MODULAR MARKET DEFINITION

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Surging interest in antitrust enforcement is exposing politicians and the public to a frustration long known only to the antitrust bar: the difficulty of defining markets. Take the claim that Facebook dominates the market for personal social networking services. Is this true? That depends on how one defines personal social networking services. Or consider a bill, now before the U.S. Senate, that would make certain acts presumptively illegal if undertaken by firms with large market shares. Will this bill strengthen antitrust enforcement? That depends as much on how broadly markets are defined as it does on how the bill sets market share thresholds.

Surprisingly, given its importance, the methodology of market definition is badly underdeveloped. Many tests have been invented for defining markets. But, without any basis for reconciling or balancing these different tests, modern market definition has become an unprincipled hodge-podge of conflicting ideas about what markets are and how they should be defined. The result is unpredictable and unreliable market boundaries—an unsure footing for the complex cases and policy reforms now at issue.

This Article offers a better approach. Modular market definition untangles the current jumble of conflicting tests and reorganizes them as separate market definition modules. It then presents a two-step solution for defining markets in antitrust cases. First, identify the substantive purposes for which markets are being defined in a given case. Second, select the module (that is, test) that defines markets most suited to serving those specific purposes. This

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modular approach opens a path to predictable and reliable market definition. It also contributes to ongoing policy discussions, clarifying how markets work in antitrust law and how they might be leveraged in antitrust reform.

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Introduction

In 1945, the Aluminum Company of America (Alcoa) was like the Apple or Amazon of today. Founded by a backyard inventor who had devised a low-cost way of smelting aluminum, the company had grown into a corporate empire. From its humble start as a smelting operation, Alcoa expanded upstream into mining operations and power generation, and downstream into the fabrication of cookware, cables, and machine parts. Through acquisition and expansion at every level of the supply chain, its operations soon blanketed the nation and suffocated its rivals.[1] In the eyes of the public, Alcoa was a dangerous monopoly, the likes of which the antitrust laws were meant to condemn.[2] Unbeknownst to the public, Alcoa would soon become the catalyst to almost a century of struggle with market definition.

The government sued Alcoa, accusing it of monopolizing the aluminum ingot market, but lost badly at the district court.[3] Undeterred, it appealed to the Supreme Court,[4] only to encountered recusals so numerous that a quorum could not be reached. The stalemate was finally broken when the Court relinquished final review to a panel of the Second Circuit.[5] By this peculiar chain of events, Learned Hand came to write for the court of last resort—his one "Supreme Court" opinion. Hand's always clear-minded analysis did much to produce a reasoned and persuasive resolution of the case. But he struggled, ultimately in vain, to untie one defiant knot: he had no way of knowing what the "aluminum ingot market" encompassed.

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[1] *See generally* Spencer Weber Waller, *The Story of* Alcoa*: The Enduring Questions of Market Power, Conduct, and Remedy in Monopolization Cases*, *in* ANTITRUST STORIES 121 (Eleanor M. Fox & Daniel A. Crane eds., 2007) (providing detailed background on *Alcoa*).

[2] Learned Hand observed as much in a preconference memo: "If we hold that [Alcoa] is not a monopoly, deliberately planned and maintained, every-one who does not get entangled in the legal niceties, and in the incredible nonsense that has emanated from the Supreme Court, will, quite rightly I think, write us down as asses." Memorandum from Judge Learned Hand to Judges Augustus N. Hand & Thomas W. Swan 13–14, United Sates v. Aluminum Co. of Am. (*Alcoa*), 148 F.2d 416 (2d Cir. 1945) (on file in Learned Hand Papers, Harvard Law School Library, Box 207, Folder 17), *as reprinted in* Marc Winerman & William E. Kovacic, *Learned Hand, Alcoa, and the Reluctant Application of the Sherman Act*, 79 ANTITRUST L.J. 295, 295–96 (2013).

[3] United States v. Aluminum Co. of Am., 44 F. Supp. 97 (S.D.N.Y. 1941), *aff'd in part and rev'd in part*, 148 F.2d 416 (2d Cir. 1945).

[4] Direct appeal was permitted under the Expediting Act. Ch. 544, 32 Stat. 823 (1903) (current version at 15 U.S.C. § 29).

[5] The proceeding was postponed indefinitely when recusals resulted in the absence of a quorum. United States v. Aluminum Co. of Am., 320 U.S. 708 (1943). Congress eventually intervened and the case was transferred to the Second Circuit. United States v. Aluminum Co. of Am., 322 U.S. 716 (1944).

Alcoa produced everything from virgin ingot to pots, pans, and machine parts, so the market could potentially have included anything from minerals in the ground to the aluminum products scattered throughout kitchens and garages around the country. That was a problem for Hand, because different ways of slicing the aluminum ingot market led to sharply different outcomes. If he included everything and the kitchen sink in the market, then Alcoa's market share hovered around 60%—big, but not clearly monopoly.[6] If he narrowed the market to just virgin ingot and the secondary metal produced from recycled scrap, then Alcoa's market share shrank to 30%.[7] But if he defined the market as virgin ingot and its initial fabrication, then Alcoa's share rocketed up to an undoubtedly monopolistic 90%.[8]

What Hand needed, to decide the case on a sound and persuasive basis, was a predictable and reliable tool for choosing between these different plausible definitions of the aluminum ingot market. Unfortunately, no such tool existed. No prior opinion had grappled with this problem, at least not to the point of producing useful precedent on defining markets.[9] Without this tool, Hand's opinion was destined to disappoint. Alcoa lost the case—Hand chose the 90% option—but the way the outcome of such an important case had come to hang upon so unprincipled and unpredictable a line-drawing exercise has haunted antitrust ever since.[10]

The world has changed much since 1945 but, in many ways, it is still the same. In place of massive metallurgy companies, public concern about monopoly now stacks against technology giants like Google, Amazon, Facebook, and Apple. The products are different, but if you were trying to say whether Google had monopolized the market for general search services,[11] would the difficulty of identifying the perimeter of that market be any different today than it was for Judge Hand in 1945? Or take the claim that Facebook dominates the market for personal social networking services.[12] Does it? To answer this, we need a way of deciding what else is in this market. Would video-based

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[6] United States v. Aluminum Co. of Am. (*Alcoa*), 148 F.2d 416, 424 (2d Cir. 1945).

[7] *Id.*

[8] *Id.*

[9] *See infra* notes 33–41 (describing market definition before *Alcoa*).

[10] *Alcoa*, 148 F.2d at 422–26 (citing no authority on how to define a market). Hand's market analysis is weak by modern standards. *See* Waller, *supra* note 1, at 130–33. But his conclusions were not necessarily wrong. *See id.* (providing other justifications for Hand's choice of market); *see generally P*eter J. Swan, *The Influence of Recycling on Monopoly Power*, 88 J. POL. ECON. 76 (1980) (defending important aspects of Hand's market analysis).

[11] *See* Complaint ¶ 92, United States v. Google, LLC, No. 1:20-CV-03010 (D.D.C. Oct. 20, 2020).

[12] Complaint for Injunctive and Other Equitable Relief ¶¶ 61–62, Federal Trade Commission v. Facebook, Inc., No. 1:20-CV-03590-JEB (D.D.C. Jan. 13, 2021).

services like YouTube be included? Professional services like LinkedIn? What about email and text messaging? Time marches forward, but the challenges of market definition are ageless.

Another way that antitrust has developed much but changed little is in the invention of tests for defining markets. We are now officially overflowing with these tests. We have tests that define markets based on interchangeability of product uses and upon cross elasticity of demand.[13] We have tests based on things like public perception and trade usage.[14] We have tests based on predictions of how a hypothetical monopolists would behave.[15] We have refinements of these tests based on econometric and statistical techniques.[16] We have yet more refinements based on observed behavior.[17] Just about the only thing we do not have is any way of balancing and reconciling this bewildering heap of varied and conflicting approaches to defining markets.

The result, of course, is that we still do not have a predictable and reliable tool for defining markets. All that we have done is replace the need for judges to make arbitrary and unprincipled decisions about the scope of markets with the need for judges to make arbitrary and unprincipled decisions about what tests will be used to define the scope of markets. This has not made market definition more certain or reliable. If anything, it has done the opposite. Learned Hand at least had common sense and intuition on his side. Modern market definition may not leave us even these.

Consider the surreal path that market definition recently took in *United States v. Sabre Corporation*. The judge started his opinion by observing that

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[13] Times-Picayune Publ'g Co. v. United States, 345 U.S. 594, 612 n.31 (1953); United States v. E. I. du Pont de Nemours & Co. (*Cellophane*), 351 U.S. 377, 395 (1956).

[14] Brown Shoe Co. v. United States, 370 U.S. 294, 325 (1962); *see also* United States v. E. I. du Pont de Nemours & Co. (*du Pont-General Motors*), 353 U.S. 586, 593–94 (1957) (defining a similar test around the identification of "peculiar characteristics and uses").

