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Joshua D. Wright
Federal Trade Commission

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I. INTRODUCTION

This article is based on a presentation of remarks presented on February 23, 2013 at the inauguration of the ICT Competition Laboratory, the Competition Law Center, Beijing, China. This represents my first public statements as a Commissioner and generally concerns antitrust in high-tech markets. Specifically, I would like to discuss the concept of "evidence-based" antitrust enforcement, the importance of its application to the technology sector, and some recent experiences involving the Federal Trade Commission's enforcement efforts in high-tech markets.

II. EVIDENCE-BASED ANTITRUST

"Evidence-based antitrust," expressed simply, is the common-sense dictum that antitrust agencies can and should make enforcement decisions based upon sound economic and empirical foundations.[2] This focus requires three methodological commitments from antitrust institutions. The first is the integration of economic analysis into all stages of enforcement decision-making. The second is the integration of empirical evidence into the decision-making process. The third is a commitment to competition policy applying basic insights from decision theory to minimize the costs of enforcement decisions and the design of legal rules. This philosophy is sometimes referred to in shorthand as the "error-cost" approach to antitrust. Its core insight is the common-sense observation that errors by enforcement agencies and courts are inevitable in a world of imperfect information. These errors will inevitably harm consumers to some degree and their consequences for consumers should be taken into account when contemplating action.

It is especially critical to remain faithful to evidence-based principles when contemplating enforcement in high-tech markets where the stakes are highest for consumers and errors can dampen economic growth. I will begin by elaborating on each of these elements in greater detail with an eye toward its application in high-tech markets.

First and foremost, evidence-based antitrust reflects a commitment to rely upon the best available economic theory to explain and predict the competitive consequences of specific business conduct. The proliferation of theoretical explanations for business conduct gives rise to a "model selection" problem, that is, enforcers and courts are frequently asked to discriminate between sophisticated economic models which, while individually plausible, generate differing and sometimes contradictory enforcement implications. The model selection problem

[1] Commissioner, Federal Trade Commission.

[2] I have written about evidence-based antitrust in the U.S. context. *See, e.g.*, Joshua D. Wright, *Abandoning Antitrust's Chicago Obsession: The Case for Evidence-Based Antitrust*, 78 ANTITRUST L.J. 241 (2012).

complicates an already arduous task for agencies with limited resources and generalist judges alike. Clarity on what is the "best" available theory in a given matter is therefore at a premium. A scientific approach to antitrust analysis requires that the "best" theory is the one that most closely conforms to the facts on the ground and that generates predictions most closely fit by the data. Dogmatic loyalty to particular antitrust "schools" inevitably lead to poor decision-making and adherence to particular theories and models without regard to whether they are the best suited for the case at hand. In contrast, the evidence-based approach finds well-established theories that conform to the facts on the ground as investigated and observed. In other words, competition agencies can—and must—be cautious and informed consumers in the highly competitive market of theoretical models, simulations, and tools designed for application in antitrust decision-making.

One consequence of this responsibility is that competition agencies committed to evidence-based antitrust should avoid relying upon novel and untested theories.[3] Recent decades have seen a proliferation of economic theories targeted in large part at antitrust practitioners. Academic economists have developed some complex mathematical models that purport to improve our understanding of certain business practices such as vertical restraints, exclusive dealing, and most-favored nation clauses, by setting forth the conditions that must obtain for the conduct under study to possibly generate anticompetitive results. The industrial organization literature is replete with these "*possibility theorems*."[4] New models and research are doubtlessly vital to the continued evolution of antitrust, and this research should be encouraged. From an antitrust enforcement perspective, however, we must require market testing before applying new theories in real world markets. A company would never switch to a new supplier for a critical input without some empirical evidence that the new supplier's product is reliable and satisfies the customer's needs; economic analysis is, needless to say, our critical input—and the market enjoys a plethora of competitive suppliers of economic theory. We, as antitrust enforcers, are best served by welcoming and even encouraging the development of new theoretical models and tools while also demanding evidence that these models are reliable predictors of actual firm behavior before they are implemented through enforcement actions. Antitrust remains an area where, as I have written previously, "the ratio of theories-to-empirical evidence remains exceedingly high."[5] A commitment to using predictive power to separate those merely novel theories from those that have survived market-testing can ensure agencies avoid adopting wobbly theoretical foundations as the basis for enforcement decisions at the expense of the consumers they seek to protect.

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[3] *See* Douglas H. Ginsburg & Joshua D. Wright, *Dynamic Analysis and The Limits of Antitrust Institutions*, 78 ANTITRUST L.J. 1 (2012).

