# FROM *STAPLES* TO *STAPLES*: 20 YEARS OF MERGER ENFORCEMENT IN THE UNITED STATES

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INTRODUCTION

This paper studies the genesis and development of competitive effects analysis in the antitrust merger review process. The Federal Trade Commission's ("FTC's") two successful challenges of the proposed merger of Staples and Office Depot, twenty years apart, serve as bookends to this story.[1]

The first challenge, in 1997, launched the competitive effects revolution in antitrust merger analysis.[2] The aim of that revolution was to move past the practice of evaluating mergers primarily on the basis of market shares, and instead to study directly, and even quantify, the likely competitive effects of mergers through rigorous econometric analysis.[3] As the competitive effects revolution matured, it acquired a theoretical foundation based on the first principles of profit maximization.[4] With that base in place, the focus shifted to methods for the empirical estimation of the key parameters of antitrust relevance.[5]

This article argues that the competitive effects revolution has gone somewhat awry during this stage of its development. This is evident upon considering the current practice of competitive effects analysis. As practitioners of antitrust merger analysis are only too well aware, the current practice of competitive effects evaluation at the antitrust enforcement agencies is quite often based on the use of estimated market shares.[6] This is a startling outcome twenty years into the competitive effects revolution.

The motivation underlying the development of competitive effects analysis was a (valid) concern that market share estimates present no more than

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[1] *See* FTC v. Staples Inc. (*Staples II*), 190 F. Supp. 3d 100 (D.D.C. 2016); FTC v. Staples, Inc. (*Staples I*), 970 F. Supp. 1066 (D.D.C. 1997).

[2] *See Staples I*, 970 F. Supp. 1066; Jonathan B. Baker & Robert Pitofsky, *A Turning Point in Merger Enforcement:* Federal Trade Commission v. Staples, 71 CONTRIBUTIONS TO BOOKS 1, 24–25 (2007).

[3] *See* Baker & Pitofsky*, supra* note 2, at 24–25; *see also* Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 49, 60 (2010).

[4] *See* Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E.J. THEORETICAL ECON. 18, 20–21, 29 (2010).

[5] *See id.*; *see also* Shapiro, *supra* note 3, at 64 n.57 (providing a number of articles surveying the development of empirical methods).

[6] *See* Michael L. Katz & Carl Shapiro, *Critical Loss: Let's Tell the Whole Story*, 17 ANTITRUST 49, 49 (2003).

imperfect indicators of likely competitive effects.[7] The interest in directly evaluating competitive effects was based on the understanding that relying on market shares (and related indicia such as the Herfindahl-Hirschmann index) can lead to antitrust inferences that are contrary to the underlying competitive dynamic.[8]

But the current practice of competitive effects analysis appears to have come full circle to rely once again on market shares. Thus, the contemporaneous practice of competitive effects analysis presents the same risk of generating antitrust inferences that are disconnected from, and even contrary to, the understanding obtained from a meaningful, organic examination of the underlying competitive dynamic. This article provides some examples that illustrate the perils of using market shares as inputs in the machinery of competitive effects analysis, including the FTC's second challenge of the proposed merger of Staples and Office Depot in 2015.[9]

On May 10, 2016, Judge Emmett Sullivan of the United States District Court for the District of Columbia issued an opinion granting the FTC a preliminary injunction enjoining the proposed acquisition of Office Depot by Staples.[10] This culminated a litigation that was filed on December 9, 2015,[11] which in turn represented the end point of an extended, year-long antitrust investigation by the FTC (the proposed merger was announced on February 4, 2015).[12]

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[7] The Horizontal Merger Guidelines published in 2010 note as follows:

The measurement of market shares and market concentration is not an end in itself, but is useful to the extent it illuminates the merger's likely competitive effects.

The Agencies' analysis need not start with market definition. . . .

[E]vidence also may more directly predict the competitive effects of a merger, reducing the role of inferences from market definition and market shares.

Where analysis suggests alternative and reasonably plausible candidate markets, and where the resulting market shares lead to very different inferences regarding competitive effects, it is particularly valuable to examine more direct forms of evidence [than market definition] concerning those effects.

U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 7 (2010); *see id.* at 18 ("Market shares may not fully reflect the competitive significance of firms in the market or the impact of a merger. They are used in conjunction with other evidence of competitive effects.").

[8] *See, e.g.*, Daniel M. Wall, *Beyond Market Share—Strategies for the High Market Share Firm*, 6 ANTITRUST 24, 24 (1991).

[9] *See Staples II*, 190 F. Supp. 3d 100.

[10] *See id.* at 138.

[11] Complaint for Temporary Restraining Order & Preliminary Injunction Pursuant to Section 13(b) of the FTC Act at 1, FTC v. Staples, Inc. (*Staples II*), 190 F. Supp. 3d 100 (D.D.C. 2016) (No. 1:15-cv-02115).

[12] *See* Press Release, Office Depot, Inc., Staples, Inc. Announces Acquisition of Office Depot, Inc. (Feb. 4, 2015), http://investor.officedepot.com/phoenix.zhtml?c=94746&p=irol-newsArticle&ID=2013387.

The two-week preliminary injunction hearing has achieved some notoriety in antitrust merger lore because the merging parties demurred from offering an affirmative defense.[13] Instead, Staples rested its defense without calling a single witness, contending that it had nothing to rebut because the FTC had failed to establish a presumption of harm.[14] But from a more substantive perspective, the remarkable aspect of the preliminary injunction hearing was the extent to which it centered on market definition and market shares. In 2016, twenty years after the launch of the competitive effects revolution, using one of the primary authors of that revolution as its expert economist, the government presented a case to block a proposed merger that focused primarily on market definition and market shares, an approach that it had painted as outdated when it challenged the same merger twenty years earlier.[15]

This Article examines the competitive effects analysis presented by the FTC that appears to have been the basis of their antitrust concern.[16] Following Reilly and Sanghvi,[17] this Article argues that the diversion estimates advanced by the FTC and its expert[18] were misguided and flawed because they discarded the vast bulk of the profits that each merging party stood to lose to third parties following a price increase. The problem was that by 2016, competitive effects analysis, and estimating diversions, had slipped into an exercise performed by rote rather than an organic inquiry whose guiding principle was to uncover the underlying competitive dynamics of the marketplace.

*Staples I*[19] (1997) and *Staples II*[20] (2016) thus provide a useful lens through which this Article examines the evolution of competitive effects analysis over the last twenty years. *Staples I* was a groundbreaking case that established a new paradigm in merger analysis and the litigation of merger

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[13]    *See* Matthew J. Reilly & Chetan Sanghvi, *Meet the New "BOSS": Competitive Effects Analyses in Staples/Office Depot*, 31 ANTITRUST 34, 34 (2016).

[14]    *See id.*

[15]    *See id.*

[16]    *See* Krisha A. Cerilli, *Staples/Office Depot: Clarifying Cluster Markets*, ANTITRUST CHRON., Aug. 2016, at 1, 9 (citing *Staples II*, 190 F. Supp. 3d at 131–32), https://www.competitionpolicyinter national.com/wp-content/uploads/2016/08/CPI-Chronicle.pdf. In her public remarks at the symposium associated with this issue of George Mason Law Review, the Director of the Bureau of Competition during the most recent Staples matter drew attention to the diversions estimated by the FTC by tabulating win-loss data and the market shares that they estimated. *See* George Mason Law and Economics Center, *Panel Two*: *From* Staples *to Staples – 20 Years of Merger Enforcement in the United States*, vimeo (Feb. 23, 2017), https://vimeo.com/206520537 (statement of Deborah L. Feinstein, Director, Bureau of Competition, Fed. Trade Comm'n).

[17]    *See* Reilly & Sanghvi, *supra* note 13, at 37.

[18]    The FTC's expert, Prof. Carl Shapiro, tabulated historical data on wins and losses to examine the rate at which the parties lost business to each other. This is a manner of estimating diversions. *See* Farrell & Shapiro, *supra* note 4, at 18.

[19]    970 F. Supp. 1066 (D.D.C. 1997).

[20]    190 F. Supp. 3d 100 (D.D.C. 2016).

preliminary injunction hearings.[21] Economic evidence, and particularly, the rigorous, econometric analysis of pricing effects, took center stage.[22] This supplanted the prior practice of focusing on relevant markets, market shares, and other such indicia of competitive effects.[23] The goal became to look at the thing itself, rather than the shadows that it cast.

In the subsequent years, the agencies adopted data-intensive and computationally complex analyses that were intended to provide direct insights into the likely competitive effects of proposed mergers. Part I examines how merger competitive effects analysis has evolved from *Staples I* to *Staples II*. Part II discusses *Staples I* and describes how it ushered in the use of competitive effects analytical tools that are now deployed in the course of merger investigations at antitrust enforcement agencies. Part II also describes the development of analytical approaches and tools in the years following *Staples I*. Part III describes some of the practical considerations and antitrust ramifications of how diversions are often estimated in current practice. Part IV describes how the diversions estimated by the FTC in *Staples II* were misguided and flawed because they failed to account for the underlying marketplace dynamics. Finally, this Article concludes with some observations regarding the irony–and antitrust peril–presented by the current practice of competitive effects analysis, in which market shares are often used to estimate diversions.

## I.    *STAPLES I* AND THE BIRTH OF MODERN ECONOMIC MERGER ANALYSIS

On September 4, 1996, Staples and Office Depot, the two largest office supply superstore chains, announced an agreement to merge.[24] The office supply superstore was a relatively new retailing format. Staples pioneered the concept in 1986,[25] and by the time of the proposed merger, the company had grown to over 500 stores.[26] Within months of Staples opening its first store, Office Depot also entered the marketplace, and had grown to a similar size by the time of the proposed merger.[27]

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[21]    *See* Baker & Pitofsky, *supra* note 2, at 23–25.