[15] *E.g.,* LAWRENCE SULLIVAN, HANDBOOK OF THE LAW OF ANTITRUST 4 (1977) (defining markets by asking whether a price increase in a provisional market could be maintained for some time); Rothery Storage & Van Co. v. Atlas Van Lines, Inc., 792 F.2d 210, 218 (D.C. Cir. 1986) (characterizing Sullivan's price-increase maintenance hypothetical as a well-known criterion for defining markets); U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 4.1 (August 19, 2010) [hereinafter 2010 HORIZONTAL MERGER GUIDELINES], http://www.justice.gov/sites/default/files/atr/legacy/2010/08/19/hmg-2010.pdf (describing the Hypothetical Monopolist Tests for defining relevant markets).

[16] *E.g.*, Barry C. Harris & Joseph J. Simons, *Focusing Market Definition: How Much Substitution Is Necessary*, 12 RES. L. & ECON. 207, 211–19 (1989); Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON., Mar. 2010, art. 9, at 1, 4.

[17] *E.g.*, FTC v. Staples, Inc., 970 F. Supp. 1066, 1075–76 (D.D.C. 1997).

the two sides of a merger were active competitors.[18] If two companies compete, then it seems safe to assume they compete in some common market. But the judge also noted that a Supreme Court case described a two-sided platform as competing only with other two-sided platforms.[19] One of the parties in *Sabre* had been called a two-sided platform in a separate matter, while the other seemed to be one sided.[20] Therefore, concluded the judge, the two parties could not "as a matter of antitrust law" occupy a common market.[21] If they were not in a common market, then they could not compete. And if they did not compete, then what harm could the merger do? Not to dismiss this syllogistic reasoning, but shouldn't the finding of actual competition count for something?

Or take another recent case, *FTC v. Rag-Stiftung*. The FTC complained that a merger of two hydrogen peroxide producers risked facilitating tacit collusion among other producers of this commodity chemical.[22] This is a simple theory, and it begs a simple market. Could producers of commodity hydrogen peroxide collude to raise prices? If so, that is a relevant market.[23] The opinion took a different path. First, the judge sliced apart different categories of commodity hydrogen peroxide.[24] Then, he diced the slices into smaller categories based on how this commodity chemical was being used.[25] And then, when the judge turned to look at the evidence—and found none to be available at this microscopic granularity—he declared the FTC had failed to produce evidence to meet its burden and allowed the merger to proceed.[26] By this logic, there are no beaches in the world, only millions of individual grains of sand.

Cases like these are evil omens for efforts to strengthen antitrust through share-based presumptions of illegality. Senator Klobuchar recently cosponsored a bill that would reform antitrust law by making mergers and certain business conduct presumptively illegal if undertaken by firms with more than fifty percent shares of a relevant market.[27] The problem, here, is the same as it was in 1945. Market-share thresholds are inextricably linked with market

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[18] United States v. Sabre Corp., 452 F. Supp. 3d 97, 117–18, 137 (D. Del. 2020), *vacated as moot*, No. 20-1767, 2020 WL 4915824 (3d Cir. July 20, 2020).

[19] *Id.* at 136–37.

[20] *Id.* at 137–38.

[21] *Id.* at 136.

[22] Administrative Part 3 Complaint at 2–3, Evonik/PeroxyChem, No. 191 0029 (2020), https://www.ftc.gov/system/files/documents/cases/d09384_evonik-peroxychem_part_iii_complaint_8-2-19.pdf.

[23] *See infra* Part III.A.1 (discussing the test of market definition in this context).

[24] FTC v. RAG-Stiftung, 436 F. Supp. 3d 278, 299 (D.D.C. 2020).

[25] *Id.* at 303.

[26] *Id.* at 310–11.

[27] S. 225, 117th Cong. §§ 4, 26A (2021).

definition. The strongest presumptions in the world mean nothing if defendants can simply exploit the sloppiness of market definition to escape them.

The current problems with market definition can be understood in terms of carpentry tools. For the past several decades, judges and antitrust experts have all treated market definition like it was a hammer. Hammers are simple tools. Sure, they come in different shapes, sizes, and colors. But, for basic carpentry, any hammer will do. The same hammer fits every nail. When market definition is treated like a hammer, it is assumed to share these properties. Just as the same hammer can be carried from one job to the next, a test of market definition is assumed to work in every context.[28] And just as every hammer leads to the same result when used to pound a nail, every test of market definition is assumed to target the same scope of trade.[29]

Suppose, instead, that market definition were treated like a power drill. Unlike hammers, drills consist of separate parts. One part is the base, which converts electricity into torque. The other part is the drill bit, which converts torque into a hole of a specific size, depth, and shape. Using a drill requires more thought than using a hammer. Even if the drill is only used for making holes, the carpenter still must stop to select the appropriate bit for every job. Treating market definition like a power drill means according it these properties. Just as the right drill bit cannot be chosen without knowing the desired hole, the right test of market definition cannot be chosen without knowing the purposes that the resulting market is meant to serve.

Power drills are examples of modular design: the ability to use different drill bits for different applications is essential to the usefulness of the tool. My thesis in this Article is that market definition can be improved by exploiting similarly modularity in its design. This modularity becomes clear when we drop the hammer metaphor and separate the *purpose* of defining markets, the role that markets play in a particular application of substantive antitrust law, from the *process* of defining markets, the tests we use to decide the scope of markets in a given application. Once these two ideas are severed, it becomes natural to ask: Which of the available processes of market definition best serves the purposes for which we are defining markets in this application? Just as the desired hole guides the selection of a drill bit, this modular approach to market definition lets the substantive purposes of market definition guide the selection of the appropriate test.

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[28] *See* United States v. E. I. du Pont de Nemours & Co., 351 U.S. 377 (1956) ("The 'market' which one must study . . . will vary with the part of commerce under consideration. The tests are constant.").

[29] *See infra* notes 30–31 (citing examples of the modern *everything soup* statement of the standard for market definition).

Modular market definition constitutes a predictable and reliable tool for defining markets in antitrust cases. This Article extracts that tool from antitrust history in Part I, describes the future of the tool in Part II, and explains how the tool can be used *today* in Part III.

I. The History of Market Definition

On what basis do we define markets? A glance at the market definition section of any recent antitrust opinion will reveal several pages of potential tests.[30] What it will not reveal is even the slightest effort to reconcile or balance the—apparently simultaneous—application of all these varied and conflicting approaches to the facts at hand.[31] The result is that summaries of the standard for defining markets often read more like a whiplash tour of antitrust history than they do a useful guide to market definition in a given case.

But, even setting aside the implementation problems raised by multiple tests, on what basis have we come to believe that all these tests are simultaneously helpful in the first place? Antitrust law and policy evolved dramatically over its history to date.[32] Might different tests of market definition have been designed to fit different substantive concerns?

A. Tests based on commodity concepts

Let us start as far back as possible. Long before the passage of the first U.S. antitrust statutes, the common law provided that unreasonable restraints of trade were void as against public policy.[33] Judges deciding restraint of trade cases engaged in a simple form of implicit market definition. They assumed that the scope of competitive effects followed commodity lines.

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[30] *E.g.*, FTC v. Qualcomm Inc., 411 F. Supp. 3d 658, 683–85 (N.D. Cal. 2019), *rev'd and vacated on other grounds*, 969 F.3d 974 (9th Cir. 2020); FTC v. Wilh. Wilhelmsen Holding ASA, 341 F. Supp. 3d 27, 45–47 (D.D.C. 2018); United States v. Anthem, Inc., 236 F. Supp. 3d 171, 193–95 (D.D.C. 2017); FTC v. Sysco Corp., 113 F. Supp. 3d 1, 25–38 (D.D.C. 2015).

[31] *E.g.*, *Wilhelmsen*, 341 F. Supp. 3d at 47 (D.D.C. 2018) (citing both the *Brown Shoe* practical indicia and the HMT as parallel sources of evidence upon which market definition would be based); United States v. Aetna Inc., 240 F. Supp. 3d 1, 20–21 (D.D.C. 2017) (same); *Sysco*, 113 F. Supp. 3d at 27–37 (same); United States v. H & R Block, Inc., 833 F. Supp. 2d 36, 50–52 (D.D.C. 2011) (same).

[32] *See* William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSP. 43 (2000) (chronicling the historic convergence of legal and economic analysis in antitrust).

[33] *See, e.g.*, Mitchel v. Reynolds (1711) 24 Eng. Rep. 347 (discussing the policy motivating this doctrine as it applied to covenants not to compete).