[4] *See* David S. Evans & Jorge Padilla, *Neo-Chicago Approach to Unilateral Practices*, 72 U. CHI. L. REV. 73, 77 (2005).

[5] Wright, *supra* note 2, at 262. This has been the state of play in the industrial organization literature for quite some time. Ronald Coase famously observed the tendency of economists to rely upon the monopoly explanation when they do not understand a business practice. *See* Ronald Coase, *Industrial Organization: A Proposal for Research*, *in* 3 POLICY ISSUES AND RESEARCH OPPORTUNITIES IN INDUSTRIAL ORGANIZATION 59, 67 (Victor Fuchs ed. 1972) ("If an economist finds something . . . that he does not understand, he looks for a monopoly explanation. And as in this field we are rather ignorant, the number of un-understandable practices tends to be rather large, and the reliance on monopoly explanations frequent.").

The next element of evidence-based antitrust analysis is rigorous empirical analysis. George Stigler defined industrial organization as "microeconomics with evidence." The benefits of antitrust empiricism are clear: first and foremost, empirical evidence can resolve or minimize the model selection problem in favor of the most demonstrably accurate model. Without this focus, decision-makers are left without a scientific basis with which to discriminate among dueling economic theories. Obtaining good empirical work is, of course, a challenge. But antitrust agencies can play a role in overcoming this obstacle. Competition agencies themselves should be equipped with infrastructure capable of producing and evaluating high-quality empirical work. This begins with personnel: a stable of well-trained empirical economists is critical to the mission of modern antitrust agencies. Beyond the people, we need to have the right tools, in terms of hardware, software, and organizational support, as complements to the empirical economists. To give just one example, the use of empirical analysis in assessing hospital mergers has been tremendously successful at the FTC.[6]

The final element of evidence-based antitrust analysis is an awareness of the social costs arising from legal errors and the design of legal rules. Plainly, the approach postulates that antitrust enforcement decisions should minimize the sum of the costs of legal errors and administration of the antitrust laws. While the notion of applying decision theory to the design of legal rules has a long history, this "error-cost approach" to antitrust was pioneered by Judge Frank Easterbrook of the U.S. Court of Appeals for the Seventh Circuit.[7] Within this framework, one weights the probability of each type of error – that is, a false conviction or false acquittal – by the expected social cost associated with that error.

The ultimate goal of the error-cost approach is to provide an intellectually robust framework for translating economic theory and data into antitrust policy and enforcement decisions offering the best chance at maximizing consumer welfare.

The error-cost approach has proven a fruitful way for conceptualizing debates over optimal antitrust enforcement decisions and legal rules in many areas where potential errors are important.[8] High-tech industries are especially well-suited for application of the error-cost framework because of the central role innovation plays in the long-run health of the industry and consumer welfare. On the one hand, false positives that chill innovation can be especially harmful to economic growth. On the other hand, false negatives representing failure to condemn anticompetitive business practices in high-tech markets can dampen innovation and lead to serious negative consequences. We need not ask whether antitrust is up to the task in high-tech markets as a general matter; instead, we must focus upon whether antitrust decision-makers can be confident, based upon a frank and objective assessment of the relevant economic theory and

[6] Joseph Farrell, David J. Balan, Keith Brand & Brett W. Wendling, *Economics at the FTC: Hospital Mergers, Authorized Generic Drugs, and Consumer Credit Markets*, 39 REV. INDUS. ORG. 271 (2011).

[7] Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984).

[8] *See, e.g.*, Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMP. L. & ECON. 153 (2010); James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005); Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision Theoretic Approach*, 69 ANTITRUST L.J. 469 (2001); C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41 (1999).

evidence that includes a weighing of the potential costs of error and administrative costs,[9] that a particular antitrust action will make consumers better off.

To recap, an evidence-based approach to antitrust enforcement offers several benefits.

First, it helps mitigate the model selection problem.[10] Most enforcers and courts have only a modest understanding of economics and a limited ability to discriminate among a plethora of competing models in any given case. Evidence-based antitrust provides a way forward for institutions making difficult decisions based upon the best possible economic framework.

Second, enforcement techniques would reflect the best available empirical evidence available at any given time. As new economic theories with strong predictive powers develop, enforcement techniques can and should adjust to incorporate our updated understanding.

Third, evidence-based antitrust prevents enforcers and courts from selecting economic theories *ad hoc*, or, more perniciously, to support a pre-conceived result. Likewise, evidence-based antitrust avoids the use of popular, new economic models until they are validated.

