts; regular course of business party documents that memorialize competitive intelligence gathered and used by the firms to compete with each other, etc. When there is sufficient actual evidence that the parties are a significant competitive constraint on each other, that evidence generally helps the government to define a relatively narrow market in which the parties' shares exceed the thresholds that make a merger presumptively anti-competitive. This structural presumption is often accompanied by some forward looking incentive analysis of likely competitive effects, for example, a merger simulation. The pre-merger competition between the parties—competition that stands to get lost after the merger—provides a context for the incentive analysis of likely effects. This approach has proved to be a successful playbook for the government in its efforts to prosecute horizontal mergers.[13]

The absence of direct competition between the parties in a vertical merger rules out the use of that same exact playbook in vertical mergers. However, one way to mimic the horizontal merger playbook can be to look for evidence about how the pre-merger conduct of the independent input supplier—conduct that may change after the merger—is serving to keep the downstream market competitive.

Economic theory suggests that an input supplier with market power will seek to create competition between downstream firms. Doing so will increase its share of rents in the supply chain. The more competitive the downstream market, the less the rents earned by downstream firms and, thus, the greater the rents that can be captured by the upstream input supplier by appropriately setting its price. Thus, economic theory offers a basis by which to expect that an independent upstream input supplier with market power may not act as a passive entity but instead seek to take deliberate actions to make the downstream market competitive.

Actual evidence of pre-merger actions by the upstream input supplier—and their effect on competition in the downstream market—can then provide the context on which to ground a forward-looking incentive analysis that shows that the loss of independence of the input supplier is likely to lead to a lessening of competition in the downstream market. The government's outsize

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[12] A minimalistic vertical math (or a Nash Bargaining analysis) requires only the following information: pre-merger prices, the pre-merger profit margin earned by the upstream merging firm, the pre-merger profit margin earned by the downstream merging firm and some measure of diversions from a fully foreclosed rival to the downstream firms, including diversion to outside goods. When diversion is assumed to be proportional to shares, this amounts to knowing the market shares in the downstream market and estimating or making some assumption about the aggregate elasticity of demand of downstream products.

[13] Some prominent examples of horizontal mergers during the last decade in which the government employed this general framework include proposed mergers between H&R Block and Tax Act (2011); GE and Electrolux (2014); Sysco and U.S. Foods (2015); Aetna and Humana (2016), Anthem and Cigna (2016); and Staples and Office Depot (2016).

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An example of such action by the upstream firm could be a policy of customer neutrality. Customer neutrality could involve same or similar terms (prices, delivery, etc.) to all downstream firms; same level of technical assistance to all downstream firms; making newer versions of the input compatible with technologies used by every downstream firm, etc. Actions that serve to make all buyers of the input equally situated can lead to more intense competition between them than when some receive more preferential terms than others. Needless to say, there could be even more powerful evidence of the role of an independent input supplier in promoting competition between downstream firms. For example, the independent input supplier might be actively sponsoring entry by offering preferential terms to potential entrants, such as lower prices or preferential allocations.

The exact actions that are being taken by an input supplier with market power to foster competition amongst its buyers will likely vary from one industry to another. They need not always match the examples described above. Only a fact-intensive investigation can reveal whether there is evidence in pre-merger conduct that shows that the input supplier is actively promoting competition between downstream firms. While this is a higher bar for the government to meet, recent court opinions show that without actual evidence, a purely forward-looking theoretical analysis about change in incentives may not be sufficiently persuasive.

I illustrate the framework by contrasting two recent vertical mergers that were challenged by the government—the FTC's case to block the acquisition by NVIDIA of Arm and the DOJ's case against AT&T. In each case, a forward-looking incentive analysis indicated that the merger would likely engender the incentive for the merged company to foreclose its rivals. However, the publicly available information about Arm's pre-merger conduct lends itself to a narrative that its actions allegedly were serving to keep the downstream market competitive. By contrast, the actual available evidence in AT&T is arguably not as persuasive in that regard.[14]

FTC's challenge to Nvidia's proposed acquisition of Arm

In late 2020, Nvidia proposed to acquire Arm, a supplier of chip design architecture.[15] Arm is a relatively recent entrant in chip design architecture, a market that has long been dominated by the incumbent Intel with its x86 architecture. One advantage of Arm is that chips designed on the Arm architecture consume less power relative to x86, making Arm the preferred architecture for designing CPUs where low power consumption is a desired goal, e.g., in edge devices in the IoT like automotive driver assistance systems ("ADAS"). Low power consumption is also a desired objective of semi-conductor chips used in data servers (host CPUs and software programmable smart network interface controllers ("smart NICs")). This allegedly gave Arm market power in chip design architecture for such devices.[16] Nvidia licensed the Arm architecture to design its ADAS, server host CPU, and smart NICs. So did many of Nvidia's rivals.

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[14] I use the contrast between these two cases merely for illustrative purposes. The contrast is by no means my assessment of the overall merits of the government's cases.