In the late 1800s, for example, courts in many states were called upon to decide whether municipal market regulations were enforceable.[34] To take one representative case, in *City of Bloomington v. Wahl*, a city ordinance provided that fresh meat could only be sold within the designated space of the Bloomington City Market; a meat vendor whose shop lay outside the perimeter of this market objected to the rule as an unreasonable restraint of trade.[35] In his discussion of the case, the judge referred to the "market" as the physical space in the city, but focused on the "business" of selling meat as the area of trade in which the effect of the restraint might be felt.[36] Cases testing the enforceability of voluntary or implied agreements not to compete tended to follow a similar path. Here, judges focused their attention on the restriction of competition within a popularly recognizable line of trade, such as "the business of boating"[37] or the "trade of a baker."[38]

This simple equation of the relevant scope of trade with commodity concepts survived the passage of the Sherman Act. Thus, we see early antitrust opinions address a company's dominance over "the oil industry"[39] and consider the plight of miners in "the coal industry."[40] Also like the common law cases, early antitrust opinions used the term "market" in the sense of a physical location in which a commodity was being traded.[41]

Now, jump ahead to the state of antitrust law in the wake of *Alcoa* in 1945. A systematic method for choosing between alternative views of market scope was obviously needed, but no obvious methodology presented itself. In 1948, the Supreme Court refereed a "sharp dispute" between the government and some merging steel producers concerning the scope of "the market for rolled steel products."[42] Rather than use the opportunity to clarify market definition, the Court recoiled from "the difficulty of laying down a rule as to what areas

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[34] *See, e.g.*, City of Bloomington v. Wahl, 46 Ill. 489 (1868); City of Chicago v. Rumpff, 45 Ill. 90, 97–98 (1867); Caldwell v. City of Alton, 33 Ill. 416 (1864); Gale v. Vill. of Kalamazoo, 23 Mich. 344 (1871); Dunham v. Trustees of Rochester, 1826 WL 2016 (N.Y. Sup. Ct. 1826); Town Council of Winnsboro v. Smart, 45 S.C.L. 551 (S.C. App. L. 1858).

[35] *City of Bloomington*, 46 Ill. at 490–91.

[36] *Id.* at 493 ("If this may be done, the business in this department would fall into the hands of the few, and all competition would be destroyed, and the people oppressed.").

[37] Palmer v. Stebbins, 20 Mass. 188, 193 (1825); *see also* Bergamini v. Bastian, 35 La. Ann. 60, 66 (1883) (the "line of business" of selling coffee and pastries).

[38] Mitchel v. Reynolds (1711) 24 Eng. Rep. 347.

[39] Standard Oil Co. of N.J. v. United States, 221 U.S. 1, 75 (1911).

[40] Appalachian Coals v. United States, 288 U.S. 344, 361 (1933).

[41] *See, e.g.*, *id.* ("Coal has been losing markets to oil, natural gas and water power and has also been losing ground due to greater efficiency in the use of coal."); Bd. of Trade of City of Chi. v. United States, 246 U.S. 231, 239–40 (1918) (discussing the availability of grain markets in different Midwest states).

[42] United States v. Columbia Steel Co., 334 U.S. 495, 508 (1948).

or products are competitive," contributing only a conclusory and fact-bound declaration of the market's scope in this particular case.[43]

Finally, in the mid-1950s, the first tentative steps toward a modern test of market definition begin to appear. In *Times-Picayune Publishing Company v. United States*, the Court counseled that the scope of the market "must be drawn narrowly to exclude any other product to which, within reasonable variations in price, only a limited number of buyers will turn; in technical terms, products whose 'cross-elasticities of demand' are small."[44] A few years later, in the *Cellophane* case, it elaborated that the "market is composed of products that have reasonable interchangeability for the purposes for which they are produced—price, use and qualities considered."[45]

These were important steps in the history of market definition, and the confident language of the *Times Picayune* and *Cellophane* opinions survives today in nearly every statement of the standard for defining markets. In substance, however, these standards of market definition were like a fresh coat of paint on an old car: nice new look, same old engine. The underlying goal was still to define markets by implicit reference to commodity products. All that the new language did was fussy up prior practice.

One way to see this is to note the absence of a decision threshold in either test. Are pens and pencils interchangeable writing instruments? This seems like something upon which people could disagree. But suppose for sake of argument that they are interchangeable; are they *sufficiently* interchangeable to warrant placing them in a common market? How is a judge supposed to answer this question except by personal intuition and reference to common product classifications?[46] This was, of course, the prevailing practice before these tests were introduced.

Another, more subtle, way the tests reflect a focus on commodity products is in their inattention to prevailing prices. In the imaginary world of perfectly competitive trade in commodities, no firm has the power to influence prices, so it is sensible to judge the closeness of products by their substitutability at prevailing prices. This only works in that theoretical world, though. Even a buyer who strongly prefers aluminum over steel may switch to buying steel if the price of aluminum gets too high. This means that, if a company

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[43] *Id.* at 511.

[44] Times-Picayune Pub. Co. v. United States, 345 U.S. 594, 612 n.31 (1953). The opinion also counseled that markets "cannot be measured by metes and bounds." *Id.* at 611.

[45] United States v. E. I. du Pont de Nemours & Co. (*Cellophane*), 351 U.S. 377, 404 (1956).

[46] *See* David Glasner & Sean P. Sullivan, *The Logic of Market Definition*, 83 ANTITRUST L.J. 293, 305 (2020) ("[N]either [test] even attempts to articulate where the cutoff lies. How small must be the cross-elasticity of demand, and how poor must be the interchangeability of use, before the edge of a relevant market has been reached?").

like Alcoa has the market power to raise the price of aluminum, the apparent interchangeability of steel becomes, in part, a matter of how high the price of aluminum is raised.[47] To put it concretely, would we want to define markets in a way that would let a company like Alcoa expand the market—shrinking its market share and thereby escaping liability—simply by raising its prices? If that's not exactly letting the fox guard the hen house, it is only because the fox is not being affirmatively encouraged to eat the hens.

The appeal of the Supreme Court's early market definition tests is limited to the commodity competition context in which they were devised. There is nothing fundamentally wrong with scoping markets by commodity product lines in this narrow context, but neither is there anything that recommends it. No modern antitrust goal is advanced by defining markets according to the *Times Picayune* and *Cellophane* tests today. Fortunately, the history of market definition does not end here.

B. Tests based on popular perception

A few years after the *Times Picayune* and *Cellophane* decisions, a spate of Eisenhauer appointments reshaped the Supreme Court's stance on antitrust. From the late 1950s to the late 1960s, Warren Court antitrust emerged as a machine bent on taking back political control of industry and commerce. Looking at what antitrust was about during this unique epoch in its history, we can quickly see why new and different tests of market definition would be needed to achieve the Court's ends.

One pillar of Warren Court antitrust was a certain type of concern with economic efficiency. A strong sense of "structuralism" persuaded the Court—and many economists of the time—that unconcentrated industries performed better than concentrated industries,[48] and thus that economic efficiency could be promoted by preventing increases in concentration whenever possible. In *United States v. Philadelphia National Bank*, for example, the Court balked at an attempted merger of the second and third largest banks in a local

[47] In the antitrust literature, a closely related concern with this test of market definition is discussed under the title of the "Cellophane fallacy" or the "Cellophane trap." *See, e.g.*, 2B PHILIP E. AREEDA, HERBERT HOVENKAMP & JOHN L. SOLOW, ANTITRUST LAW ¶ 539 (4th ed. 2014); RICHARD POSNER, ANTITRUST LAW 150–51 (2d ed. 2001).

[48] *See* Donald I. Baker & William Blumenthal, *The 1982 Guidelines and Preexisting Law*, 71 CALIF. L. REV. 311, 315 (1983) ("[M]erger policy during the 1960's tended to flow from a simple equation: increases in concentration lead to less efficient performance."); Herbert Hovenkamp, *Markets in Merger Analysis*, 50 ANTITRUST BULL. 887, 889 (2012) (observing that "highly influential in the economic literature of the 1960s, was structuralism, which found a close link between economic performance and market structure").

geographic market.[49] Observing that "competition is likely to be greatest when there are many sellers, none of which has any significant market share,"[50] the Court reasoned that a merger that would give a single firm control over 30% of commercial banking in a local area was "so inherently likely to lessen competition substantially" that it should be enjoined with little further inquiry.[51] This structural concern with competitor concentration undergirds many of the Warren Court's decisions. But even though economic efficiency was an important goal, it was not the Court's primary focus at this time.

The more dominant pillar of Warren Court antitrust was that small and local businesses needed protection against competition from larger and more efficient rivals. In *Brown Shoe Company v. United States*,[52] the Court placed these protectionist goals above efficiency concerns. In amending Section 7 of the Clayton Act, it said, "Congress was desirous of preventing the formation of further oligopolies [because of] their attendant adverse effects upon local control of industry and upon small business."[53] The Court explicitly held that even if "higher costs and prices might result" from the protection of small and local businesses, Congress had "resolved these competing considerations in favor of decentralization."[54]

In short, Warren Court antitrust was about protecting little guys and fending off the creep of industrial concentration.[55] This was a time when even small increases in concentration raised antitrust concerns.[56] It was a time when efficiency advantages were seen as a bad thing.[57] It was a time when cutting prices to win customers could be attacked as anticompetitive.[58] It was a time in need of its own distinct approach to market definition.

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[49] United States v. Phila. Nat. Bank, 374 U.S. 321, 330 (1963).