[22]    *See id.* at 24.

[23]    *See* Wall, *supra* note 8, at 24.

[24]    *Staples I*, 970 F. Supp. at 1069.

[25]    *See Our Story*, STAPLES, http://www.staples.com/sbd/cre/marketing/about_us/our-story.html (last visited Aug. 2, 2017).

[26]    *See* Plaintiff's Memorandum of Points and Authorities in Support of Motions for Temporary Restraining Order and Preliminary Injunction at 8, *FTC v. Staples, Inc.*, 970 F. Supp. 1066 (D.D.C. 1997) (No. 1:97CV00701) [hereinafter Plaintiff's Memorandum].

[27]    *See id.* at 9.

It is important to review the history of the antitrust investigation into the first proposed merger of Staples and Office Depot. As several of the principals involved in that litigation have made clear in published papers,[28] early in the investigation the parties voluntarily provided an analyst report issued by Prudential Securities that indicated that office supply prices in Totowa, New Jersey–a town that had a Staples, an Office Depot, and an Office Max–were about 5 percent lower than office supply prices in Paramus, New Jersey, a town located only twenty-five minutes away, but which only had a Staples and an Office Depot.[29] The analyst report attributed this price differential to reduced competition in Paramus.[30]

This analyst report set the agenda for the investigation and the subsequent litigation. It attracted the attention of the FTC, and led ultimately to the inclusion of what was almost surely the first large-scale data specification issued in a second request.[31] It led the FTC (and then the merging parties' economics expert) to perform sophisticated econometric analyses of how prices varied at Staples and Office Depot stores.[32]

In turn, this brought about a remarkable preliminary injunction hearing that centered on economists' expositions and discussions of econometric techniques, specifications and results. The FTC's trial brief for Staples immediately began by eschewing the prior approach of looking for indicia of harm. In the third page of the brief, it stated:

> In evaluating the legality of a merger, the antitrust laws essentially require a prediction as to whether the deal is likely to lead to less competition and, consequently, higher prices for consumers. Usually, that prediction is by necessity based on inferences derived from market concentration levels. Here, the court need not rely on market share based predictions alone. There is real world direct evidence–based on the defendants' pricing behavior.[33]

And at page 12, as the FTC's trial brief moved to the substance of the case, it presented direct evidence of competitive effects *before* discussing and defining the relevant product market.[34] In fact, its first argument in support of its definition of the relevant product market was the fact that a competitive

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28    *See, e.g.*, Orley Ashenfelter, David Ashmore, Jonathan B. Baker, Suzanne Gleason, & Daniel S. Hosken, *Empirical Methods in Merger Analysis: Econometric Analysis of Pricing in* FTC v. Staples, 13 INT'L J. ECON. BUS. 265, 266 (2006); *see also* Baker & Pitofsky, *supra* note 2, at 8.

29    *See Empirical Methods in Merger Analysis: Econometric Analysis of Pricing in* FTC v. Staples, *supra* note 28, at 266.

30    *See* Baker & Pitofsky, *supra* note 2, at 8.

31    *See id.* at 24.

32    *See id.*

33    Plaintiff's Memorandum, *supra* note 26, at 3.

34    *See id*. at 12 (discussing competitive effects); *id.* at 14 (discussing product market).

effect had been detected.[35] The approach utilized in the FTC's trial brief ultimately led to the adoption of rigorous empirical competitive effects analyses on a more widespread basis in merger investigations (i.e., to the competitive effects revolution).[36]

A variety of propitious circumstances–including (but not limited to) technological resources, data availability, the development of analytical tools, and of course, a case that posed germane antitrust questions–came together to make *Staples I* such a notable antitrust case. Before the occasion of this proposed merger in 1996, the direct economic analysis of competitive effects had not assumed the central role that it now has in merger analysis at the enforcement agencies.[37] Thus, while a document such as the Prudential Securities report would have obviously attracted the attention of staff at the agencies, it was unlikely to have led to an extended econometric exercise. Rather, following (then) current procedure, after receiving a boost in the form of a document that indicated that there was reason to investigate, the inquiry would likely have continued on to the usual questions regarding the definition of the relevant product market and perhaps product differentiation–in other words, to the *Brown Shoe* factors.[38]

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[35]   *See id*. at 16–17 ("In this case, the [market definition hypothetical monopolist] exercise need not be hypothetical. The defendants' own current pricing practices show that an office superstore monopolist has the ability profitably to raise prices above competitive levels. When Staples, Office Depot and Office-Max all compete in a city, prices are lowest. In two firm markets where Staples faces only its arch rival Office Depot, it charges slightly higher prices. But where Office Depot is not in the market and just Staples and OfficeMax are present, Staples raises its prices. . . . Where Staples faces no office superstore competition, prices are . . . higher than in three firm markets. . . . In short, if Staples became a superstore monopolist, it would find it profitable to raise prices by much more than 5%.").

[36]   *See* Donna E. Patterson, *Antitrust Enforcement in the Clinton Administration*, 15 ANTITRUST 70, 71–72 (2001).

[37]   *See* Baker & Pitofsky*, supra* note 2, at 24–25.

[38]   The *Brown Shoe* factors are as follows:

The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it. However, within this broad market, well defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. *United States v. E.I. du Pont de Nemours & Co.*, 353 U.S. 586, 593–595. The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors. Because §7 of the Clayton Act prohibits any merger which may substantially lessen competition 'in any line of commerce' it is necessary to examine the effects of a merger in each such economically significant submarket to determine if there is a reasonable probability that the merger will substantially lessen competition. If such a probability is found to exist, the merger is proscribed.

Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962).

One looked to the *Brown Shoe* factors as indicia of the proper definition of the relevant market.[39] And one defined a relevant market in order to estimate shares and concentration.[40] Finally, one estimated shares and concentration as indicators of likely competitive effects.[41] Antitrust practitioners surely felt some uneasiness when following this bumpy set of suppositions.

At the time, this problem was not solved by invoking the FTC and Department of Justice's Horizontal Merger Guidelines' ("Horizontal Merger Guidelines") "hypothetical monopolist test" to define relevant product markets instead of turning to a checklist of the *Brown Shoe* indicia.[42] As George Stigler then commented, even the hypothetical monopolist test "has one, wholly decisive defect: it is completely nonoperational. No method of investigation of data is presented, and no data . . . are specified that will allow the market to be determined empirically."[43] In fact, one reason that antitrust practitioners and jurists had, and continued, to rely upon the "practical indicia" enumerated in *Brown Shoe* was that it was not clear how the hypothetical monopolist test was to be implemented empirically.[44]

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[39]  *See* U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 7, at 3 ("Mergers that cause a significant increase in concentration and result in highly concentrated markets are presumed to be likely to enhance market power, but this presumption can be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power."); *id.* at 7 ("[M]arket definition allows the Agencies to identify market participants and measure market shares and market concentration."); *id.* at 18 ("Market concentration is often one useful indicator of likely competitive effects of a merger. . . . Market shares may not fully reflect the competitive significance of firms in the market or the impact of a merger."); *id.* at 19 ("The higher the post-merger HHI and the increase in the HHI, the greater are the Agencies' potential competitive concerns.").

[40]  *Id.* at 3, 7, 18, 19.

[41]  *Id.*

[42]  The Horizontal Merger Guidelines describe the test as follows:

> The hypothetical monopolist test requires that a product market contain enough substitute products so that it could be subject to post-merger exercise of market power significantly exceeding that existing absent the merger. Specifically, the test requires that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future seller of those products ("hypothetical monopolist") likely would impose at least a small but significant and non-transitory increase in price ("SSNIP") on at least one product in the market, including at least one product sold by one of the merging firms.

U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 7, at 9; *see also* George J. Stigler & Robert A. Sherwin, *The Extent of the Market*, 28 J.L. Econ. 555, 582 (1985).

[43]  Stigler & Sherwin, *supra* note 42, at 582. The subsequent development of diversions and the "aggregate diversion ratio" changed this by offering a calculation to determine the profitability of a price increase by a hypothetical monopolist that is based on empirically estimated diversions and gross margins. Katz & Shapiro, *supra* note 6, at 50. Of course, the question shifted to how diversions can be estimated.

[44]  Notwithstanding the fact that § 4.1.3 of the Horizontal Merger Guidelines is entitled "Implementing the Hypothetical Monopolist Test," the proper execution of this fundamental exercise in defining relevant antitrust markets in the particular context and circumstances presented by each matter continues to present a live question that defines the science and the art of antitrust practice.

The 1984 revision to the Horizontal Merger Guidelines had set the stage for what was to come in *Staples I*.[45] The revision had first articulated that "market share and concentration data [which are the goal of defining relevant markets] provide only the starting point for analyzing the competitive impact of a merger."[46] Further in this spirit, Section 2.2 of the 1992 revision introduced the idea that mergers could lead to a "Lessening of Competition Through Unilateral Effects."[47] These revisions represented a significant change in the approach the agencies would take towards mergers. Previously, the theoretical underpinnings of the agencies' merger analyses focused on coordinated effects—that is, the increased chance of collusion that would arise through mergers of firms with homogenous goods.[48] With these revisions, the agencies began to focus on the possibilities of anti-competitive effects in marketplaces with differentiated products that have both common and distinct characteristics. All suppliers selling differentiated products may compete with one another, but firms that sell products that are "closer substitutes" are more likely to constrain one another competitively.[49] Thus, the central focus began to shift away from the question of "what percent of pens do Staples and Office Depot sell?" to the more nuanced question of "where are Staples customers likely to buy their pens if not at Staples?"