[15] In December 2021, following its investigation, the FTC filed a Complaint to oppose the merger. Shortly afterwards in February 2022 the Parties abandoned the merger, obviating the need for a trial. In the Matter of Nvidia Corp., Softbank Grp. Corp., and Arm, Ltd., FTC Docket No. 9404, available at: https://www.ftc.gov/legal-library/browse/cases-proceedings/2110015-nvidiaarm-matter.

[16] Complaint at ¶¶ 37–38, In the Matter of Nvidia Corp, Softbank Grp. Corp., and Arm, Ltd., FTC Docket No. 9404 [hereinafter Nvidia Complaint] (Dec. 2, 2021).

Arm adopted a customer neutral licensing policy.[17] Neutrality encompassed both prices (license and royalty fees) as well as technical assistance to customers for them to use the Arm architecture to design their chips. A potential explanation for Arm's customer neutral licensing is that, as a nascent technology, Arm's objective is to rapidly increase its adoption by allowing its licensees to compete against each other on an equal footing. Competition between equally situated licensees can be expected to lead to greater output of chips, in turn resulting in greater adoption of Arm and rapid development of the Arm ecosystem.

Notwithstanding its alleged market power, Arm's royalty fees were relatively low. FTC's 2021 year in review suggests that Arm's low-price strategy may potentially have stemmed from alleged network effects in chip architecture ecosystems: by keeping its royalty rate low, Arm intended to facilitate rapid development of the Arm ecosystem by encouraging producers of hardware and software to develop Arm compatible products.[18] (Software written for a chip that is based on the Arm architecture cannot be run in its native form on a chip based on the x86 architecture.[19]) Economists refer to such pricing as "penetration pricing"—low and uniform pricing that is employed by an entrant to encourage adoption of its product in order to catch up with and surpass an established incumbent.[20]

Taken together, these facts suggest that Arm's pre-acquisition conduct—driven by its own long-term objective of growing the Arm ecosystem—was allegedly serving to keep the downstream market for semiconductor chips competitive through its customer neutral licensing policy and low royalty rates. A forward-looking incentive analysis that sought to establish that its acquisition by Nvidia would have potentially created an incentive for the combined company to foreclose Nvidia's rivals would have had a firm foundation in Arm's pre-acquisition conduct. The FTC's own forward-looking analysis found that it would likely be profitable for Nvidia to foreclose some of its rivals from Arm licenses after the acquisition.[21]

Based on the FTC's narrative, it is a reasonable conjecture that after Arm—as an independent company—developed its ecosystem sufficiently, it would no longer have had the incentive to keep its royalty rates low. At the same time, if an independent Arm were to raise its royalty rate in the future, it would have done so with the objective of maximizing its own profits, without the exclusionary intent that Nvidia allegedly would have had.

DOJ's challenge to AT&T's acquisition of Time Warner programming

In *AT&T*, the DOJ alleged that Time Warner's programming is a "must have" for Multi-channel Video Distributors ("MVPD").[22] The government alleged that the acquisition would give the combined

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[17] *Id.* at ¶ 23.

[18] Michael Vita et al., Economics at the FTC: Estimating Harm from Deception and Analyzing Mergers, FTC Bureau of Economics Paper at pp. 23-26 [hereinafter FTC Paper] (Aug. 17, 2022), available at: https://assets.researchsquare.com/files/rs-1953929/v1_covered.pdf?c=1660749367.

[19] Nvidia Complaint at ¶ 33, FTC Docket No. 9404.

[20] An alternative explanation for Arm's low royalty rates that may have been inconsistent with post-merger harm is that it potentially lacked market power. According to the FTC's Complaint however, other chip design architectures were inadequate alternatives to Arm, giving Arm sufficient market power. Nvidia Complaint, ¶¶ 34–36, FTC Docket No. 9404.

[21] FTC paper at 26. To be precise, the FTC's economic analysis about the Nvidia-Arm matter concluded that so long as Nvidia had a share of more than 3% in the relevant markets, it would have likely found it profitable to foreclose its rivals from accessing Arm architecture.

[22] AT&T Complaint at 24, 310 F. Supp. 3d 161 (No. 1:17-CV-02511).

company the incentive and ability to raise programming fees of Time Warner video to rival MVPDs, thereby lessening competition in the market for multi-channel video distribution.

As a general matter, video programmers and MVPDs engage in bilateral bargaining over the per subscriber per month ("PSPM") fee to be paid by the MVPD to carry the programmer's content. MVPDs derive their bargaining power from being able to offer distribution of the programmer's video content to consumers whereas video programmers derive their bargaining power from producing high quality video programs that consumers want to watch. For any given programmer, the more subscribers a MVPD has, the higher is its bargaining power because it can offer greater consumer reach for the programmer's content. Thus, larger MVPDs typically get lower PSPM rates relative to smaller MVPDs.[23]

Prior to the emergence of internet based over the top video distributors ("OVD") like Netflix, the larger MVPDs—incumbent cable operators and satellite services—used to monetize their relatively greater bargaining power in the form of lower PSPM. The relatively lower PSPM rates served as a barrier for competing smaller cable operators—who lacked the scale needed to negotiate such low PSPM rates—from entering or expanding. After the emergence of the competitive threat from OVDs, larger MVPDs started taking their gains from greater bargaining power through a combination of lower PSPM and various restrictions preventing video programmers from offering their content to OVDs. Restrictions typically consisted of "windowing," e.g., no current season shows of serialized content to be supplied by the programmers to OVDs, etc. In these ways, notwithstanding a programmer's "must have" video content (and thus its alleged market power), large incumbent MVPDs created barriers to entry and expansion for OVDs as well.