[50] *Id.* at 363 (internal markup omitted) (quoting Comment, *'Substantially to Lessen Competition . . . ': Current Problems of Horizontal Mergers*, 68 YALE L.J. 1627, 1638–39 (1959)). The Court cited both economists and Congress as supporting this proposition. *Id.* and nn. 38–39.

[51] *Id.* at 363.

[52] Brown Shoe Co. v. United States, 370 U.S. 294 (1962).

[53] *Id.* at 333.

[54] *Id.* at 344.

[55] *Cf.* Thomas E. Kauper, *The Warren Court and the Antitrust Laws: of Economics, Populism, and Cynicism*, 67 MICH. L. REV. 325, 329 (1968) (discussing the "peculiar blend" of economic theory and populism that motivated Warren Court antitrust).

[56] *See, e.g.*, United States v. Von's Grocery Co., 384 U.S. 270, 272 (1966) (breaking up a merger that produced a firm with a total market share of about 7.5 percent).

[57] *See, e.g.*, Hovenkamp, *supra* note 48, at 895 ("The perceived injury in *Brown Shoe* was . . . [that] Brown Shoe would acquire a competitive advantage over its competitors.").

[58] *See, e.g.*, Utah Pie Co. v. Cont'l Baking Co., 386 U.S. 685, 690–98 (1967) (describing price cutting that led to "a deteriorating price structure" as "lessening of competition").

Hints of this new approach can be glimpsed in the Supreme Court's 1957 decision of the *du Pont-General Motors* case.[59] Studiously avoiding any mention of the *Times Picayune* or *Cellophane* tests, the Court defined a narrow market consisting of "automotive finishes and fabrics" by listing off a few "characteristics and uses" that distinguished these products from the broader field of "other finishes and fabrics."[60] Alone, this pivot would not have been that monumental, but it signaled bigger changes to come.[61] When, a few years later, the Court decided *Brown Shoe*, the same opinion that pegged protectionism above efficiency also introduced the next major test of market definition.

The test that *Brown Shoe* announced defined markets[62] by reference to a list of "practical indicia," observational evidence of how businesspeople and the public perceived industry boundaries:

> [Market boundaries] may be determined by examining such practical indicia as industry or public recognition of the [market] 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.[63]

The Court similarly scoped the geographic boundaries of markets by looking to the "commercial realities of the industry."[64] Put another way, what *Brown Shoe* invited judges to do was define markets around such tactile landmarks

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[59] United States v. E. I. du Pont de Nemours & Co. (*du Pont-General Motors*), 353 U.S. 586 (1957).

[60] *Id.* at 593–94 and n.12.

[61] *See, e.g.*, Jesse W. Markham, *The Du Pont-General Motors Decision*, 43 VA. L. REV. 881, 884–88 (1957) (expressing concern about the future consequences of the *du Pont-General Motors* test of market definition); Gregory J. Werden, *The History of Antitrust Market Delineation*, 76 MARQ. L. REV. 123, 143 (1992) (interpreting the *du Pont-General Motors* case as marking "a significant shift in ideology on the Court, which was to prove decisive over the remainder of Chief Justice Warren's tenure").

[62] In truth, *Brown Shoe* described a test for defining "submarkets." The difference between submarkets and relevant markets was unclear from the start and the two soon converged. *See* Geneva Pharm. Tech. Corp. v. Barr Labs. Inc., 386 F.3d 485, 496 (2d Cir. 2004) ("The term 'submarket' is somewhat of a misnomer, since the 'submarket' analysis simply clarifies whether two products are in fact 'reasonable' substitutes and are therefore part of the same market."); 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 47, ¶ 533 (critiquing efforts to distinguish submarkets from relevant markets).

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

[64] *Id.* at 336.

as an industry's own self classification or a lay person's everyday understanding of a what constituted a market or an industry.

The invitation was eagerly accepted. *Brown Shoe* was a merger case, and a review of subsequent merger cases from the 1960s and 1970s shows that the practical indicia test quickly came to dominate market definition analysis.[65] It also diffused into other areas of antitrust law. In 1966, the Court extended the practical indicia test to monopolization cases.[66] Lower courts later extended it to concerted action cases.[67] And when the DOJ released its first merger guidelines in 1968, its own test of market definition drew obvious inspiration from both the *du Pont-General Motors* and *Brown Shoe* tests: markets were defined as "[t]he sales of any product or service which is distinguishable as a matter of commercial practice from other products or services."[68]

Like *Times Picayune* and *Cellophane*, judges still cite *Brown Shoe* as primary authority for defining markets today.[69] And, just like those earlier tests, modern invocations of the practical indicia test are hard to love. Only a few of the practical indicia have any plausible connection to antitrust's current focus on market power and constraints on that power.[70] Sure, some creative judges and scholars have reinterpreted select indicia as evidentiary proxies for

[65] Werden, *supra* note 61, at 172 ("In the two decades following the Supreme Court's decision in *Brown Shoe Co. v. United States*, the submarket concept and the practical indicia dominated thinking on market delineation in the lower courts." (footnote omitted)).

[66] United States v. Grinnell Corp., 384 U.S. 563, 572 (1966) (endorsing, in dicta, the use of *Brown Shoe*'s practical indicia test in monopolization cases).

[67] *E.g.,* Columbia Metal Culvert Co. v. Kaiser Aluminum & Chem. Corp., 579 F.2d 20, 26–27 (3d Cir. 1978) ("[U]nder either s 1 or s 2 of the Sherman Act, judges . . . are adjured to follow the well-trodden trail illuminated by [*Brown Shoe*'s test of market definition]."); Heatransfer Corp. v. Volkswagenwerk, A. G., 553 F.2d 964, 980 (5th Cir. 1977) (similarly applying the practical indicia test to allegations of Section 1 and 2 violations).

[68] U.S. DEP'T OF JUSTICE, MERGER GUIDELINES § 3(i) (1968).

[69] *E.g.*, United States v. Aetna Inc., 240 F. Supp. 3d 1, 21 (D.D.C. 2017) (citing Brown Shoe's practical indicia as one of "a number of analytical tools at [the court's] disposal" for defining markets).

[70] *See* Jonathan Baker, *Market Definition: An Analytical Overview*, 74 ANTITRUST L.J. 129, 149 (2007) (commenting that not all of the practical indicia are related to substitution patterns and noting "confusion and error" where use of the practical indicia has not focused on these patterns); Robert Pitofsky, *New Definitions of Relevant Market and the Assault on Antitrust*, 90 COLUM. L. REV. 1805, 1815 (1990) (describing the distinct customers factor as "problematic" and the industry or the public recognition factor as "decidedly marginal on the question of market definition"); Werden, *supra* note 61, at 172–79 (criticizing the market power significance of several of the practical indicia).

market power considerations.[71] But this anachronism masks the point of the practical indicia test, which was never about market power in the first place.[72]

Judges of *Brown Shoe*'s era rarely even thought to connect market definition with market power.[73] Across forty-four reporter pages, *Brown Shoe* includes one solitary reference to market power, buried in a footnote and without obviously intending to use the term as it is understood today.[74] And why should the Court have spent any time on market power? At that time, antitrust was about preventing industrial concentration and harm to small businesses. "Industry," as the word is used by anyone other than today's antitrust experts, has less to do with market power than it does with similarity of production technologies and recognizable lines of trade—practical indicia factors.[75] To protect the small and local businesses in a market, one must start from some recognizable market in which those businesses can be identified and protected—again, calling for precisely the type of evidence contained in the practical indicial factors.[76]

The practical indicia test is a process of defining markets appropriate for addressing industrial concentration and harm to small businesses.[77] It is a test designed for and around this particular set of antitrust concerns.

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[71] *See, e.g.*, Rothery Storage & Van Co. v. Atlas Van Lines, Inc., 792 F.2d 210, 218–19 (D.C. Cir. 1986) (Bork, C.J.) (reinterpreting the Court's practical indicia as "evidentiary proxies for direct proof of substitutability"); Jonathan Baker, *Stepping Out in an Old Brown Shoe: In Qualified Praise of Submarkets*, 68 ANTITRUST L.J. 203, 205 (2000) ("Some of the seven practical indicia appear related to the identification of buyer substitution patterns, the concern of market definition under the Merger Guidelines.").

[72] Hovenkamp, *supra* note 48, at 896–97 ("[T]he rationale for market definition in *Brown Shoe* was very different from, and is fundamentally at odds with, the rationale for market definition . . . today.").

[73] *See* Werden, *supra* note 61, at 186 (noting the rarity of connecting market definition to market power from the mid-1950s to the mid-1970s).

[74] Brown Shoe Co. v. United States, 370 U.S. 294, 322 n.38 (1962).

[75] *See* 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 47, ¶530a, at 235 n.5 (commenting that the lay term "market" often encompasses trading locations, like a farmers' market, or a "category of manufacture," like the "motors and generators" market); Hovenkamp, *supra* note 48, at 891 (commenting that the term "line of commerce" describes, "in commercial law and other settings . . . a set of products that a layperson might regard as in the same 'line,' such as clothing or groceries.").