Thus, the time was right for a new approach, one that obviated the need to search for indicators of competitive effects and instead sought to determine directly the likely competitive effects of a merger. But in order to perform sophisticated and comprehensive econometric analyses on the pricing of a large number of products across hundreds of stores, one needs, *inter alia*, large amounts of data, substantial computing power to analyze those data, and the development of analytical tools.[50]

In the ten years preceding *Staples I*, the price of a gigabyte of computer data storage fell by a factor of about 375, from about $75,000 per gigabyte to only about $200 per gigabyte.[51] This made it possible to collect large pricing data sets based on transactions occurring at thousands of cash registers across hundreds of locations. Thus, in response to the second request that it

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[45]  David Scheffman, Malcolm Coate, & Louis Silvia, *Twenty Years of Merger Guidelines Enforcement at the FTC: An Economic Perspective*, 71 ANTITRUST L.J. 277, at 304, 318 (2003).

[46]  U.S. DEPT. OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 14 (1984), https://www.justice.gov/archives/atr/1984-merger-guidelines.

[47]  U.S. DEPT. OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 22 (1992), https://www.justice.gov/archives/atr/1992-merger-guidelines.

[48]  *See* Scheffman et al., *supra* note 45, at 283.

[49]  Orley Ashenfelter, David Ashmore, Jonathan B. Baker, Suzanne Gleason, & Daniel S. Hosken, *Econometric Methods in Staples*, 17 (Princeton Law & Pub. Affairs, Working Paper No. 04-007, 2004), https://ssrn.com/abstract=529144.

[50]  Personalities and the intellectual zeitgeist also surely mattered. That is to say, one needed not just the means, but also the desire and the will to deploy the means.

[51]  Matt Komorowsi, *A History of Storage Cost*, MKOMO, http://www.mkomo.com/cost-per-gigabyte (last updated Sept. 8, 2009).

issued to the merging parties, the FTC received twenty months' worth of weekly price data across over five hundred Staples stores in more than forty metropolitan areas covering about seven thousand individual products.[52] Similarly, over this time period the performance of computer processors increased about a hundred-fold.[53] This made it feasible to analyze the large data sets in a time frame consistent with a merger preliminary injunction hearing. Thus, the FTC staff and its econometrics expert had the technical ability to use hundreds of gigabytes of data to form price indices for four different groups of products sold by Staples and examine how these price indices varied with changes in the number of office supply superstore competitors.[54]

Armed with substantial data, computing power, and with the mastery of quantitative research methods that contemporary graduate programs in economics were imparting to their doctoral students (who had recently joined the antitrust agencies), the FTC was able to perform two different pricing studies to determine how prices varied with changes in market structure.

The first study examined the prices cross-sectionally.[55] That is, it compared prices at a given point in time across geographic regions with different numbers of office supply superstore competitors. For example, the econometric model compared prices in markets with both Staples and Office Depot stores to prices in markets with only a Staples store to determine how Staples' prices varied when it faced Office Depot.

The FTC recognized that its cross-sectional pricing regression results may have been due to unobserved systematic differences (e.g., in costs) between Staples-only markets and markets with both Staples and Office Depot, rather than due to competition between Staples and Office Depot.[56] To address this potential deficiency, the government also provided a more limited panel analysis that examined the price effects of Office Depot either entering or exiting a given market against an incumbent Staples store.[57] Using both of these econometric models, the FTC predicted that if the parties were allowed to consummate their proposed merger, prices would rise on average 8.6 percent in overlap markets.[58]

The merging parties' economic expert largely agreed with many of the modeling assumptions put forth by the FTC's expert.[59] However, there were areas of disagreement. First, the merging parties disagreed with the FTC's expert on the area over which to measure market structure.[60] The FTC held

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[52]  *See Econometric Methods in Staples*, *supra* note 49, at 4, 9–10.

[53]  *See* THE FUTURE OF COMPUTING PERFORMANCE vii (Samuel H. Fuller & Lynette I. Millet eds., 2011).

[54]  *See Econometric Methods in Staples*, *supra* note 49, at 10.

[55]  *Id.* at 6.

[56]  *Id.*

[57]  *Id.* at 7.

[58]  *Id.* at 11.

[59]  *Id.*

[60]  *See Econometric Methods in Staples*, *supra* note 49, at 12.

that the proper geographic area to analyze was the Metropolitan Statistical Area, which reflected the area typically covered by the merging parties' advertisements (and thus their pricing zones).[61] In contrast, the merging parties' expert argued that pricing was constrained at a more local level—at distances of five, ten, or twenty miles.[62] Second, the FTC's expert argued that Staples' pricing policy was uniform across the United States and therefore estimated a single regression model.[63] The merging parties' expert disagreed and contended that Staples' pricing at its stores in California and in certain locations in Pennsylvania was systematically different from its pricing at its other stores.[64] He demonstrated that a statistical test (the "Chow test") rejected the idea that one could treat all stores alike and then estimated the price effects separately for the different groups of stores.[65] He reported to the court a weighted average of the price effects.[66] Finally, the FTC and the merging parties disagreed on the measurement of the price change.[67] While the FTC's expert chose to measure the change in price as an average across geographic regions where Staples and Office Depot competed, the merging parties' expert chose to measure the average change across all Staples stores, whether they competed with an Office Depot or not.[68]

These disagreements were remarkable not for the conflicts themselves, but rather because they did not contemplate industry or public recognition of a potential submarket as a competitively distinct entity, and because they did not ponder the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and the use of specialized vendors. That is, they were quite removed from arguments about the *Brown Shoe* indicia.

Ultimately, the econometric methods put forth by the FTC corroborated what the agency had learned from the parties' documents. While the hearing for preliminary injunction revolved around the econometrics, the district court opinion reverted to the *Brown Shoe* factors, and perhaps more importantly, to what the parties' documents revealed about their competitive interaction.[69] But the foundation for the opinion was surely due to the rigor of the econometric analyses that quantified the magnitude of the anticompetitive price increase that could be expected upon the consummation of the proposed merger.[70] Thus, *Staples I* paved the way forward to a future in which

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61  *Id.* at 12–13.
62  *Id.* at 12.
63  *Id.* at 14.
64  *Id.*
65  *Id.*
66  *Econometric Methods in Staples*, *supra* note 49, at 14.
67  *Id.*
68  *Id.* at 14–15.
69  *See* FTC v. Staples, Inc., 970 F. Supp. 1066, 1078 (D.D.C. 1997).
70  For example, the very first piece of evidence that Judge Hogan's opinion cited to support its conclusions regarding the definition of the relevant product market was the FTC's econometric analyses

merger analysis looked beyond auguries and indicia. Hopes ran high that a new, more scientific, era of antitrust merger analysis lay ahead.

## II.    THE COMPETITIVE EFFECTS REVOLUTION

*Staples I* cast a long shadow and set a marker for empirical, rigorous econometric analyses of pricing data to supplant the hunt for indicia. Contemporaneously, there was an interest in generalizing antitrust concerns regarding mergers of "close[st] substitutes" to evaluate the mergers of products that might be close-enough substitutes.[71] Thus, antitrust practitioners continued to build on *Staples I* by further conceptualizing competitive effects analyses and developing the tools and techniques required to implement these concepts.[72]

Two aspects of *Staples I* had a meaningful influence on the development of competitive effects thought and analytical techniques. First, while the "reduced-form" econometric analysis conducted by both sides in *Staples I* effectively identifies patterns and relationships between variables of antitrust interest (e.g., price and market structure), it was not based on a "ground up"

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of pricing differentials in markets in which Staples did or did not face competition from other office-supply superstores. *Id.* at 1075. The opinion indicated that the Court found that the econometric analyses corresponded to the *Brown Shoe* "sensitivity to price changes" factor. *Id.*

Prof. Jonathan B. Baker, then the Director of the Bureau of Economics at the FTC noted that while the written opinion appeals to "practical indicia," the district court opinion cited the direct evidence presented by the FTC. Jonathan B. Baker, Dir., Bureau of Economic, Fed. Trade Comm'n, Speech, Econometric Analysis in FTC v. Staples, (Jul. 18, 1997), http://www.ftc.gov/public-statements/1997/07/econometric-analysis-ftc-v-staples. He notes that the judge's opinion stated that "direct evidence shows that by eliminating Staples' most significant, and in many markets only, rival, this merger would allow Staples to increase prices or otherwise maintain prices at an anti-competitive level." *Id.* Prof. Baker further notes that while the district court opinion does not specifically address econometric evidence, "presumably in a conscious effort to downplay novelty in order to avoid creating an issue for appeal," certain numbers cited in the district court opinion were only available from econometric evidence. *Id.*

71    The commentary to the Horizontal Merger Guidelines notes the following:

If a significant share of consumers view the products combined by the merger as their first and second choices, the merger may result in a significant unilateral effect. . . . A merger may also produce significant unilateral effects even though a large majority of the substitution away from each merging product goes to non-merging products. The products of the merging firms need only be sufficiently close to each other . . . [to] provide[] a significant incentive to raise prices. . . . A merger may produce significant unilateral effects even though a non-merging product is the 'closest' substitute for every merging product.

U.S. DEP'T. OF JUSTICE & FED. TRADE COMM'N, COMMENTARY ON THE HORIZONTAL MERGER GUIDELINES 27–28 (2006), https://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/215247.pdf.