Large incumbent MVPDs also have MFN clauses in their contracts with programmers to ensure that a programmer does not offer better terms to smaller MVPDs or OVDs. Contracts between MVPDs and programmers are often multi-year in duration.[24]

Based on the industry facts described above, it is difficult to construct a narrative that an independent programmer like Time Warner was keeping the cable distribution industry competitive through its input prices. It likely did not offer equal PSPM to aspiring entrants relative to the large incumbent MVPDs. Nor could it offer its video content to OVDs in a timely manner so that OVDs could compete against incumbent cable distributors on an equal footing. Even if independent Time Warner had the incentive to keep the distribution of its content competitive, it likely did not have the ability to do so. Yet, the government's forward looking incentive analysis—using a model

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[23] See, e.g., Memorandum Opinion and Order at ¶216, In the Matter of Charter Commc'ns, Inc. Time Warner Cable, Inc., and Advance/Newhouse P'ship, Federal Communications Commission (May 10, 2016) ("Consistent with these conclusions, the Applicants state that Time Warner Cable, negotiating on behalf of *12.8 million video subscribers, pays approximately* [BEGIN HIGHLY CONF. INFO.] [END HIGHLY CONF. INFO.] *percent less for programming than Charter, which serves approximately 4.2 million video subscribers*. The Applicants assert that applying Time Warner Cable's generally lower programming rates to Charter's video subscribers post-transaction would generate approximately [BEGIN HIGHLY CONF. INFO.] [END HIGHLY CONF. INFO.] million in cost savings by the third year after closing, or roughly [BEGIN HIGHLY CONF. INFO.] [END HIGHLY CONF. INFO.] per Charter subscriber per month. *In addition, the Applicants contend that these estimates are "conservative" because they account only for differences in scale between Charter and Time Warner Cable and do not assume any additional savings that could be associated with the greater scale of New Charter versus Time Warner Cable*.) (*emphasis added*).

For a background on the relationship between bargaining power and size in the video programming industry, see Rogerson, W. P. (2019). Economic theories of harm raised by the proposed comcast/TWC transaction. In J. E. Kwoka Jr. & L. J. White (Eds.), *The antitrust revolution* (7th ed.). Oxford University Press [hereinafter Rogerson paper]. Rogerson describes the fact that larger MVPDs get lower PSPM as "a stylized fact" of the video programming industry. See ¶ 24.

[24] Rogerson paper at footnote 33.

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of bargaining leverage that is well established in economics—concluded that rivals of the merged firm would likely face increases in their PSPM of Time Warner content after the merger.[25]

The Government's future vertical merger enforcement can benefit by offering an evidence based context for its analysis of incentives and ability

To be sure, forward looking economic analyses of incentives are necessary to determine whether, and to what extent, a vertical merger may lead the merged company to seek to disadvantage its rivals, leading to a lessening of competition. At the same time, recent court decisions make it clear that a forward-looking analysis of incentives by itself may not be sufficient for the government to carry its burden. Analysis of incentives needs to follow naturally from a holistic evaluation of available evidence with regards to the incentives and ability of the upstream input supplier and its exercise of market power pre-merger.

If there have been prior vertical mergers in the industry, then evidence from a retrospective analysis of such past mergers must be consistent with the government's allegations regarding the merger at hand (unless there are strong reasons to distinguish prior mergers from the merger at hand). Similarly, if there are firms in the industry that are already vertically integrated, then the government will need to analyze whether such firms have been disadvantaging their rivals and, if so, use such evidence to contextualize its allegations regarding the merger on hand. Regardless of whether there have been prior mergers or prior existence of vertically integrated firms—each of which can potentially permit retrospective analyses—the government's case may benefit from evaluating any available evidence that first serves to establish that the independent input supplier's actions—actions that may likely change after the merger—are keeping the pre-merger downstream market competitive. Such evidence—even if descriptive in nature—can set the stage for a forward-looking incentive analysis that formalizes the natural conclusion that the merger is likely to lessen competition by altering the input supplier's actions to favor its merging partner. Without that context, a forward-looking incentive analysis runs the risk of being viewed as an out-of-context math exercise that, despite its sound basis in economic theory, fails to address a court's fundamental curiosity about how the independence of the input supplier is creating competition in the downstream market that the government alleges would be lessened by the merger. ●

[25] Expert Report of Carl Shapiro, U.S. v. AT&T, Inc., 310 F. Supp. 3d 161 (No. 1:17-CV-02511).