[76] *See, e.g.*, United States v. Von's Grocery Co., 384 U.S. 270, 277 (1966) ("Congress sought to preserve competition among many small businesses by arresting a trend toward concentration in its incipiency before that trend developed to the point that a market was left in the grip of a few big companies.").

[77] *Cf.* Lawrence A. Sullivan, *The New Merger Guidelines: An Afterword*, 71 CALIF. L. REV. 632, 639 (1983) (commenting that if one believed "that Congress wanted to maintain markets of many small firms, regardless of effects on costs and prices," then the Court's approach to market definition would be justified).

C. Tests based on joint market power

Now, jump ahead to the 1980s. Antitrust law had changed again. Warren Court antitrust lost momentum during the 1970s. As Donald Baker and William Blumenthal observe: "the Supreme Court last sounded the key populist phrases, … retention of 'local control' and 'protection of small businesses,' … in 1974 in a dissenting opinion."[78] But just as Warren Court antitrust was winding down, the Chicago-School philosophy of scholars like Robert Bork, Frank Easterbrook, and Richard Posner was gaining steam. Several activist Reagan appointees[79] were all the additional encouragement that was needed to crest the peak and descend screaming into a new regime. In a matter of years, antitrust was "cut to a new pattern," as one commentator put it.[80] This meant changes in both antitrust policy and enforcement.

As far as policy, Chicago-School antitrust fiercely pursued one objective: prevent certain exercises of market power and harm to consumer welfare as a way of preserving economic efficiency. Populist goals which had nothing to do with economic efficiency, like the protection of small and local businesses, were unceremoniously jettisoned.[81] Thus, when the DOJ updated its merger guidelines in 1982,[82] the only policy motivating merger enforcement was now the promotion of economic efficiency.[83] Within just a few years, federal judges were extending this primacy of efficiency to all of antitrust law.[84]

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[78] Baker & Blumenthal, *supra* note 48, at 320 n.41 (referring to Gulf Oil Corp. v. Copp Paving Co., 419 U.S. 186, 207 (1974) (Douglas, J., dissenting)).

[79] *Cf.* Phillip Areeda, *Justice's Merger Guidelines: The General Theory*, 71 CALIF. L. REV. 303, 306–07 (1983) (commenting that DOJ officials had "given every indication of a mission to improve and rectify antitrust law, a mission pursued through public statement, amicus briefs, and the Guidelines").

[80] Sullivan, *supra* note 77, at 632; *see also* William F. Baxter, *Responding to the Reaction: The Draftsman's View*, 71 CALIF. L. REV. 618, 618 (1983) (referencing a "trend in antitrust jurisprudence toward a focus on economic efficiency and consumer welfare").

[81] *See* Frank H. Easterbrook, *Workable Antitrust Policy*, 84 MICH. L. REV. 1696, 1703–04 (1986) (describing antitrust goals "other than efficiency (or its close proxy consumers' welfare)" as political questions of income redistribution without "any semblance of 'legal' criteria" upon which judges could decide cases).

[82] U.S. DEP'T OF JUSTICE, MERGER GUIDELINES (June 14, 1982) [hereinafter 1982 MERGER GUIDELINES].

[83] *See* Baker & Blumenthal, *supra* note 48, at 317 ("Where economic, social, and political considerations once received more or less equal billing as the basis for merger policy, economic considerations have now achieved primacy." (footnote omitted)); Robert G. Harris & Thomas M. Jorde, *Market Definition in the Merger Guidelines: Implications for Antitrust Enforcement*, 71 CALIF. L. REV. 464, 465 (1983) ("[T]he thrust of the Merger Guidelines is that economic efficiency is the *only* factor relevant to the enforcement of antitrust laws.").

[84] *E.g.*, Morrison v. Murray Biscuit Co., 797 F.2d 1430, 1437 (7th Cir. 1986) ("The purpose of antitrust law, at least as articulated in the modern cases, is to protect the competitive process

As far as enforcement was concerned, Chicago-School antitrust focused on a few specific ways that market power might be acquired. For instance, the main injury contemplated by the 1982 Merger Guidelines was that a merger would facilitate the exercise of joint market power by enabling explicit or tacit collusion.[85] The basic idea was that, by eliminating a previously independent competitor, a merger could lift a constraint that had been preventing—or at least frustrating—the efforts of competitors to cooperate on joint price elevation.[86] Richard Posner captured this Chicago-School focus in *Hospital Corporation of America v. FTC*, saying that "When an economic approach is taken in a [merger] case, the ultimate issue is whether the challenged acquisition is likely to facilitate collusion."[87]

While judges still needed to define markets and measure market concentration in order to decide merger cases, their reasons for doing so were now a far cry from what had motivated Warren Court judges. Market boundaries were needed only to identify the groups of competitors that could potentially collude on price elevation after a merger. Market concentration mattered only because economic theory suggested that concentrated markets would be more susceptible to collusion than unconcentrated markets.[88] In short, the purposes for which judges were defining markets were now alien to the purposes that had motivated market definition not twenty years before.[89]

A creature of that earlier time, *Brown Shoe*'s practical indicia test was useless for these new purposes. Influential economists like Janusz Ordover and Robert Willig criticized the practical indicia, and earlier tests of market

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as a means of promoting economic efficiency."); *see also* Westman Comm'n Co. v. Hobart Int'l, Inc., 796 F.2d 1216, 1220 (10th Cir. 1986) ("We adhere to the view that the antitrust laws should not restrict the autonomy of independent businessmen when their activities have no adverse impact on the price, quality, and quantity of goods and services offered to the consumer.").

[85] *See* Baker & Blumenthal, *supra* note 48, at 315 ("From among the many conceivable economically based enforcement theories, the Department has plucked one of comparatively narrow (but hardly unanticipated) focus: mergers must not be permitted to enhance substantially the risk of tacit collusion."); *id.* ("[T]he principal risk associated with a merger is that it might better enable firms in the industry to conspire tacitly to increase prices and restrain production.").

[86] Pitofsky, *supra* note 70, at 1807 ("Merger enforcement . . . proceeds from the premise that when a small group of firms occupies a large share of the relevant market, they can more easily collude or coordinate sales policies in order to raise prices above competitive levels.").

[87] Hosp. Corp. of Am. v. F.T.C., 807 F.2d 1381, 1386 (7th Cir. 1986) (Posner, J.).

[88] *See infra* notes 158–159 and accompanying text.

[89] *See Hospital Corporation of America*, 807 F.2d. at 1386 ("[T]he economic concept of competition, rather than any desire to preserve rivals as such, is the lodestar that shall guide the contemporary application of the antitrust laws . . . ."); Baker & Blumenthal, *supra* note 48, at 316 ("Unlike the 1960's cases, however, the Guidelines view concentration as mattering not for its own sake, but because it increases the likelihood of collusion.").

definition, as "inadequate substitute[s] for, and a diversion from, sound direct assessment of a merger's effects."[90] George Stigler called previous market definition "an almost impudent exercise in economic gerrymandering."[91] Baker and Blumenthal castigated Warren Court market definition as "ad hoc evidentiary selection, hand-waving, or result orientation."[92] The common theme was obvious: we needed a new way to define markets.

The 1982 Merger Guidelines responded to this need.[93] The Hypothetical Monopolist Test (HMT), promulgated by the guidelines, delineated markets not by reference to commodity concepts, or by popular perceptions of market boundaries, but by analytically identifying a scope of trade in which collusion among competitors could lead to higher prices.[94] The approach of the HMT was to start by taking a group of producers to be a small provisional market and to ask whether the firms in that market would, if they were hypothetically joined together to act as a monopolist not constrained by price regulation or the entry of new firms, choose to implement at least a small but substantial price increase. If the answer to this question was "yes," then that provisional market was validated as a relevant market for antirust analysis. If "no," then more producers would be added to the provisional market and the process repeated until a price increase would be imposed. At base, the HMT defined a market as a group of competitors who could, at least under ideal circumstances, collude to jointly raise their prices.[95]

The HMT was the darling of 1980s antitrust. Ordover and Willig called it a "noteworthy intellectual feat" that focused "much of the best available economic learning" on the task of "appropriate economic analysis" in merger

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[90] Janusz A. Ordover & Robert D. Willig, *The 1982 Department of Justice Merger Guidelines: An Economic Assessment*, 71 CALIF. L. REV. 535, 536 (1983).

[91] George J. Stigler, *The Economists and the Problem of Monopoly*, 72 AM. ECON. REV., May 1982, at 1, 8.

[92] Baker & Blumenthal, *supra* note 48, at 324.

[93] Though the 1982 Merger Guidelines are often credited as introducing this test, the basic idea seems to have occurred to various authors at about the same time. *See, e.g.*, LAWRENCE SULLIVAN, HANDBOOK OF THE LAW OF ANTITRUST 4 (1977) (defining markets by whether a price increase in a provisional market could be maintained for some time); 2 PHILLIP AREEDA & DONALD F. TURNER, ANTITRUST LAW 347 (1978) (defining markets as groups of firms that would have market power if acting in unison); Gregory J. Werden, *The Use and Misuse of Shipments Data in Defining Geographic Markets*, 26 ANTITRUST BULL. 719, 721 (1981) (defining markets by whether a merger of producers would result in a price increase); Kenneth D. Boyer, *Is There a Principle for Defining Industries?*, 50 S. ECON. J. 761, 763 (1984) (defining markets as ideal collusive groups).