72    *See* Jonathan B. Baker, *Why Did the Antitrust Agencies Embrace Unilateral Effects?*, 12 GEO. MASON L. REV. 31, 33 (2003).

economic model of price setting and decisionmaking founded on the principles of profit maximization.[73] Consequently, it was susceptible to the criticism that there are multiple explanations for the observed relationships between the model's variables, and some of these explanations have very different antitrust implications.[74] Thus, there was a perceived need to develop empirically applicable tools that had sound underpinnings in economic theory.[75]

Second, there was the very real concern as to how one could obtain the data required to perform competitive effects analyses. The amount of data and the level of detail in the data underlying the econometric analyses conducted in *Staples I* was unprecedented.[76] Concerns were rightly expressed that these kinds of data did not always exist, were not maintained by all firms, or were simply not germane to certain industries.[77] For example, high frequency retail scanner data of pricing in stores that are in varied competitive settings have no analog in industrial manufacturing.

Both of these concerns–namely, (1) providing a rigorous theoretical foundation to ensure that empirically observed statistical relationships between market structure and price reveal causality rather than merely correlation, and (2) seeing a need for analytical tools that can be used to study unilateral effects in industries that do not feature detailed retail scanner data–provided the impetus to further develop empirical methods. Practitioners initially sought to develop the desired theoretical foundation by solving systems of equations based on assumptions regarding individuals' welfare ("utility" in the parlance of economics), an approach that has been labeled "demand system estimation."[78]

Demand system estimation sought to use retail scanner data to estimate the own price elasticities for each product as well as the cross-price elasticities of demand between every pair of products at issue (e.g., brands of liquor, household products, etc.).[79] In turn, these elasticities were used to compute

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[73]   *See* Dennis W. Carlton, *Using Economics to Improve Antitrust Policy*, 2004 COLUM. BUS. L. REV. 283, 293 (2004).

[74]   *See* Craig M. Newmark, *The Positive Correlation of Price and Concentration in Staples: Market Power or Indivisibility?* 7–8 & n.37 (Indep. Inst., Working Paper No. 31, 2001); *see also* Jonathan B. Baker & Daniel L. Rubinfeld, *Empirical Methods In Antitrust Litigation: Review and Critique*, 1 AM. L. & ECON. REV. 386, 391 (1999).

[75]   *See* Baker & Rubinfeld, *supra* note 74, at 431.

[76]   *See* Baker & Pitofsky, *supra* note 3, at 13.

[77]   *See* Baker, *supra* note 72, at 6 & n.52.

[78]   Daniel Hosken, Daniel O'Brien, David Scheffman, & Michael Vita, *Demand System Estimation and its Application to Horizontal Merger Analysis* 26 (Bureau of Economics, Fed. Trade Comm'n., Working Paper, 2002), https://www.ftc.gov/reports/demand-system-estimation-its-application-horizontal-merger-analysis. Demand system estimation is living a second life in competitive effects analysis, as the first step in the "structural estimation" exercises that are the current vogue in industrial organization research; *see also* Carlton, *supra* note 73, at 293–94; Shapiro, *supra* note 3, at 66 n.66.

[79]   *See* Hosken et al., *supra* note 78, at 21.

"diversions," a more intuitively appealing notion describing the degree of substitution between products.[80] Below, this article discusses in more detail the path that diversion analysis has taken.

The estimated elasticities also served as inputs for solving a system of equations characterizing optimal pricing, in order to shed light on what the post-merger firm was likely to do. This approach has come to be known as "merger simulation."[81] Nevo describes the analytical approach.[82] First, a demand system is estimated to determine consumers' patterns of substitution between the products at issue.[83] Then, the derived elasticities are used to estimate the impact of the proposed merger on industry pricing by determining the prices at which each firm's marginal revenue equals its marginal cost, in both the pre-merger and the post-merger world (in the jargon of mathematical economics, to solve the first-order conditions of profit maximization).[84]

In the years immediately following *Staples I*, competitive effects analysis was focused on the development of these concepts and the related mathematical and econometric tools.[85] Demand estimation techniques such as AIDS (Almost Ideal Demand System), multinomial logit (originally dubbed conditional logit), and BLP (Berry, Levinson, Pakes) started peppering antitrust conversations.[86] But these approaches often failed to deliver empirical tools that were grounded in theory and that yielded clear insights into the ultimate antitrust question.[87]

Estimating a demand system is not a straightforward process, and many assumptions must be made in constructing the system that is ultimately estimated. For example, the demand system described by Berry, Levinson and

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[80]    *Id.* at 2.

[81]    *See* Aviv Nevo, *Merger Simulation*, *in* THE NEW PALGRAVE DICTIONARY OF ECON. 1 (2008), http://faculty.wcas.northwestern.edu/~ane686/research/merger_sim.pdf.

[82]    *Id.*

[83]    *Id.*

[84]    *Id.*

[85]    *See* Scheffman et al., *supra* note 45, at 298-99; *see also* Shapiro, *supra* note 3, at 60 ("The biggest shift in merger enforcement between 1992 and 2010 has been the ascendancy of unilateral effects as the theory of adverse competitive effects most often pursued by the Agencies. Prior to 1992, merger enforcement focused primarily on coordinated effects. In recent years, a sizeable majority of DOJ merger investigations have focused on unilateral effects. Along with this pronounced shift in practice has come considerable new economic learning about unilateral effects.")

[86]    *See* Steven Berry, James Levinsohn, & Ariel Pakes, *Differentiated Products Demand Systems from a Combination of Micro and Macro Data: The New Car Market*, 112 J. POL. ECON. 68, 69–70 (2004); Angus Deaton & John Muellbauer, *An Almost Ideal Demand System*, 70 AM. ECON. REV. 312, 312 (1980); Jerry Hausman & Daniel McFadden, *Specification Tests for the Multinomial Logit Model*, 52 ECONOMETRICA 1219, 1219 (1984); Daniel McFadden, *Conditional Logit Analysis of Quantitative Choice Behavior*, *in* FRONTIERS IN ECONOMETRICS 106–07 (Paul Zarembka ed., 1973).

[87]    *See* Christopher R. Knittel & Konstantinos Metaxoglou, *In Search of the Truth: Challenges in Merger Simulation Analysis* 13 (U.C. Davis, Working Paper, 2011), https://pdfs.semanticscholar.org/cad1/a981c21d866f54013816dd48b487717dd820.pdf.

Pakes uses a hedonic pricing model, and is highly sensitive to the set of product characteristics that are included in the model.[88] Logit-based demand systems (e.g., the conditional/multinomial logit due to McFadden, or the antitrust logit model due to Froeb and Werden) include highly restrictive assumptions on the structure of consumers' preferences (e.g., that cross-elasticities are identical across all products, and that a consumer's preference over a pair of products is independent of which other products are available to her (known as the independence of irrelevant alternatives)).[89]

Consequently, demand system estimation fell short of expectations on many fronts. While demand system estimation provides a theoretical basis to empirical work, it involves even greater econometric complexity than the purely reduced-form regressions featured in *Staples I*. In this regard, the practice of competitive effects analysis raised the bar in terms of data requirements, which were already considered to be too onerous for widespread use.[90]

Furthermore, antitrust practitioners quickly learned something that they already knew as consumers: the week to week variance within retail pricing data is quite limited, which restricts the extent to which one can reliably use those data to estimate a demand system. The problem is that retail prices are typically flat from week to week and vary only when a product goes on promotion.[91] Thus, charting retail prices over time tends to display long plateaus, with occasional steps up or down.[92] It is difficult to draw robust inferences about consumers' responses to weekly pricing using data that do not contain meaningful variation.

Further technical difficulties arose from the simple fact that the set of products presented to consumers varied over time, because products often enter and exit the marketplace. In econometric terms, this leads to an "unbalanced panel," which poses a challenge when estimating the demand system.[93] It was also difficult to accurately measure and control for consumers' "inventorying" of products (i.e., the tendency of consumers to purchase and stockpile a product when it was on a pricing promotion). The mathematical

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[88]	*See* Berry et al., *supra* note 86, at 71.

[89]	*See, e.g.*, McFadden, *supra* note 86, at 106–07.

[90]	*See* Scheffman et al., *supra* note 45, at 278.

[91]	*See* Luke Froeb, Daniel Hosken, & Janis Pappalardo, *Economics Research at the FTC: Information, Retrospectives, and Retailing*, 25 REV. OF INDUS. ORG. 353, 369–70 (2004); Igal Hendel & Aviv Nevo, *Sales and Consumer Inventory* 15 (Nat'l Bureau of Econ. Research, Working Paper No. 9048, 2002), http://www.nber.org/papers/w9048.

[92]	*See* Hendel & Nevo, *supra* note 91, at 24.

[93]	Patrick Bajari, C. Lanier Benkard, & Jonathan Levin, *Estimating Dynamic Models of Imperfect Competition*, 75 ECONOMETRICA 1331, 1331 (2007); *see also* Amit Gandhi, Zhentong Lu, & Xiaoxia Shi, *Estimating Demand for Differentiated Products with Error in Market Shares* 7 (Univ. of Wis.-Madison, Working Paper, 2013), https://pdfs.semanticscholar.org/a283/6471d9efb87dfd9d09f891433ddbe6e3079b.pdf.

models underlying the demand estimation tools did not allow for this possibility, and it proved tricky to modify them in a manner that was theoretically sound but that still yielded empirically accessible techniques.