Further, this approach avoids the conventional but unhelpful focus on so-called schools within the antitrust community. Terms such as the "Chicago School," the "Post-Chicago School" and the "Behavioral School" tend to encourage artificial intellectual divisions. An evidence-based approach is faithful to no specific model or theory. Evidence-based antitrust is therefore amenable to models from any of these schools so long as they have empirical support.

Finally, evidence-based antitrust is likely to better integrate economics and economists into agency decision making. The approach highlights important institutional design questions with which antitrust agencies must grapple. For example, a commitment to evidence-based antitrust at the institutional level helpfully focuses an agency on questions like how it should organize its economists to best integrate their expertise to improve the consistency and quality of agency analysis.[11]

Harnessing the power of economics and disciplined by empiricism, antitrust in high-tech markets can help ensure competition, innovation, and economic growth. When untethered from these economic principles, however, antitrust enforcement runs serious risk of doing more harm than good as the discipline provided by economics and empiricism are replaced with subjective considerations, prior beliefs, or political preferences. As commitment to that discipline weakens with antitrust institutions, the inevitable consequence is a system less capable of promoting consumer welfare and more likely to reduce it.

One of my highest priorities as an FTC Commissioner is to support the use of evidence-based antitrust at the agency. Fortunately, the Commission has a long history of guiding antitrust policy, testing economic theories, and conducting policy research and development – all

[9] Institutional design and institutional capability must be taken into account when formulating and applying antitrust rules. Concerns about administrability, for example, might counsel against an antitrust agency or court imposing a remedy that involves a determination of a "fair" price or specifying terms of access to a particular facility.

[10] For a more detailed discussion of the model selection problem, see Wright, *supra* note 2, at 253-57.

[11] Luke M. Froeb et al., *The Economics of Organizing Economists*, 76 ANTITRUST L.J. 569 (2009).

hallmarks of an agency guided by the principles of evidence-based antitrust.[12] The FTC is well-suited to lead in this regard. Congress conferred upon the FTC the authority not only to enforce competition laws, but, rare among agencies, the ability to undertake research and information gathering.[13] The FTC employs this authority to achieve several competition policy objectives, including support for enforcement efforts, development of industry expertise, improvements in economic learning applicable across markets, agency self-assessment, and fostering relevant academic research.[14] Many of these projects include input from businesses, academia, consumer groups, and other governmental bodies.

A few examples of recent FTC competition policy initiatives illustrate the many uses of the Commission's research authority:[15]

- In 2011, the FTC released a report examining the competitive effects of branded pharmaceutical firms offering authorized generic drugs.[16] The report concluded that when pharmaceutical companies introduce an authorized generic version of their brand-name drug, it can reduce both retail and wholesale drug prices, benefiting consumers. In addition, the report concluded that there was no empirical support to support concerns that patent challenges by generic competitors might be diminished by the introduction of these products. Both of these conclusions were contrary to some expectations and helped inform the agency's enforcement in this area.
- In 2009, FTC Chairman Bill Kovacic issued a report called *FTC at 100* that provided an agency self-assessment and identified possible improvements to agency practice and procedure.[17]
- In 2007, the FTC released a staff report that identified principles that policy makers should consider in evaluating proposed regulations or legislation relating to broadband Internet access and network neutrality.[18] The report suggested that policy makers should be hesitant to enact new regulation in these areas, absent demonstrated market failure or

[12] Timothy J. Muris, *Improving the Economic Foundations of Competition Policy*, 12 GEO. MASON L. REV. 1 (2003).

[13] Section 6 of the FTC Act, 15 U.S.C. § 46.

[14] More detailed descriptions and examples of these goals are described in William E. Kovacic, Chairman Fed. Trade Comm'n, *The Federal Trade Commission at 100: Into Our 2nd Century: The Continuing Pursuit of Better Practices* 93-100 (Jan. 2009), *available at* http://www.ftc.gov/ftc/workshops/ftc100/docs/ftc100rpt.pdf.

[15] The FTC also generates a considerable volume of economic research related to consumer protection issues including areas such as consumer fraud, mortgage disclosures, and television advertising to children. This research can be found on the FTC's website at http://www.ftc.gov/be/econrpt.shtm.

For example, in 2007, the agency held a conference that brought together leading researchers from various fields to present and discuss empirical research on consumer behavior and its relevance to consumer protection policy. *See* Fed. Trade Comm'n, Bureau of Economics, Conference on Behavioral Economics and Consumer Policy (Apr. 2007), *available at* http://www.ftc.gov/be/consumerbehavior/index.shtml.