[94] The HMT has been revised over the years but has retained its core structure. *Compare* 1982 MERGER GUIDELINES, *supra* note 82, § II.A, *with* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 4.1.

[95] *See* SULLIVAN, *supra* note 15 (proposing a similarly relaxed version of the test).

cases.[96] Robert Pitofsky called it a "formidable achievement"[97] and credited its "orderly, intellectual approach" with making market definition "a more coherent exercise during the 1980s than in previous decades."[98] Though initially promulgated by the DOJ, the FTC adopted the HMT internally,[99] and soon joined the DOJ in advocating the test.[100] Lower courts similarly adopted the HMT when defining markets in merger cases.[101]

Is it any surprise that commentators had such enthusiasm for the HMT? It was a test of market definition designed for and around the substantive policies of Chicago School antitrust. Like Chicago-School antitrust generally, the HMT was about market power, its enhancement, and its exercise.[102] Like Chicago-School merger enforcement specifically, the HMT looked for groups of competitors that could collude to raise prices.[103]

Chicago-School antitrust extended beyond merger control, and even within merger control it at least recognized the possibility of other types of anticompetitive harm.[104] But the triumph of the HMT was in connecting market definition to the type of joint market power at issue in collusion-facilitation concerns. When the HMT was extended to other antitrust concerns, it needed refinements to fit them.[105]

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[96] Ordover & Willig, *supra* note 90, at 539. *See also id.* at 537 (describing the HMT as "consistent with economic learning and helpful for logically resolving otherwise difficult [market delineation] issues").

[97] Pitofsky, *supra* note 70, at 1822.

[98] *Id.* at 1808.

[99] David Scheffman, Malcolm Coate & Louis Silvia, *Twenty Years of Merger Guidelines Enforcement at the FTC: An Economic Perspective*, 71 ANTITRUST L.J. 277, 281 (2003) ("[A]lmost from the beginning, FTC legal staff embraced the DOJ Guidelines as the analytical framework for merger analysis.").

[100] U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 1.11 (April 2, 1992) [hereinafter 1992 HORIZONTAL MERGER GUIDELINES].

[101] *See* Gregory J. Werden, *The 1982 Merger Guidelines and the Ascent of the Hypothetical Monopolist Paradigm*, 71 ANTITRUST L.J. 253, 270–75 (2003) (cataloging, by circuit, lower court opinions adopting all or part of the HMT).

[102] *See* Pitofsky, *supra* note 70, at 1822 ("[B]y focusing on the capacity for the future exercise of market power, [the HMT asked] a central question that often had been inadequately treated in the past.").

[103] *See* Areeda, *supra* note 79, at 307 ("[The HMT] correctly relate[s] market definition to the ultimate legal issue—the prospect that the merging firms will achieve price-raising power or that the merger will facilitate price coordination among oligopolists.").

[104] 1982 MERGER GUIDELINES, *supra* note 82, § III.A.2 (devoting a single paragraph to a different theory of harm under the heading of the "leading firm proviso").

[105] *See* Glasner & Sullivan, *supra* note 46, at 312–24 (discussing the need to customize the HMT to meet other theories of anticompetitive harm).

D. Tests based on individual market power

Jump ahead another twenty years, however, and the HMT had morphed from darling to demon. The fall from grace was bleak enough that some wondered whether not just the HMT but all of market definition was now on the fast track to interment.[106] What had changed was, again, the substantive law.

The simple models of competition behind Chicago-School antitrust were known from the start to be oversimplified in some important respects,[107] and efforts to enrich them had begun immediately.[108] From the early 1990s to the 2010s, economists revisiting then derelict antitrust concerns—like predatory pricing and vertical restraints of trade—would time and again find them more worrying than Chicago-School antitrust had supposed.[109] This research also led to the discovery of entirely new antitrust concerns.

One such concern was about the unilateral effects of mergers. Recall that in the coordinated effects focus of Chicago-School antitrust, the problem with mergers was that they could facilitate joint exercises of market power—help competitors collude on raising prices. In a unilateral effects focus, the worry is instead that the elimination of all competition between the merging parties would directly enable the merged company to individually raise its prices—even without any collusion or cooperation from its competitors.

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[106] *Cf.* Daniel A. Crane, *Market Power Without Market Definition*, 90 NOTRE DAME L. REV. 31, 33 (2014) ("[T]he handwriting is on the wall for market definition.").

[107] *See, e.g.*, Herbert Hovenkamp, *Antitrust Policy after Chicago*, 84 MICH. L. REV. 213, 256–64 (1985) (critiquing Chicago-School antitrust as relying too heavily on static models of competition without strategic considerations); Richard Schmalensee, *Another Look at Market Power*, 95 HARV. L. REV. 1789, 1793–98 (1982) (illustrating how one influential Chicago-School model's implications changed when restrictive assumptions were relaxed or varied).

[108] *E.g.*, Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, AM. ECON. REV., May 1983, at 267 (illustrating how a dominant firm might profit by strategically raising the production costs of its rivals); Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COLUM. L. REV. 515 (1985) (critiquing the persuasiveness of Chicago-School arguments against antitrust intervention in some leveraging cases); Robert D. Willig, *Merger Analysis, Industrial Organization Theory, and Merger Guidelines*, 1991 BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 281, 299–305 (1991) (describing a modern unilateral effects model for a merger of competitors in a differentiated product space).

[109] *See, e.g.*, United States v. AMR Corp., 335 F.3d 1109, 1114–15 (10th Cir. 2003) (noting that "[r]ecent scholarship has challenged the notion that predatory pricing schemes are implausible and irrational" and that "[p]ost–Chicago economists have theorized that price predation is not only plausible, but profitable, especially in a multi-market context," thus "we do not [approach that theory] with the incredulity that once prevailed"); Herbert Hovenkamp, *Post-Chicago Antitrust: A Review and Critique*, 2001 COLUM. BUS. L. REV. 257, 258 (attributing to Post-Chicago antitrust a less permissive view of the conduct of dominant firms, a more serious concern for the potential effects of mergers, and a greater willingness to consider the anticompetitive potential of vertical restraints).

A prototypical unilateral effects concern was presented in *FTC v. Swedish Match*, a case involving the attempted merger of loose-leaf tobacco sellers Swedish Match and National Tobacco.[110] In the differentiated product space of loose-leaf tobacco, comparable prices, flavor profiles, and brand messages made the tobacco products of Swedish Match and National the best and next-best options for many consumers. If Swedish Match tried to raise its prices, many of these consumers would switch to National, and vice versa if National tried to raise its prices.[111] The concern presented by the merger of these companies was that the termination of their special rivalry would give the merged company an individual incentive to raise its prices. Since customers could no longer punish a price increase by running to the arms of the now-merged rival, why not enjoy this newfound freedom by raising prices a little bit?

The incentive to raise prices following a merger of close competitors in a differentiated product space is intuitive enough, but the magic of the theory is that it can be mathematically modeled with some basic economic assumptions about the competitive process.[112] An economist with adequate data and an appropriate model of competition can even produce a numeric prediction of what the unilateral price effects of a merger will be. In *Swedish Match*, the FTC's expert economist testified that "the merger will result in a price increase of Swedish Match's loose leaf brands of approximately eleven percent and a price increase for National's brands of approximately twenty-one percent."[113] The attraction of such simple numeric predictions in antitrust litigation really cannot be overstated.

Unilateral effects exploded onto the scene. Using data compiled on FTC investigations, Malcolm Coate reports that unilateral effects rose from being the primary focus of less than 20 percent of merger investigations at the start of the 1990s—and presumably something closer to zero before that—to well over 75 percent of merger investigations by 2010.[114] The same change in focus

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[110] FTC v. Swedish Match, 131 F. Supp. 2d 151, 153–54 (D.D.C. 2000).

[111] *Id.* at 169.

[112] *See generally* Margaret Slade, *Merger-Simulations of Unilateral Effects: What Can We Learn from the UK Brewing Industry?*, *in* CASES IN EUROPEAN COMPETITION POLICY: THE ECONOMIC ANALYSIS 312, 313-21(Bruce Lyons ed., 2009) (providing intuition and technical details); Gregory J. Werden & Luke M. Froeb, *Unilateral Effects of Horizontal Mergers*, *in* HANDBOOK OF ANTITRUST ECONOMICS 43 (Paolo Buccirossi, ed., 2008) (same); Gregory J. Werden, *Unilateral Competitive Effects of Horizontal Mergers I: Basic Concepts and Models*, *in* 2 ISSUES IN COMPETITION LAW AND POLICY 1319 (Wayne Dale Collins, ed., 2008) (same); Willig, *supra* note 108 (providing an early and clear articulation of this approach).