Finally, demand system estimation suffered from the perennial question that plagues the econometric analysis of data on pricing and quantity: endogeneity.[94] Briefly stated, the problem is whether price causes quantity, or quantity causes price. Econometrically, this can come down to a question of whether one is estimating the demand or the supply curve in the marketplace. The literature and exchange of papers regarding the most effective way to address this difficult but important question was robust and sometimes quite pointed.[95] In sum, instead of easing existing concerns, demand system estimation actually raised the ante in terms of data requirements and yielded results of questionable probative value.[96]

Merger simulation tools also suffer from substantial shortcomings. First, they make strong behavioral assumptions regarding the nature of competitive interaction between the various suppliers and the structure of demand. Is it appropriate to model suppliers' behavior as Bertrand competitors (i.e. setting their own prices, while taking others' prices as given), as monopolistic competitors (i.e. behaving as monopoly sellers of differentiated products with free entry), as Cournot competitors (i.e. setting their own quantities, while taking others' quantities as given), or perhaps as a hybrid of these concepts?[97] Importantly, the mathematical equations underlying merger simulation are unable to predict how competitors will respond to changes in prices and competition. Will they change their strategies? Will they reposition their products to occupy a different spot in differentiated product space? Will they introduce new products? Some competitive response along some, or all, of these dimensions is surely expected to occur in the real world.

Merger simulations are unable to include the impact of such real-world competitive dynamics, except through ad hoc changes in the specification of the merger simulation.[98] Furthermore, the results of merger simulations are quite sensitive to the assumptions one makes regarding the curvature of demand around the prices observed in the sample (e.g., linear demand versus constant elasticity demand).[99]

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[94]    *See* Hosken et al., *supra* note 78, at 17.

[95]    *See, e.g.*, Timothy F. Bresnahan, The Apple-Cinnamon Cheerios War: Valuing New Goods, Identifying Market Power, and Economic Measurement 1 (1997) (unpublished manuscript), https://web.stanford.edu/~tbres/Unpublished_Papers/hausman%20recomment.pdf; Jerry Hausman, Reply to Prof. Bresnahan 1 (July 21, 1997) (unpublished manuscript), http://web.stanford.edu/~tbres/Unpublished_Papers/reply%20to%20bresnahan.pdf; *see also* Berry et al., *supra* note 86, at 841.

[96]    *See* Hosken et al., *supra* note 78, at 5.

[97]    *See* Nevo, *supra* note 81, at 2; David A. Weiskopf, *Merger Simulation*, 17 ANTITRUST 57, 58 (2003).

[98]    *See* Weiskopf, *supra* note 97, at 58.

[99]    *See id.*

Finally, merger simulations suffer from another key infirmity. They predict anti-competitive price increases whenever there is any perceived substitutability of the products sold by the merging parties (and it is assumed that the merger yields no offsetting cost reductions).[100] Taken literally, this would suggest that all horizontal mergers are violations of Section 7 of the Clayton Act.[101] Obviously, this cannot be the case. So, merger simulation results need to be interpreted prudently, and only results predicting meaningful price increases should raise concern.

But here, merger simulations run into yet another problem. While a merger simulation would have to predict a meaningful price increase to have antitrust relevance, the tool is constructed to only be valid for local (i.e., very small) changes in prices. Thus, when these models predicted a substantial price increase, they went beyond the neighborhood in which their predictions were effective.[102]

Demand estimation and merger simulation thus proved to be less filling than was hoped for.[103] The need persisted for an approach to competitive effects analysis that was theoretically sound, intuitively understandable and empirically deployable, both in terms of generating statistics that were amenable to empirical estimation and requiring only parsimonious data.

Thus was born the concept of diversions, first introduced in 1996 by Professor Carl Shapiro.[104] Diversions are simply the portion of the sales volume that is lost following a price increase that is redirected to another product.[105] The concept is straightforward, and is motivated by asking why products are not priced higher than they are. The answer is that firms understand the trade-off inherent in raising their prices. They will lose sales to customers unwilling to purchase at higher prices (and thus lose the profits associated with these purchases). But, they stand to make higher margins on the sales that are retained. The question now becomes how a merger changes this calculus. The answer is straightforward. Some of the sales that firm A stood to

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[100]   *See id.*; Mike Walker, *The Potential for Significant Inaccuracies in Merger Simulation Models*, 1 J. COMPETITION L. & ECON. 473, 494 (2005).

[101]   *See id.* at 495.

[102]   Questions about the practical use of such complex mathematical models are also always present. While potentially theoretically sound, these models can be too complex for the comfort of laypeople. *See id.* at 489. This can matter, particularly in litigation that is subject to Federal Rules of Evidence 702 and the *Daubert* standard, which require that expert testimony (such as the results of a merger simulation presented by an expert economist in a preliminary injunction hearing) must be "sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute." Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579, 591 (1993); *see* FED. R. EVID. 702. Digging into the mechanics of a merger simulation may reveal assumptions that are contrary to documentary evidence. For example, the testimony of the plaintiff's expert in *Concord Boat v. Brunswick Corp.* was excluded because it was based on a Cournot oligopoly model of homogenous products that was deemed inconsistent with facts that suggested meaningful differentiation was at play in the marketplace. *See* 21 F. Supp. 2d 923, 940 (E.D. Ark. 1998).

[103]   *See* Walker, *supra* note 100, at 494–95.

[104]   Carl Shapiro, *Mergers with Differentiated Products*, 10 ANTITRUST 23 (1996).

[105]   *See id.* at 24–25.

lose after it raised its price would have gone to firm B. But after A and B merge, these sales would no longer be lost to the combined firm. Instead, the diversion of sales from A to B would be internalized within the combined firm, so that it stands to lose less sales volume following a price increase than firm A did in the pre-merger world. This provides the incentive to raise price.[106] The greater the internalized diversion is (e.g., the larger the number of consumers who would have substituted product B for product A), the greater the incentive to raise price.[107] Similarly, the larger the profit margin on product B, the greater the profit that is internalized within the combined firm, and the larger the incentive to raise price.[108]

Thus, the concept of diversion obviated the need to define relevant markets and make stringent assumptions regarding consumer preferences.[109] It simply circumvented these concepts to focus instead on the critical antitrust question: how do the combined firm's incentives change due to the merger?

Diversion analysis first came to the fore in merger litigation with the FTC's ultimately successful (on appeal) challenge of the proposed merger of Whole Foods and Wild Oats ("*Whole Foods*").[110] Diversions were central to the FTC's case in that matter. The report of Professor Kevin Murphy, the FTC's expert, focused on diversions and direct estimates of competitive effects, and opined on the definition of the relevant market by applying the diversions that had been estimated.[111] Shortly thereafter, the DOJ featured diversions prominently in its successful challenge of the acquisition of TaxACT by H&R Block ("*H&R Block*").[112] The expert report of Dr. Warren-Boulton, the DOJ's expert in that matter, also focused on diversions and opined on the definition of the relevant market by applying estimated diversions.[113] Diversion analysis was thus enshrined in two court decisions involving the antitrust impact of mergers. It was here to stay.

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[106]   Of course, this intuition also underlies the price increases that are predicted by merger simulations. Merger simulations go a step further, and impose a number of assumptions in order to predict the magnitude by which prices will change after a merger. *See* Walker, *supra* note 100, at 477.

[107]   *See Mergers with Differentiated Products*, *supra* note 104, at 24.

[108]   The basic concept of diversion has been subsequently cast as a variety of UPPIs or upward pricing pressure indices. *See id.* The idea behind these indices follows straightforwardly from diversion. At their core, upward pricing pressure indices simply measure the product of the internalized diversion and the profits realized on each sale, so that they translate diversions from a metric of internalized sales quantities (or percentages) to internalized profit dollars. *See id.*

[109]   Daniel L. Rubinfeld, *Econometric Issues in Antitrust Analysis*, 40 J. INSTITUTIONAL & THEORETICAL ECON. 62, 65 (2010).

[110]   *See* Fed. Trade Comm'n v. Whole Foods Market, Inc., 502 F. Supp. 2d 1, 3, 16 (D.D.C. 2007).

[111]   Expert Report of Kevin M. Murphy at 17–25, *Whole Foods*, 502 F. Supp. 2d 1 (No. 1:07-CV-01021), https://www.ftc.gov/sites/default/files/documents/cases/2007/08/070823murphy.pdf.

[112]   *See generally* U.S. v. H&R Block, Inc., 833 F. Supp. 2d 36 (D.D.C. 2011).

[113]   *See id.* at 60–62.

III.   BUT HOW DOES ONE ESTIMATE DIVERSIONS?

Diversions are indisputably an elegant antitrust concept. But there remains the question of how one can estimate diversions from data that are actually available during the merger review process.[114] As this article exhibits, the devil lies in the details. Section A considers the use of historical data on wins-losses and bidding in procuring business to estimate diversions. Section B explores using consumer surveys as a means of estimating diversions. Section C notes how entry events can be studied to estimate diversions. Finally, Section D considers how market shares are sometimes used to estimate diversions.

A.   *Historical Data on Wins-Losses and Bidding*

Early in the post-*Staples I* era, antitrust practitioners realized that ordinary course of business documents that memorialized a company's competitive interactions as it sought to grow or retain its business could provide data probative of diversions.[115] For example, call reports from sales representatives might have recorded the identity of the incumbent supplier at a particular account, the identity of other suppliers who also were courting that customer, or the identity of the supplier who ultimately won that account. Similarly, in industries where business is conducted through a more formal procurement process that might involve bidding, the companies or the customers might keep data on the identity of the incumbent, the list of suppliers participating in the procurement, and the identity of the winner.