[16] Fed. Trade Comm'n, Authorized Generic Drugs: Short-Term Effects and Long-Term Impact (Aug. 2011), *available at* http://www.ftc.gov/os/2011/08/2011genericdrugreport.pdf.

[17] *FTC at 100*, *supra* note 14.

[18] Fed. Trade Comm'n Staff, Broadband Connectivity Competition Policy (June 2007), *available at* http://www.ftc.gov/reports/broadband/v070000report.pdf.

consumer harm, because of the evolving, dynamic nature of the industry and trend toward greater competition.

- In 2003 and 2004, the FTC released two reports describing barriers to e-commerce in certain industries.[19] These reports helped inform subsequent advocacy efforts by the agency.
- Over the last decade, the agency has released a series of reports discussing issues central to the intersection between antitrust and intellectual property, the proper antitrust analysis of conduct involving intellectual property, and suggestions for preserving competition and incentives for creativity and innovation.[20] Some of these were prepared jointly with the DOJ Antitrust Division.
- The FTC, along with the DOJ, recently held a workshop on patent assertion entity activities and their effect on innovation and competition.[21] Panelists included academics, economists, industry representatives, and attorneys.
- FTC economists have also conducted research into important areas such as merger retrospectives; entry/exit patterns in various industries; and vertical contracts.

In addition to conducting its own research, the Commission also encourages worthwhile empirical research by scholars in the field. For example, the FTC's Bureau of Economics conducts an annual microeconomic conference with Northwestern University to bring together scholars in academia and the government to discuss cutting-edge research and topics of interest. The most recent conference covered issues such as structural models in industrial organization, the economics of advertising, and the economics of hospital competition. This exchange of research and ideas helps agencies and courts discriminate among competing theories, assess current policy decisions, and continue to improve our understanding of business conduct.

Another area where the FTC (and Department of Justice's Antitrust Division) have made valuable economic contributions to competition policy is merger review. A central mission of the FTC is to review mergers and acquisitions and assess their impact on consumers and overall market efficiency. Merger enforcement represents perhaps the greatest success of the integration of economic theory and empirical analysis in American antitrust law. Once the haven of many of the worst early U.S. antitrust decisions, current enforcement, largely based upon the joint FTC/ DOJ Merger Guidelines, endorses an economically sound and empirically-grounded analysis at

[19] Possible Anticompetitive Barriers to E-Commerce: Contact Lenses: A Report from the Staff of the Federal Trade Commission (Mar. 2004), *available at* http://www.ftc.gov/os/2004/03/040329clreportfinal.pdf; Possible Anticompetitive Barriers to E-Commerce: Wine: A Report from the Staff of the Federal Trade Commission (July 2003), *available at* http://www.ftc.gov/os/2003/07/winereport2.pdf.

[20] *See, e.g.*, Fed. Trade Comm'n, The Evolving IP Marketplace: Aligning Patent Notice and Remedies With Competition (Mar. 2011), *available at* http://www.ftc.gov/os/2011/03/110307patentreport.pdf; U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition (Apr. 2007), *available at* http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf.

[21] Fed. Trade Comm'n, 2012 FTC Workshop: Patent Assertion Entity Workshop, http://www.ftc.gov/opp/workshops/pae/; Fed. Trade Comm'n, 2009 FTC Workshop: News Media Workshop, www.ftc.gov/opp/workshops/news/index.shtml.

every stage of merger review. While imperfect, the Merger Guidelines have provided courts and agencies with a reliable framework for analyzing mergers.

The Merger Guidelines themselves demonstrate a history of updating and integrating new economic knowledge, having been revised several times since their original 1968 incarnation. For example, the 1982 Merger Guidelines signified a "revolutionary leap forward"[22] in merger review by moving horizontal merger analysis away from a near-total reliance upon structural considerations and toward a more fact-intensive examination of the likely competitive effects. As those Guidelines explained, "A variety of factors other than concentration, market shares, and ease of entry affect the likelihood that a merger will create, enhance or facilitate the exercise of market power."[23] Whether a transaction would facilitate coordinated interaction among post-merger rivals is one example of these new considerations in the '82 Guidelines. This addition to the Guidelines was based upon the work of economist George Stigler,[24] whom I've already mentioned. Subsequent versions of the Guidelines incorporated the learning gained from studies of observed coordinated behavior and the Antitrust Division's experience uncovering and prosecuting criminal cartels into the Guidelines' discussion of coordinated effects. Other economics-based advancements in the 1982 Guidelines include the "hypothetical monopolist" test for market definition and giving weight to the likelihood of market entry.