[113] *Swedish Match*, 131 F. Supp. 2d at 169.

[114] Malcolm B. Coate, *The Merger Review Process at the Federal Trade Commission from 1989 to 2016*, Table 4 (SSRN Working Paper No. 2955987, February 28, 2018), https://ssrn.com/abstract=2955987 (excluding merger-to-monopoly cases in calculating these figures, and so possibly undercounting the rate at which unilateral effects are the primary

is reflected in the Merger Guidelines. Where the 1982 Merger Guidelines devoted barely a paragraph to a simple precursor of unilateral effects, the 1992 revisions treated unilateral effects and coordinated effects in roughly the same detail, and the 2010 revisions now devote twice as much space to unilateral effects as they do to a far breezier account of coordinated effects.[115]

Returning to how this relates to the HMT, one input that is not required in unilateral effects analysis is the definition of an HMT market. A product of a time when antitrust was about joint market power—not individual market power—the HMT simply focuses on different issues than unilateral effects. For economists and practitioners looking for unilateral effects in mergers, this meant that time spent on the HMT was time wasted. The HMT was soon as fashionable as green shag carpet and wood paneled walls.

One complaint was that the HMT placed competitors either inside or outside a market, with no accounting for degrees of competitive closeness.[116] This had always been true, but its visibility was accentuated by the differentiated products focus of the new unilateral effects concern. Economists like Joseph Farrell and Carl Shapiro warned that, in the differentiated-products context, efforts to delineate markets via the HMT risked allowing outcomes to turn on "an inevitably artificial line-drawing exercise."[117]

Another complaint was that the HMT's indirect path to inferring the implications of a merger was obviated by "direct" estimation of market power in unilateral effects analysis.[118] Economists like Dennis Carlton criticized use of

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concern); *see also* Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 49, 60 (2010) ("The biggest shift in merger enforcement between 1992 and 2010 has been the ascendency of unilateral effects as the theory of adverse competitive effects most often pursued by the Agencies.").

[115] *Compare* 1982 MERGER GUIDELINES, *supra* note 82, § III.A.2, *with* 1992 HORIZONTAL MERGER GUIDELINES, *supra* note 100, §§ 2.1–2.2, *with* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, §§ 6–7.

[116] *E.g.*, 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 47, ¶ 530, at 238 ("This 'either-or' nature of market definition can readily be criticized to the extent that compromises between full inclusion or full exclusion are typically not available.); Mark A. Lemley & Mark P. McKenna, *Is Pepsi Really a Substitute for Coke? Market Definition in Antitrust and IP*, 100 GEO. L. REV. 2055, 2098 (2012) (commenting that market definition "draws an arbitrary line when what we need is a continuum that reflects the partial differentiation of products").

[117] Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON., March 2010, art. 9, at 1, 4.

[118] *See, e.g.*, *id.* at 2, 5 (suggesting that inferences derived from HMT markets are less direct than inferences derived from unilateral effects models); *see also* Malcolm B. Coate & Jeffrey H. Fischer, *Is Market Definition Still Needed After All These Years*, 2 J. ANTITRUST ENFORCEMENT 422, 448 (2014) (describing an analytical choice between market definition and direct estimation of the likely effects of a merger).

the HMT as a "crude" way of predicting market power.[119] Farrell and Shapiro called the HMT "clumsy."[120] Louis Kaplow called it "counterproductive,"[121] and also some less flattering things.[122]

At previous inflection points, we have seen frustration with existing tests of market definition to be the herald of new methodologies. Here, dissatisfaction with the HMT arose from its poor performance in identifying mergers likely to bring about unilateral market power. The price predictions of unilateral effects models were a ready-made solution for identifying this type of harm. We might, therefore, guess that this meant the prediction of a price increase in an appropriate unilateral effects model would become the test of market definition for looking at this particular concern.

But while unilateral effects predictions did slot into this role, a rhetorical wrinkle complicated things. Early proponents of unilateral effects models had introduced their methodology not as a form of market definition, but as a *replacement* for it.[123] Thus, the current merger guidelines declare: "[s]ome of the analytical tools used … to assess competitive effects do not rely on market definition;"[124] the "[diagnosis of] unilateral price effects based on the value of diverted sales need not rely on market definition;"[125] and "[unilateral effect] merger simulation methods need not rely on market definition."[126] What justification could possibly explain the surprising move of treating unilateral effects predictions as *not* market definition?

Is the two-competitor scope of trade bounded by unilateral effects concerns is too narrow to be called a market?[127] The problem with this idea is that "relevant market" has long been a term of art in antitrust.[128] The HMT, universally understood to be a process of market definition, does not identify

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[119] Dennis W. Carlton, *Market Definition: Use and Abuse*, 3 COMPETITION POL'Y INT'L 3, 3 (2007).

[120] Farrell & Shapiro, *supra* note 117, at 1.

[121] Louis Kaplow, *Market Definition and the Merger Guidelines*, 39 REV. IND. ORGAN. 107, 109 (2011).

[122] Louis Kaplow, *Why (Ever) Define Markets?*, 12 HARV. L. REV. 437, 442 (2010) ("useless"); Louis Kaplow, *Market Definition: Impossible and Counter-Productive*, 79 ANTITRUST L.J. 361, 367 (2013) ("pointless"); Louis Kaplow, *Market Definition Alchemy*, 57 ANTITRUST BULL. 915, 926 (2012) ("perverse").

[123] *See* Farrell & Shapiro, *supra* note 117, at 1-2 (proposing one unilateral effects model as an alternative to market definition); *see also supra* note 118 (citing sources for the implicit claim that market definition is not needed merger effects can be directly estimated).

[124] 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 4, para. 2.

[125] *Id.* § 6.1, para. 6.

[126] *Id.* § 6.1, para. 7.

[127] *See* Hovenkamp, *supra* note 48, at 908 (commenting that unilateral harm in a differentiated product space "does not fit well into our conception of market definition").

[128] *See* United States v. H & R Block, Inc., 833 F. Supp. 2d 36, 50 (D.D.C. 2011).

broad and intuitive markets;[129] it scopes an area of trade in which a certain type of market power could be exercised. So does a unilateral effects prediction. In fact, if we take the merging parties as the provisional market in the HMT, and if we take the unilateral effects prediction as evidence that the hypothetical monopolist would increase its prices a small but substantial amount, then the unilateral effects prediction would validate the merging parties as a relevant market under the very methodology of the HMT. How could one of these be market definition if the other is not?

Well, maybe the difference is in precision: does the ability of some unilateral effects models to predict specific price effects differentiate this analysis from qualitative market-based inferences? The problem with this guess is that experienced antitrust practitioners *never* simply accept the predictions of unilateral effects models.[130] Like everything in economics, these models depend on assumptions about human behavior and the competitive process.[131] The predictions can be sensitive to even slight changes in these assumptions.[132] Of course, the accuracy of assumptions can be bolstered by proof that they qualitatively match observed behavior. Of course, sensitivity can be addressed by proof that different assumptions lead to qualitatively similar predictions.[133] But shuffling the qualitative parts of the inference around the table doesn't

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[129] *See* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 4, para. 8 ("Relevant antitrust markets defined according to the hypothetical monopolist test are not always intuitive and may not align with how industry members use the term 'market.'").

[130] *See, e.g.*, Duncan Cameron, Mark Glick, & David Mangum, *Good Riddance to Market Definition?*, 57 ANTITRUST BULL. 719, 734 (2012) ("[O]ne should not confuse the apparent precision of these models . . . with a tool that will generate accurate and reliable measures of market power when applied in the complexity of the real world.").

[131] *See supra* note 108 (listing references to model parameters and assumptions).

[132] *See* Philip Crooke, Luke Froeb, Steven Tschantz, & Gregory J. Werden, *Effects of Assumed Demand Form on Simulated Postmerger Equilibria*, 15 REV. INDUS. ORGAN. 205, 206–08 (1999) (observing how demand curvature can substantially affect model predictions); Roy J. Epstein & Daniel L. Rubinfeld, *Understanding UPP*, 10 B.E. J. THEORETICAL ECON., May 2010, art. 21, at 1, 8 (observing that "the accuracy and reliability of the [a unilateral effects price-pressure index] depends crucially on the accuracy of the diversion ratio [parameter]"); Luke Froeb, Steven Tschantz, & Gregory J. Werden, *Pass-Through Rates and the Price Effects of Mergers*, 23 INT'L J. INDUS. ORG. 703, 710–11 (2005) (noting demand curvature sensitivity); Slade, *supra* note 112, at 331–338 (illustrating the sensitivity of costs, demand systems, and unilateral effects predictions to various possible modeling assumptions); Gregory J Werden & Luke M Froeb, *Choosing Among Tools for Assessing Unilateral Merger Effects*, 7 EUR. COMPETITION J. 155, 158 (2011) (commenting that unilateral effects predictions are valid "only if the model actually captures the essence of competition in a particular industry, and only if the merger itself does not fundamentally change how competitors interact").