These data are amenable to tabulation that provides estimates of diversions. That is, one can track the amount of business that a company lost to each competitor and divide that by the total amount of business that the company lost to all competitors (as opposed to lost to secular reductions in demand) to estimate the diversion from that company to each of its competitors.[116] Bidding data can be used similarly.[117]

Assuming that they are comprehensive (i.e., that they cover the full spectrum of revenues that a company can lose to competitors), win-loss or bidding data can provide reasonable estimates of diversions. However, firms often do not have full information about all of the competitors they are up

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[114]   One approach to estimating diversions is to estimate an entire demand system, and use the estimated matrix of elasticities to estimate diversions. But such an approach would leave the estimation of diversions subject to the same problems discussed above with regard to demand system estimation. *See* Hosken et al., *supra* note 78, at 20.

[115]   *See* Christopher A. Vellturo, *Creating an Effective Diversion: Evaluating Mergers With Differentiated Products*, 11 ANTITRUST 16, 17 (1997).

[116]   *See* Farrell & Shapiro, *supra* note 4, at 14.

[117]   *See id.* at 19.

against and may not have perfect visibility into the outcome of a given competitive situation (e.g., when they did not win the bid). Consequently, different sources of data sometimes conflict with one another (e.g., firm A's data may indicate that it had lost a particular account to firm B while firm B's data do not contain any evidence of having won that account from firm A). Furthermore, while bidding and win-loss data reveal who won/lost business from/to whom, they often do not reveal *why* the customer changed suppliers.[118] Antitrust interest in diversions is focused on substitution at the pricing margin, but records of business that was won or lost could reflect other reasons for the change in suppliers, such as changes in preferences or requirements.[119]

Another risk associated with using win-loss data is how they are interpreted. For example, it can be tempting to take the top choice inferred from tabulations of wins/losses, and assert that the merger of what are revealed to have been closest substitutes must be anticompetitive.[120] But this fails to address the important question of whether the closest competitor is "close enough" to uniquely constrain prices and how close the other competitors are.[121] This issue arose in Oracle's acquisition of PeopleSoft (*Oracle*).[122] In that case, Judge Walker's opinion denying the Department of Justice an injunction to block the merger explained that while the government had shown that PeopleSoft was the "number one competitor" to Oracle in terms of how often the two firms lost business to each other, there was no antitrust concern because the difference between the rate at which Oracle lost business to PeopleSoft and the rate at which it lost business to the next "closest competitor," SAP, was only 1 percent.[123]

Finally, the win-loss data that happen to be available may not be suitable for use in the estimation of diversions. For example, it could be the case that

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[118]    *See* Malcolm B. Coate & Joseph J. Simons, *Critical Loss v. Diversion Analysis: Clearing Up the Confusion*, ANTITRUST CHRON., Dec. 2009, at 1, 7.

[119]    For example, when evaluating a merger of two automobile manufacturers, there may be a record of what car a consumer test drove and what car he currently owned. If the consumer's preferences have not changed, these records may provide a good estimate of diversions. However, one can imagine a situation in which a young couple is trading in their two-door sports car for a station wagon as they transition to family life. It is unlikely that a large station wagon is the best substitute for consumers looking for a two-door sports car.

[120]    U.S. v. Oracle Corp., 331 F. Supp. 2d 1098, 1166–67 (N.D. Cal. 2004); U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 7, at 20.

[121]    Taking the reverse side of this coin, Shapiro questions whether anticompetitive effects must be restricted to circumstances in which the products of the merging firms are "closest substitutes", rather than the more general concern that they are sufficiently close substitutes. *See* Shapiro, *supra* note 3, at 719–20. It also bears note that while the various revisions of the Horizontal Merger Guidelines did not explicitly discuss "closest substitutes," the examples they provided to exposit unilateral effects concerns with regard to differentiated products focused on products that were the first and second best choices for purchasers.

[122]    *See Oracle*, 331 F. Supp. 2d at 1166.

[123]    *See id.*

the Request for Proposal ("RFP") or bidding process underlying the data does not encompass all the channels through which suppliers in the market compete with each other for business.[124] That is, it is important to ensure that the data actually reflect the full breadth of the underlying competitive dynamic, instead of seizing on any data that look like they track wins/losses or bid histories. This concept is discussed further below.

B.   *Consumer Surveys*

In some instances, companies have surveyed their consumers to determine their second-best choices (i.e., what they would purchase if their most preferred brand/product was not available). For example, these types of questions are occasionally posed to consumers in the "usage and attitudes" surveys that consumer packaged goods companies conduct in the ordinary course of business to market their products most effectively.[125] Depending on the integrity of the survey sample and the extent to which the questions that were posed to consumers have clean antitrust ramifications, these types of survey data can present good sources for the estimation of diversions.[126] As with any survey, there is the concern that customers' answers reflect stated preferences, which may be at odds with their revealed preferences.[127] Additionally, one must be careful in interpreting evidence of "cross-shopping" to determine whether it reveals that the products being cross-shopped are substitutes or complements.[128]

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[124]   *See* Krisha A. Cerilli, *Staples/Office Depot: Clarifying Cluster Markets*, ANTITRUST CHRON., Aug. 2016, at 1, 9, https://www.competitionpolicyinternational.com/wp-content/uploads/2016/08/CPI-Chronicle.pdf.

[125]   *Usage and Attitudes*, DUNNHUMBY, https://www.dunnhumby.com/sites/default/files/filepicker/41/Connected_Research_-_Usage_and_Attitudes.pdf.

[126]   If the results of such a survey are not available in ordinary course of business documents, a survey can be commissioned that would examine similar questions, i.e. what product would be chosen if the most preferred product was not available. Commissioned surveys also need to ensure the integrity of the sample, the survey instrument, and the statistical analysis of the responses. For example, in *Whole Foods*, the defendants ultimately did not put their survey expert forward to testify at the preliminary injunction hearing following criticism by the FTC and its survey expert regarding the integrity of her survey's sample and instrument, and the reliability of the responses to the survey. *See* Memorandum in Support of Plaintiffs' Motion in Limine to Exclude the Expert Report and Testimony of Kellyanne Conway at 2–3, Fed. Trade Comm'n v. Whole Foods Market, Inc., 502 F. Supp. 2d 1 (D.D.C. 2007) (No. 1:07-CV-01021), https://www.ftc.gov/sites/default/files/documents/cases/2007/07/070726memo.pdf.

[127]   *See generally* Chris Walters & Graeme Reynolds, *The Use of Customer Surveys for Market Definition and the Competitive Assessment of Horizontal Mergers*, 4 J. COMP. L. & ECON. 411 (2008) (discussing the use of survey data in the merger review process in the UK and providing several examples of relevant cases).

[128]   For example, *Whole Foods* made "cross-shopping" the central focus of its antitrust defense. *Whole Foods*, 548 F.3d at 1040. But the fact that a consumer chooses to incur the time cost to go to two stores suggests that it is possible that the consumer is satisfying different requirements when they visit each store, or that another aspect of complementarity is at work.

C.   *Entry Event Studies*

Following the FTC's challenge of the proposed merger of Whole Foods and Wild Oats, it became accepted practice to estimate diversions by exploiting "natural experiments" that are presented in the form of entry events.[129] The motivation behind using event studies was to move away from demand system estimation and other methods that presented data challenges or theoretical difficulties.[130] Instead, the hope was that the relatively focused and in-market scope of an event study would allow diversions to be more cleanly estimated.[131] In practice, the idea is to compare the perceived substitutability of products A and B to that of products A and C. In this context, entry events allow one to compare the change in the price, quantity, or revenues of product A when product B was made available to consumers relative to the price, quantity, or revenues of product A when product C was made available (controlling for other marketplace factors). If the former is larger than the latter, one can conclude that product B is a closer substitute to product A than is product C.

The primary appeal of this approach is that it quantifies the consumer response to the introduction of a new product (which can be thought of as a large decrease in the price of the new product), so that one obtains a measure of the closeness of substitution without requiring the definition of a relevant market. The results from these event studies can be used to rank competitors based on their closeness of substitution. Or, they can be taken one step further to estimate diversion ratios. The effect of entry on the quantity sold by the

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[129]   The FTC's expert in the Whole Foods matter, Professor Kevin Murphy, relied on entry event studies *inter ali*a to show that Whole Foods and Wild Oats were "uniquely good substitutes for one another." Expert Report of Kevin M. Murphy, *supra* note 111, at 25. Prof. Murphy measured the effect on sales at Wild Oats stores following the entry of a proximate Whole Foods store and found this effect to be "remarkably large and persistent." *Id.* at 24. He also measured the effect of Whole Foods' entry on the gross margins at incumbent Wild Oats stores and found that they fell sharply, for months (but eventually recovered). *See id.* at 24–25.

In theory, exit events also provide a natural experiment. However, exit events can be limited in their probative value. Stores, or plants, are typically closed and firms exit because they have been unsuccessful in the marketplace. Thus, it is likely that the closed facility was competitively irrelevant in the marketplace prior to its actual closure. The trouble is that we don't know when it became competitively irrelevant. In fact, there may not even have been a discrete data on which it became competitively irrelevant. *See* Daniel S. Hosken, Daniel O'Brien, David Scheffman, & Michael Vita, *Can Entry or Exit Event Studies Inform Horizontal Merger Analysis? Evidence from Grocery Retailing*, 54 ECON. INQUIRY 342, 356 (2016).