The 1992 Merger Guidelines built on the economic advancements in the 1982 (and 1984) Guidelines by introducing the concept of unilateral effects, which is the elimination of competition between the two merging firms without accommodating reactions by others. Unilateral price effects can arise when one of the merging firms is constrained from raising its prices because a substantial amount of sales would be lost to its prospective merger partner. The discussion of unilateral effects in the '92 Guidelines drew upon several generally-accepted economic models. For example, the Guidelines' discussion of unilateral effects in markets involving differentiated products drew upon studies applying Bertrand economic models, while the discussion of unilateral effects in markets involving homogenous products drew upon studies applying Cournot economic models.[25]

The 2010 Guidelines also incorporate several advancements in economic thinking. Most importantly, the 2010 Guidelines continue the trend away from relying upon structural presumptions (and thus, market definition) to infer competitive effects. The 1992 Merger Guidelines contained a step-by-step, algorithmic approach to merger analysis that always began with market definition. In contrast, the 2010 Guidelines state that "[t]he Agencies' analysis need

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[22] Charles A. James, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, Remarks on the Occasion of the Twentieth Anniversary of the 1982 Merger Guidelines (June 10, 2002), *available at* http://www.justice.gov/atr/hmerger/11253.htm.

[23] U.S. Dep't of Justice, Merger Guidelines § III.C. (1982), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,102, *available at* www.justice.gov/atr/hmerger/11248.htm. .

[24] George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44 (1964).

[25] In a Cournot model, firms seek to maximize profit by setting output, taking their rivals' outputs as given. In a Bertrand model, firms compete seek to maximize profit by setting price rather than output. *See generally* Joseph Louis François Bertrand, *Book review of theorie mathematique de la richesse sociale and of recherches sur les principles mathematiques de la theorie des richesses*, 67 JOURNAL DE SAVANTS 499 (1883); ANTOINE COURNOT, RESEARCHES ON THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH (1838).

not start with market definition"[26] and that the measurement of shares and concentration is "not an end in itself," and instead only "useful to the extent it illuminates the merger's likely competitive effects."[27] Although the 2010 Guidelines include a lengthy discussion of market definition and concentration, they further explain that the "purpose of these thresholds is not to provide a rigid screen to separate competitively benign mergers from anticompetitive ones."[28] This shift away from the structural approach is beneficial and reflects the well-accepted and long understood view among antitrust economists and lawyers that post-merger concentration is not a reliable predictor of competitive effects.[29]

The discussion of competitive effects analysis in the 2010 Guidelines also reflects a number of advancements consistent with an evidence-based approach. For the first time, the Guidelines identify natural experiments and actual effects from consummated mergers as relevant forms of evidence. An evidence-based approach necessarily prizes real-world quanitifiable examples of the competitive impact of a merger; befitting this importance, natural experiments and actual effects from consummated mergers are now the first two types of evidence listed in Section 2.1 of the Guidelines.

While I've highlighted developments in the 2010 Guidelines that are consistent with an evidence-based evolution, the Guidelines still do not reflect up to date economic thinking in some areas. The failure to update the Guidelines' efficiencies analysis is perhaps the best example of this shortcoming. The 2010 Guidelines—like its predecessors—permits the Agencies to challenge a transaction even when it offers substantial out-of-market efficiencies.[30] As a result, the Guidelines sanction the blocking of some mergers that will increase consumer welfare.[31] Such an approach is inconsistent with the increased focus apparent throughout the rest of the Guidelines on analyzing the actual competitive effects of a merger with less regard for market definition.

Notwithstanding my quibbles with certain aspects of the current Merger Guidelines, I remain optimistic that advancements in economic theory and new empirical research will continue to find their way into future versions of the Guidelines. Most importantly, the Merger Guidelines stand as a shining example of the role agencies can play in developing evidence-based approaches to competition policy and allowing those approaches to evolve over time consistent with developments in theory and empirical knowledge.

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[26] U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 4 (2010) [hereinafter 2010 Guidelines], *available at* http://www.ftc.gov/os/2010/08/100819hmg.pdf.

[27] *Id.* § 4.

[28] *Id.* § 5.3

[29] Muris, *supra* note 12, at 4-5.

[30] In a 1963 case, the U.S. Supreme Court held that efficiencies outside the relevant market were not a proper defense to a merger. *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963).

[31] Footnote 14 of the 2010 Guidelines do state, however, that "the Agencies in their prosecutorial discretion will consider efficiencies not strictly in the relevant market, but so inextricably linked with it that a partial divestiture or other remedy could not feasibly eliminate the anticompetitive effect in the relevant market without sacrificing the efficiencies in the other market(s)."

III. EVIDENCE-BASED FTC ANTITRUST ENFORCEMENT IN THE TECHNOLOGY SECTOR

Let me turn next to a few examples of FTC enforcement in the high-tech sector and describe the extent to which economically sound approaches were followed in each. An obvious place to begin is the FTC's recent investigation into Google's search practices. As you are no doubt aware, Google is the leading Internet search engine in most countries outside China. In the United States, Google's market position is similar to Baidu's in China. Last month, just before I joined the agency,[32] the FTC announced that it had concluded an investigation into Google's search engine practices.[33] The focus of the FTC's investigation involved allegations that Google unfairly preferenced its own content on the Google search results page and selectively demoted its competitors' content from those results. Some parties referred to this alleged practice as "search bias." The Commission, by a bipartisan and unanimous vote, concluded that Google's conduct was not anticompetitive and closed this aspect of its investigation.[34]

In reaching its conclusion, the Commission considered a variety of evidence, including extensive quantitative analysis, millions of documents, testimony, and presentations from other industry participants. The Commission's closing statement indicates the Commission correctly weighed these various forms of evidence through the touchstone of consumer welfare.[35] In other words, the Commission focused upon whether and to what extent Google's search practices harmed consumers. The Commission's closing statement indicates that Google's so-called search bias did not, in fact, harm consumers; to the contrary, the evidence suggested that "Google likely benefited consumers by prominently displaying its vertical content on its search results page."[36] The Commission reached this conclusion based upon, among other things, analyses of actual consumer behavior—so-called "click through" data—which showed how consumers reacted to Google's promotion of its vertical properties.[37]

In contrast, the Commission rejected the notion that harm to competitors or strengthening a dominant position was a relevant consideration. This was important, given the Commission's finding that Google's practice caused "significant traffic loss to the demoted

[32] I have not participated in any aspect of the Google investigation, and my remarks today regarding the Google investigation are based solely upon the public record.

[33] A press release describing the resolution of the FTC's investigation of Google, as well as links to the various statements from individual Commissioners, is available at http://www.ftc.gov/opa/2013/01/google.shtm.

[34] The Commission's closing statement also noted that three Commissioners had "strong concerns" regarding Google's alleged misappropriation of information from other websites and two Commissioners likewise had "strong concerns" regarding Google's restrictions on the ability of firms to advertise simultaneously on Google and competing search engines. *See* Statement of the Federal Trade Commission Regarding Google's Search Practices at 3 n.2, In the Matter of Google Inc., FTC File Number 111-0163 (Jan. 3, 2013), *available at* http://ftc.gov/os/2013/01/130103googlesearchstmtofcomm.pdf.

[35] The Commission's closing statement indicated that the Commission also considered so-called intent evidence, i.e., documents and testimony suggesting that Google might have had an anticompetitive motive for its business practices. *See id.* at 2. As a general matter, I would place little weight on this type of evidence because of its inherently subjective nature and potential for confusion with competition on the merits. *See* Geoffrey A. Manne & Marc Williamson, *Hot Docs vs. Cold Economics: The Use and Misuse of Business Documents in Antitrust Enforcement and Adjudication*, 47 ARIZ. L. REV. 609 (2005).

[36] *Id.* at 2.

[37] *Id.*

comparison shopping properties, arguably weakening those websites as rivals to Google's own shopping vertical."[38] In other words, the Commission accepted arguments made by competing websites that Google's practices injured them and strengthened Google's market position, but correctly found that these were not relevant considerations in a proper antitrust analysis focused upon consumer welfare rather than harm to competitors.

The Commission's closing statement incorporated another important aspect of evidence-based antitrust: the error-cost framework. The Commission's closing statement noted the significant harm that was likely from an erroneous condemnation of Google. As the closing statement explained, "condemning legitimate product improvements risks harming consumers."[39] In addition, the closing statement wisely considered the potential cost of administrating antitrust rules in this high-tech arena by noting that the Commission lacked the ability to "second-guess" product improvements that plausibly benefit consumers.[40] This type of regulatory humility is always important but particularly in fast-moving industries characterized by dynamic competition.