While entry events may also raise some concerns about endogeneity, the current understanding is that while entry events are amenable for antitrust study, the difficulties associated with drawing an appropriate event window and controlling for endogeneity compromise the value of examining exit events. *See id.*

[130]   *See* Paul A. Johnson, *Entry and Exit Event Analysis*, *in* ISSUES IN COMPETITION LAW AND POLICY ch. 20, at 1 (2009), http://www.bateswhite.com/insight-81.html.

[131]   *See id.* at 2. Sanghvi was the lead economist for the FTC in the Whole Foods matter.

incumbent can be compared to the pre-entry volume sold by the incumbent to estimate the total loss in volume due to entry. This methodology has been favored by the FTC to estimate diversions in hospital matters and with regard to the mergers of retail stores.[132]

While the event study methodology can provide a relatively clean look at the perceived substitutability of products, and its data requirements can be modest (though the recipients of second requests and civil investigative demands related to these event studies would surely contest that characterization), it does require that entry events susceptible for study actually occurred.[133] The lack of identifiable entry events that can be studied econometrically would be an insurmountable obstacle for this approach to estimating diversions.

D.    *Market Shares*

When no win/loss data, bidding histories, consumer surveys or natural experiments are available (or, when the effort to obtain and analyze such data has not been extended), analysts sometimes gravitate toward using market shares to estimate diversions.[134] The desire to obtain an estimate of diversions probative of the underlying competitive dynamic with rudimentary data and the application of minimal analytical machinery and effort is certainly understandable. Whether it is the "Holy Grail" or the "siren song" of competitive effects analysis is another matter.

Mechanically, it is straightforward to calculate share-based diversions.[135] One simply assumes that consumers substitute between products in proportion to their market shares. That is, the estimate of the diversion from product A to product B is specified simply as the market share of product B divided by one minus the market share of product A.

However, it is problematic to claim that share-based diversions offer meaningful insights into the organic competitive dynamic. The entire *raison d'etre* for competitive effects analysis is to obviate the need to define a proper market, because market definition is an imprecise and imperfect exercise that is conducted in order to estimate market shares, which are themselves imperfect indicia of competitive effects. In this context, it appears almost perverse to define markets, estimate shares, and then use those shares to estimate diversions, and claim that this circular process has provided insights into the underlying competitive effects independent of market definition and market

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132    *See* Subramaniam Ramanarayanan, *Diversion Analysis as Applied to Hospital Mergers: A Primer*, NERA ECONOMIC CONSULTING, at 3, http://www.nera.com/content/dam/nera/publications/archive2/PUB_Diversion_Analysis_Hospital_Mergers_0614.pdf.

133    *See* Vellturo, *supra* note 115, at 16.

134    *See id.* at 17.

135    *See id.*

shares. The insights that are afforded by share-based diversions are inherently susceptible to the infirmities associated with reading tea leaves to define markets and draw antitrust inferences from market shares.

Using market shares to estimate diversions has long been recognized as a deeply flawed approach.[136] But, just like merger simulations, after dying an inglorious death at the hands of sustained criticism at the start of the post-*Staples I* era, share-based diversions seem to have risen from the ashes. As antitrust practitioners are aware through their experiences, in the recent past it has not been uncommon for the antitrust agencies to use shares to estimate diversions in merger investigations.

This is surely due to the alleged simplicity of the data requirements and the empirical methods. However, calculating share-based diversions is not as simple as it might appear. In particular, in order to obtain market share estimates, it is self-evident that one has to begin by defining the relevant market. But this may not be a trivial question. For example, when evaluating the merger of two suppliers of detergents, is it proper to consider a market for all types of detergent or should one distinguish between liquid laundry detergents, detergents in a tablet/pod form, and powder detergents? Do detergents that include fabric whiteners or softeners compete equally in the market? How about laundry services? Clearly, defining the relevant antitrust market is complex, and subject to interpretation. This is precisely why it has been a bone of contention in most antitrust litigations as well as antitrust merger investigations at the agencies. It is undoubtedly the focus of major antitrust merger litigation court opinions.[137]

But, without a properly defined market, market share estimates are likely to be substantially flawed. In *Whole Foods*, the FTC defined the product market as "premium natural and organic supermarkets," a market that

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[136]   *See, e.g.*, Jerry A. Hausman & Gregory K. Leonard, *Economic Analysis of Mergers in Differentiated Products Industries: Mergers Using Real World Data*, 5 GEO. MASON L. REV. 321, 339–43 (1997). Antitrust thinking has gone to some length to justify the assumption that shares summarize substitutability, and a variety of economic models have been developed that are based on the first principles of optimization, while also yielding the stylized observation that diversions are proportional to market shares. Most often, these models assume that consumers' preferences can be represented by some form of "logistic utility." However, there is a long-standing literature that has pointed out the very stringent behavioral assumptions and implications that are hidden within the logistic utility assumption, and that discusses the empirical shortcomings of these models (the BLP approach attempts to address some of these concerns with the use of product hedonics). *See* McFadden, *supra* note 86, at 106–07; Hausman & McFadden, *supra* note 86, at 1219 (discussing the problems with the logit model from a technical perspective); *see also* Jerry Hausman, *2010 Merger Guidelines: Empirical Analysis*, ANTITRUST SOURCE, Oct. 2010, at 1 (discussing the same issue from a practitioner's perspective).

[137]   *See generally, e.g.*, United States v. Aetna Inc., No. 16-1494, 2017 WL 325189, (D.D.C. 2017); Fed. Trade Comm'n v. Staples, Inc. (*Staples II*), 190 F. Supp. 3d 100 (D.D.C. 2016); Fed. Trade Comm'n v. Sysco Corporation (*Sysco*), 113 F. Supp. 3d 1 (D.D.C. 2015); United States v. H&R Block, Inc. (*H&R Block*), 831 F. Supp. 2d 27 (D.D.C. 2011); Fed. Trade Comm'n v. Whole Foods Market, Inc. (*Whole Foods*), 502 F. Supp. 2d 1 (D.D.C. 2007); United States v. Oracle Corporation (*Oracle*), 331 F. Supp. 2d 1098 (N.D. Cal. 2004); Fed. Trade Comm'n v. Staples, Inc. (*Staples I*), 970 F. Supp. 1066 (D.D.C. 1997).

was populated by only four suppliers (only two of whom participated in multiple geographic markets).[138] In contrast, the merging parties alleged that the relevant market should be defined as all grocery stores.[139] The two market definitions yielded vastly different market share estimates and hence, very different share-based diversions, which in turn led to very different inferences regarding the competitive effects of the merger.[140]

Even if one assumes that the relevant market is defined properly, share-based diversions can substantially over or underestimate the true diversion ratios because they do not consider the underlying differentiation that is so often at the core of competitive effects concerns. Indeed, this differentiation is what gave rise to the interest in estimating diversions in the first place. Instead, share-based diversion ratios simply assume that the sales lost by product A following a price increase are distributed to the other products in the market in proportion to their pre-merger market shares.[141] This approach assumes both that the market elasticity of demand is zero (so that all purchases are redirected to the other suppliers in the market rather than outside of it), and that the closeness of substitutability between products is summarized fully in their market shares.[142]

An example helps to illustrate the pitfalls of using market shares to estimate diversions in a marketplace that is marked by meaningful product differentiation. Consider the market for automobiles.[143] Both Ford F-150 full size pickup trucks and Toyota Prius hybrid cars have proven quite successful in the marketplace and obtain substantial shares of automobile sales. Thus, a share-based diversion estimate would conclude that F-150 pickups and Toyota Priuses are good substitutes for one another. Yet, this is highly unlikely to be the case in practice.[144]

The purpose of competitive effects analysis is to uncover the true underlying competitive dynamic. It is ironic to use the machinery, mathematical appearance, and rhetoric of competitive effects analysis to simply bottle the same old market share wine in new bottles.

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[138]   *Whole Foods*, 502 F. Supp. 2d at 3–4.

[139]   *See id.* at 15.

[140]   *See id.*

[141]   *See* Vellturo, *supra* note 115, at 17.

[142]   *See id.*

[143]   Interestingly, Berry, Levinsohn, and Pakes' seminal paper on demand system estimation focused on the market for automobiles. *See generally* Berry et al., *supra* note 86.

[144]   BLP's model sought to measure hedonics to mitigate such concerns, but not every marketplace is amenable to the quantification of product attributes for purposes of hedonic measurement.

## IV.  *STAPLES II* AS A CASE STUDY OF COMPETITIVE EFFECTS ANALYSIS GONE WRONG[145]

Eighteen years after the government blocked their first attempt to merge, Staples and Office Depot signed another deal in February 2015.[146] They took at face value the statement made by the FTC in closing its investigation of the merger of Office Depot and Office Max without taking an enforcement action.[147] In this statement, the FTC acknowledged that the market had changed drastically in the recent past and that third parties presented meaningful constraints on competition.[148] The circumstances were indeed different—while the major antitrust concern in *Staples I* was that prices would increase for individual consumers who purchased consumable office supplies at retail through office supply superstores, in *Staples II*, the government conceded early on that individual consumers at retail stores were not likely to be affected by the merger (because they now purchased their office supplies at many other retailers, including online).[149]

The agency focused instead on the potential harm that might be inflicted upon certain targeted customers.[150] These turned out to be the largest business customers of the merging parties, who contracted with the parties for their purchase of consumable office supplies (and other products).[151] Based on diversions estimated from bidding histories emerging from the RFP process, in which the parties competed head to head with one another, and also on its estimates of market shares for consumable office supplies, the government determined that the merging parties were likely the only two—and certainly, by far the largest two—suppliers who could reliably service those customers.[152] On this basis, the government successfully challenged the proposed merger.[153]

But two features of the targeted customers' contracts with the parties have meaningful ramifications for competitive effects analysis. First, these contracts were not exclusive, so that customers were always free to purchase any of the products included in the contract from any other supplier.[154] Second, the contracts covered many products beyond the office supplies that

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[145]    *See* Reilly & Sanghvi, *supra* note 13.