Another recent FTC case involving the technology industry, and highlighting an evidence-based approach, is *Realcomp*. Realcomp, a Michigan-based realtors group, provided an electronic database of local homes for sale, referred to as an MLS (or Multiple Listing Service).[41] The FTC has challenged a number of these systems over the years on the basis that they excluded discount real estate agents.

Realcomp, by contrast, did not prevent discount *agents* from participating in its MLS, but instead excluded discount *listings* from most searches on the database.[42] In 2009, after a hearing before an administrative law judge, the FTC issued an Opinion finding that Realcomp violated the antitrust laws by restricting the ability of members to offer consumers lower-priced alternatives to traditional real estate services.[43] The FTC's Final Order required Realcomp to provide its members non-discriminatory access to discount listings on its MLS.

Once again, the Commission generally adhered to evidence-based antitrust principles in reaching its decision. The Commission's Opinion noted that its analysis was guided by "accepted economic theory."[44] In addition, the Commission relied upon a report the FTC and DOJ had issued two years earlier examining the state of competition in the real estate brokerage industry.[45] Among other things, the report summarized the existing empirical evidence on commission rates and fees, as well as likely obstacles to more robust broker competition.

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[38] *Id*. at 2-3.

[39] *Id.* at 3.

[40] *Id.*

[41] An MLS is an example of what economists call two-sided markets with network effects. In this respect, the MLS product is a "platform" for two types of users: home buyers and home sellers.

[42] Realcomp also refused to transmit discount listings to publicly available Web sites.

[43] Opinion of the Commission, Realcomp II, Ltd., FTC Docket No. 9320 (2009), *available at* http://www.ftc.gov/os/adjpro/d9320/091102realcompopinion.pdf.

[44] *Id*. at 22.

[45] U.S. Department of Justice & Fed. Trade Comm'n, Competition in the Real Estate Brokerage Industry (Apr. 2007), *available at* http://www.ftc.gov/reports/realestate/V050015.pdf.

The Commission began its Opinion by observing that although an MLS is a collaboration among rivals—which ordinarily might raise concerns—history had shown that MLS systems had provided a significant benefit to consumers:

Antitrust doctrine recognizes that multiple listing services produce genuine efficiencies and improve economic performance in the sale and purchase of homes. As a centralized information sharing service, an MLS provides benefits to consumers by facilitating the matching of home buyers and home sellers.[46]

As a result, the issue in the Realcomp case was not about the legality of forming or operating an MLS, but rather whether Realcomp's policies impeded the dissemination of discount listings. The Commission observed that Realcomp's policies were akin to restraints on discounters' advertising and on the dissemination of information to consumers regarding discounted services, for which there is considerable economic experience demonstrating their anticompetitive impact.

The Commission was also concerned that Realcomp's policies impeded dynamic competition in the brokerage industry. The Opinion observed that discount brokers, combined with consumers' increasing use of the Internet, offered a new business model with considerable benefits for consumers, including lower prices. This new business model posed "extremely serious threats to" the traditional broker business model.[47] The Opinion pointed to empirical studies suggesting that, absent this new form of competition, brokerage rates were likely to remain rigid.[48] Realcomp's policies singled out the new limited-service brokerage business model and put it at a significant competitive disadvantage to the traditional brokerage model.

The Commission explained that "it is easy to see how 'an observer with even a rudimentary understanding of economics could conclude that the arrangements in question would have an anticompetitive effect on customers and markets,'"[49] and that "[r]estrictions on truthful and nondeceptive advertising harm competition, because they make it more difficult for consumers to discover information about the price and quality of goods or services, thereby reducing competitors' incentives to compete with each other with respect to such features."[50] Furthermore, Realcomp's "policies tend to alleviate downward pricing pressure on traditional brokers' commission-based pricing model."[51]

Quantitative analysis played a significant role in the Commission's competitive effects analysis.[52] The Commission relied upon a time-series analysis comparing the share of discount listings in the Realcomp MLS before and after the implementation of the challenged policies, and found significantly fewer discount listings after the policies at issue were implemented. The Commission also pointed to a benchmark study comparing the share of discount listings in a number of MLS services in areas with and without listing restrictions similar to Realcomp's, and

[46] Realcomp Opinion, *infra* note 53, at 22 (citation omitted).
[47] *Id*. at 24.
[48] *Id*. at 24 n.17.
[49] *Id*. at 25 (quoting *California Dental Ass'n v. FTC*, 526 U.S. 756, 770 (1999)).
[50] *Id*. at 25 (quoting *Polygram Holding, Inc.*, 136 F.T.C. 310, 354-55 (2003)).
[51] *Id*. at 28.
[52] *Id*. at 35, 43-47.

found significantly fewer discount listings in areas where the MLS imposed website restrictions similar to Realcomp's. Finally, the Opinion cited a regression analysis that demonstrated a correlation between restrictive website policies such as Realcomp's and fewer discount listings.

The Commission Opinion went on to find that there were no cognizable justifications for Realcomp's restrictions. As a result, the Commission concluded that Realcomp's policies unreasonably restrained competition in the market for residential real-estate-brokerage services in southeastern Michigan. The Commission Opinion was upheld by the Court of Appeals for the Sixth Circuit in 2011.[53]

While I've given two examples that I think exemplify an evidence-based approach to antitrust enforcement in high-tech markets, of course, the FTC does not always get things right. Let me end by providing one example of a high-tech case in which, in my own view, the FTC abandoned evidence-based principles. In 2009, the FTC filed a complaint against Intel alleging, among other things, that its use of loyalty discounts in the microprocessor market violated the antitrust laws. Loyalty discounts are a form of pricing where buyers receive a lower unit price after meeting some requirement, such as allocating a certain percentage of its purchases to a specific supplier. The allegation in Intel was that the loyalty discounts acted as a *de facto* exclusive arrangement that effectively locked-in PC manufacturers, such as Dell and HP, into using Intel microprocessors at the expense of AMD (Intel's principal competitor).

Economics tells us, however, that loyalty discounts can generate both anticompetitive *and* procompetitive effects, depending upon the particular facts and market realities. The procompetitive aspects of the loyalty discounts were tangible, intuitive, and apparent: lower prices that are passed onto to consumers. In contrast, the potential anticompetitive aspects of Intel's conduct were far less apparent and inherently speculative. Evidence-based antitrust is appropriately reluctant to sacrifice known and obvious consumer benefits for speculative and unrealized consumer harms.

Compounding the apparent lack of a valid economic theory explaining why Intel's conduct was likely to injure competition was an apparent lack of evidence of actual competitive injury. One advantage of enforcement actions involving conduct that has been in the marketplace for a considerable period of time is that they enable the opportunity to observe any competitive footprints left by the practice at issue. Intel, for example, had been using loyalty discounts for over a decade. Nevertheless, there were scant details in the Commission's Complaint regarding the alleged anticompetitive effects from Intel's conduct.[54] In a research paper that I wrote before I joined the agency, I found little evidence consistent with the notion that Intel's conduct had harmed consumers and certainly no evidence that would support the Commission's controversial use of its Section 5 unfair methods of competition authority to reach Intel's discounts.[55]

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[53] *Realcomp II, Ltd. v. FTC*, 635 F.3d 815 (6th Cir. 2011).

[54] Administrative Complaint ¶¶ 55, 93-96, In re Intel Corp., Docket No. 9341 (Dec. 16, 2009), *available at* http://www.ftc.gov/os/adjpro/d9341/091216intelcmpt.pdf.

[55] Joshua D. Wright, *Does Antitrust Enforcement in High Tech Markets Benefit Consumers? Stock Price Evidence from* FTC v. Intel, 38 REV. INDUS. ORG. 387 (2011).

IV. CONCLUSION

I have spoken at length about the meaning and implications of evidence-based antitrust; while potentially complicated in implementation, it is a philosophy easily summarized in theory. Competition agencies should integrate tried and tested economic theories and empiricism into all stages of decision-making, which will in turn increase the consistency and quality of the resultant analysis. The evolution of antitrust agencies aspiring to maximize the rate of return they offer consumers must be data driven. That evolution will reward agencies that make the required methodological commitments to allow them to discriminate between competing theories, to evaluate and incorporate empirical evidence into decision-making, to adopt institutional design features that make the best use of the economic expertise at the agency's disposal, and to put all of their available policy and research tools to good use. In these respects, evidence-based antitrust enforcement in high-tech industries is no different from antitrust enforcement in other industries. As the FTC's investigations into Google's alleged search bias and Realcomp's MLS restrictions demonstrate, antitrust enforcers have the tools and aptitude to conduct empirically-based investigations in the technology sector and reach well-reasoned decisions. The FTC is uniquely suited in many ways to continue to be a leader in the development of evidence-based antitrust in the high-tech sector and, during my time as a Commissioner, I hope to play a part in encouraging its further development in all stages of competition policy and enforcement.