[146]    *See* Fed. Trade Comm'n v. Staples, Inc. (*Staples II*), 190 F. Supp. 3d 100, 109–10 (D.D.C. 2016).

[147]    *See id.* at 125.

[148]    *See* Fed. Trade Comm'n, Statement of the Federal Trade Commission Concerning the Proposed Merger of Office Depot, Inc. and OfficeMax, Inc. (Nov. 1, 2013), https://www.ftc.gov/sites/default/files/documents/closing_letters/office-depot-inc./officemax-inc./131101officedepotofficemaxstatement.pdf.

[149]    *See* Reilly & Sanghvi, *supra* note 13, at 38.

[150]    *See id.*

[151]    *See id.* at 35–36.

[152]    *See id.* at 34–35.

[153]    *See id.* at 34.

[154]    *See id.* at 36.

concerned the government.[155] Both of these marketplace facts turn out to have critical antitrust ramifications that render invalid the inferences that the government sought, and convinced, the judge to draw.

The RFP process, and the fact that the merging parties competed head to head during that process, generated win/loss data that the government, and its expert economist, utilized to estimate diversions of startling magnitude (on the order of 80 percent).[156] If the diversions between the parties were really of that magnitude, antitrust concerns would properly have been raised (particularly if repositioning and entry were unlikely to mitigate competitive injury). However, recall that the contracts that emerged from this bidding process did not require customers to purchase from the winning bidder.[157]

In fact, even after signing a contract with the winning bidder, customers regularly continued to comparison-shop the prices offered by third parties.[158] Upon finding a price lower than their contracted price, the customer could credibly threaten to switch its purchase volume to the respective third party unless the contracted vendor matched the lower price. There were no contractual restrictions preventing customers from buying from third parties, and the growth in internet-based commerce had developed delivery infrastructure so that it was credible for customers to threaten to buy from third parties.[159]

The data showed that this post-RFP competition caused Office Depot to either lower its contracted prices or lose the sale on items accounting for about 70 percent of its sales to the targeted customers.[160] This leads to a very different inference regarding the competitive impact of the merger than does the internalization of diversion amounting to 80 percent that is suggested by using win-loss data from the RFP process.

The problem here was that the government utilized the win-loss data simply because the data existed, and because it had become standard practice to use such data to estimate diversions.[161] The government did not appear to have questioned whether competition for the sale of office supplies to the targeted customers was actually restricted to the four corners of the bidding process that generated those data.[162] If third party competitors could, and did, successfully approach customers outside (and after) the RFP process, in a manner that affected the parties' pricing of these products, it would be inap-

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155    *See* Reilly & Sanghvi, *supra* note 13, at 35.

156    *See id.* at 34; Pl. Proposed Findings of Fact & Conclusions of L. ¶ 111, *Staples II*, 190 F. Supp. 3d 100 (No. 444-1).

157    *See* Reilly & Sanghvi, *supra* note 13, at 36.

158    *See id.* at 36–37. This process was greatly facilitated by the development of search engines and the proliferation of content on the internet. *See id.* at 35.

159    *See id.* at 35–36.

160    *See id.* at 36.

161    *See id.* at 36.

162    *See* Reilly & Sanghvi, *supra* note 13, at 36.

propriate to draw inferences based on the interaction that occurred exclusively within the RFP process.[163] Yet, this is precisely what happened in *Staples II*.[164]

The second flaw compromising the antitrust relevance of the diversions estimated by the government in *Staples II* was that the FTC considered only the diversions of consumable office supplies.[165] It did so because it acknowledged that the targeted customers had numerous other options for their purchases of other products from the parties (referred to by Staples as "BOSS" or, "beyond office supply sales," and by Office Depot as "adjacency sales").[166] The government felt it was proper to exclude these non-office supply products from antitrust scrutiny because there was no dispute as to whether the proposed merger jeopardized the pricing of these products to the targeted customers.[167] In other words, the government simply discarded the diversions to third parties that provided customers with valuable competitive leverage over the merged firm. The facts showed that this had a qualitative impact on the antitrust conclusion, because the profits from the sale of BOSS to targeted customers that the combined firm would be put at peril by pursuing an anti-competitive price increase on office supplies far exceeded the incremental profits that it could earn by imposing a small, but substantial, nontransitory increase in the prices of offices supplies to the targeted customers.[168]

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163   *See id.* at 36–37.

164   *See id.* at 37.

165   *See id.* at 35–36.

166   *See id.* at 38–39.

167   Pl. Proposed Findings of Fact & Conclusions of L. ¶¶ 35–36, *Staples II*, 190 F. Supp. 3d 100 (No. 444-1). In fact, they surely felt that they were being principled and conservative in not alleging competitive harm with regard to the sale of these other products.

168   At trial, the government's expert argued that any leverage from the ability to redirect BOSS purchases also existed equally in the pre-merger world. Reilly & Sanghvi, *supra* note 13, at 38. However, he argued that it should be thought of as having been used up in the pre-merger so that it could not play a role in disciplining the pricing of the combined firm. *See id.* The director of the Bureau of Competition at the time of the government's challenge of *Staples II* echoed this argument during the panel discussion at the GMLR antitrust symposium. *See* Deborah L. Feinstein, Director, Bureau of Competition, Fed. Trade Comm'n, Panel Discussion: From *Staples* to *Staples* – 20 Years of Merger Enforcement in the United States (Feb. 23, 2017), https://vimeo.com/206520537. Both are certainly correct in pointing out that the ability to redirect their BOSS purchases was an option available to customers in the pre-merger world. But that does not end the antitrust inquiry. In fact, that is precisely the point. Suppose that customers' ability to redirect BOSS purchases was sufficient to ensure that they obtained competitive pricing for office suppliers in the pre-merger world. Because the merger would not impinge on their ability to continue to redirect BOSS purchases in the post-merger world, they would retain fully that leverage. That is to say, the leverage obtained from the ability to redirect BOSS is unaffected by the merger. But then, it applies equally in the post-merger world, and the combined firm would not have the incentive to raise the prices of office supplies, because it stood to lose more profits (those associated with the sale of BOSS products) than it would gain. In short, while Prof. Shapiro and the FTC are correct in arguing that the loss of the ability to play competing suppliers against one another cannot by itself improve the bargaining

Thus, ignoring what happened to the sale of these BOSS products had an important impact that biased the government's consideration of diversions. The government assumed that the diversion of BOSS products was irrelevant because it alleged no competitive harm to the sale of BOSS products.[169] However, it ignored the fact that customers displeased with the pricing of office supplies by the combined firm could seek to discipline the post-merger pricing of office supplies by redirecting not just their purchase of office supplies (as in the traditional diversion framework) but also their purchase of BOSS products.[170]

CONCLUSION

The competitive effects revolution that came to the forefront after *Staples I* was built on the understanding that market definition is an imprecise exercise and that the goal of market definition–estimating market shares–is at best an imperfect indicator of the likelihood of anticompetitive effects. In the past, one had to make do with looking at shadows cast on a wall and try to interpret what might have cast those shadows. However, technological developments provided vast amounts of data and computing power, facilitated the development of tools that freed antitrust analysts and scholars from these fetters, and enabled them to turn their heads so as to perceive the thing itself (i.e., to study directly the likely competitive effects of certain conduct).

There is no doubt that the development of the analytical tools used in modern competitive effects analysis has proceeded in fits and starts. Some avenues proved to be dead ends. Other avenues turned out to be theoretically satisfying but empirically untenable, and vice-versa for yet others. Competitive effects analysis has had, and will continue to have, teething problems. But, it is surely a worthwhile endeavor.

However, in the recent past, there has been a reversion to making strong assumptions in order to deploy the tools of competitive effects analysis in a manner that is rejected empirically and that can lead to systematically incorrect antitrust inferences. Market shares (and thus market definition) have re-appeared and assumed central stage, albeit hidden under the rhetoric of competitive effects analysis and under piles of mathematical equations.

The re-emergence of market shares in antitrust, particularly as the foundation for competitive effects analysis, is perverse. It bottles the same old market share wine in new bottles labeled "competitive effects." "Competitive effects analyses" of this sort can lead to antitrust inferences that can be as incorrect and misguided as those obtained by considering market shares as

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position of a customer, it is a separate matter entirely to establish that the customer will be in a strictly worse bargaining position (as is required to establish a Section 7 violation).

[169]    *See* Pl. Proposed Findings of Fact & Conclusions of L. ¶¶ 35–36, *Staples II*, 190 F. Supp. 3d 100 (No. 444-1).

[170]    *See id.*

indicators of the likelihood of competitive injury. The only difference between using market shares directly and using share-based diversions is that the reliance of the antitrust conclusion on market shares is hidden behind a curtain of competitive effects machinery. Similarly, win-loss or other data should not be used blindly to estimate diversions if an organic study of the underlying competitive dynamic indicates that the institution generating these data is not the only channel for competition, or that the pricing of one set of products may affect the pricing of another set of products sold by the firms in question.

It is surely the case that competitive effects analysis is a promising source of antitrust insights. But, as with all else, the devil is in the implementation. When done right (i.e., when conducted under the guidance of an understanding of the totality of the underlying competitive dynamic), competitive effects analysis is a powerful tool. However, as with any powerful tool, it can also do damage when mishandled.