[133] *Cf.* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 6.1, para. 7 ("The Agencies . . . place more weight on whether their merger simulations consistently predict substantial price increases than on the precise prediction of any single simulation.").

make them disappear. And if the HMT's reliance on qualitative inferences is what earns it the title of market definition, then unilateral effects predictions deserve that honor as well.

As a final stab, could unilateral effects predictions have been strategically carved off from market definition as an effort to direct generalist judges away from the HMT and other market definition tests when looking at unilateral effect concerns? If that was the plan, it was not the result. Judges, who do not see antitrust cases every day, were unsurprisingly uncomfortable with the idea of simply skipping the venerable practice of defining markets.[134] And, with unilateral effects predictions professedly not market definition, they reached instead for things like the HMT—precisely the wrong result.[135] You cannot look at this situation and help but speculate that market definition might be clearer and more accurate today if unilateral effects predictions had only been labeled as market definition from the start.

Stripped of all the math and rhetoric, the only real difference between the HMT and unilateral effects predictions is the type of market power at issue. The HMT defines markets around potential exercises of joint market power. Unilateral effects predictions define markets around potential exercises of individual market power. The processes are different, but they are both tests for defining markets, each test seeking a scope of trade in which a particular type of market power might be exercised.

II. The Future of Market Definition

The history of market definition is like the history of western architecture. Victorian architectural norms dominated one period; Brutalist aesthetics another; the small-house movement is the most striking fad today. These are all ways to build a house. But imagine an architect telling a client: "The façade should reflect the elegance of the time, but try to stick with just concrete, and if it doesn't fit on a trailer then don't even bother." That is, of course, absurd. Yet equally absurd statements now appear in nearly every description of the standard for defining markets.[136] This is the hammer analogy at work.

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[134] *E.g.*, FTC v. Whole Foods Mkt., Inc., 548 F.3d 1028, 1036 (D.C. Cir. 2008) (objecting that "Inexplicably, the FTC now asserts a market definition is not necessary . . . in contravention of the statute itself"); *see* also City of New York v. Grp. Health Inc., 649 F.3d 151, 155 (2d Cir. 2011) (making failure to allege a plausible relevant market grounds for dismissal); Queen City Pizza, Inc. v. Domino's Pizza, Inc., 124 F.3d 430, 436 (3d Cir. 1997) (same).

[135] *E.g.*, United States v. Aetna Inc., 240 F. Supp. 3d 1, 19–21 (D.D.C. 2017); FTC v. Sysco Corp., 113 F. Supp. 3d 1, 25–38 (D.D.C. 2015); FTC. v. Swedish Match, 131 F. Supp. 2d 151, 159–60 (D.D.C. 2000).

[136] *See supra* notes 30–31.

The history of market definition resists the hammer analogy at every turn. Different tests of market definition were developed to address different issues. New tests were developed not with the intent that they would lead to the same result as earlier tests but with the intent that they would lead to different and more helpful results. The history of market definition is the story of a modular power drill and the incremental addition of new drill bits to the toolbox, each one added to address a new and specific set of needs.

The history of market definition is also the future. Unless we succumb to a particularly thick end-of-history illusion, we cannot seriously look upon the history of antitrust and think that the status quo is here to stay.[137] Just as past evolutions in antitrust policy motivated the development of new tests of market definition, future changes are going to do the same. When that happens, we must be ready to add new drill bits to the toolbox.

Several touchstones guide this exercise. As previous examples illustrate, analytic helpfulness is what makes a test appropriate in a given context. When no test is sufficiently helpful, a new test is needed. The HMT was introduced when existing tests failed to scope markets around joint market power. Other tests plugged similar holes. When a new test is needed, the things that make existing tests unhelpful will indicate what a new test must do.

Other properties of helpful new tests of market definition can also be read off the record of the past. To date, most tests of market definition have played three general roles, which future test of market definition would likely need to play as well.

A. The magnifying glass

One role of market definition is to focus attention on an area of potential concern. If we imagine all of commerce as an impossibly dense and interconnected web of products, uses, and trading partners, then this role of market definition works like dropping a magnifying glass over one part of the web where anticompetitive harm may be felt. The Supreme Court alluded to this function in *FTC v. Indiana Federation of Dentists* when it said the purpose of market definition is to help "determine whether an arrangement has the potential for genuine adverse effects on competition."[138] It had previously made

[137] *See* William E. Kovacic, *The Modern Evolution of U.S. Competition Policy Enforcement Norms*, 71 ANTITRUST L.J. 377, 400 (2003) (commenting on the inevitability of evolution and change in competition policy and enforcement norms).

[138] FTC v. Ind. Fed'n of Dentists, 476 U.S. 447, 460 (1986) (according this definition to "the inquiries into market definition and market power"); *see also* FTC v. Actavis, Inc., 570 U.S. 136, 153–56 (2013) (returning to the "potential for genuine adverse effects on competition" as a gating question in determining whether antitrust remedies are available).

the point even more clearly in *Philadelphia National Bank*, saying that market definition identified the part of trade where "the effect [of the challenged act] on competition will be direct and immediate."[139]

But while these statements are a good start at explaining the magnifying role of market definition, they are incomplete. They leave out the strength of magnification, of all things. Is the point to fully bound the range of potential harm? If so, we should draw markets broadly and magnify weakly, capturing every part of the web where harm is possible but scooping up lots of irrelevant stuff, too. Or is the point to clearly identify one particular area of concern? If that is the case, then we would draw markets narrowly and magnify strongly, zooming in tight on one area of concern without necessarily capturing the full range of harm—at least, not all at once.

Of all market definition tests to date, only the early commodity concept tests chose the weak magnification approach. There are reasons why this may have made sense at the time. Rule of reason analysis was once a vague and shifting target.[140] Before more serious reliance on economics began to compel a sharper focus on individual actors and market behavior,[141] there would have been some benefit in matching the wide prowl of antitrust with equally expansive markets. The *Times Picayune* and *Cellophane* tests pursued wide markets, and little else.[142]

The commodity concept tests are in every sense an outlier. In *Brown Shoe*, the Supreme Court categorized *Times Picayune* and *Cellophane* as describing the "outer boundaries of a product market."[143] And, since *Brown Shoe*, no test of market definition has shown even the least bit of interest in these far-off outer boundaries. Modern tests instead focus strong magnifying glasses on specific concerns.

Start with *Brown Shoe* itself. The practical indicia test was a response to concerns about increasing concentration and the plight of small and local businesses.[144] To guard against rising concentration in industries as popularly understood, judges needed to be able to identify industries as popularly understood. To protect small and local businesses, judges needed to be able to pick out groups of businesses whose common interests can be evaluated and

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[139] United States v. Phila. Nat. Bank, 374 U.S. 321, 357 (1963) (describing definition of the geographic market in a merger case, but not obviously limiting the principle to this context).

[140] *See, e.g.*, Bd. of Trade of City of Chicago v. United States, 246 U.S. 231, 238–39 (1918) (prescribing, as the "true test of legality," a broad factual inquiry without clear standards for deciding when a restraint of trade was reasonable or unreasonable).

[141] *Cf.* Kovacic & Shapiro, *supra* note 32, at 49–52 (describing the late introduction of market structure inferences in rule of reason analysis).

[142] *See supra* notes 46–47 and accompanying text.

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

[144] *See supra* notes 48–54 and accompanying text.

protected.[145] The practical indicia test serves up the type of narrow and intuitive markets needed to address these concerns.

Of course, the cost to strong magnification is that it crops out peripheral details. In the case of the practical indicia test, this means that the markets defined by this test do not purport to scope the full range of potential harm. The public could recognize a national shoe market at the same time that it recognized smaller city-level markets.[146] Addressing structural and protectionist concerns could mean intervening at either level or both. The Supreme Court responded to this in *Brown Shoe* with an invitation to define multiple markets where necessary.[147] This has not been necessary as often as you might think, however, since harm in any single market is often sufficient to establish illegality, mooting the need to look at other markets.[148]

The HMT is a very different test, but it closely follows the pattern of the practical indicia test in performing its magnifying-glass duties. Here, the concern is that a merger could facilitate something like tacit collusion on joint price elevation.[149] The HMT scopes markets around this potential injury.[150] In doing so, it again adopts the narrow market and strong magnification strategy. Suppose that a merger of two steel manufacturer-and-fabricator companies risks facilitating collusion among other manufacturers, other fabrications, or both. The HMT could be used to validate any of these potential collusive rings as a relevant market. Nested markets are also possible: if joint market power could be exercised by the competitors in a given market, then it could usually be exercised by the competitors in any arbitrary expansion of that market as well.[151] As before, the HMT zooms in to focus on one possible

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[145] *Brown Shoe* observed that Congress had intended "the protection of competition, not competitors." *Brown Shoe*, 370 U.S. at 320. This position is reconcilable with the protection of small businesses if that protection is required to accrue to the benefit of all small and local businesses in a recognizable market, not just to specific competitors.

[146] *See, e.g.*, *Brown Shoe*, 370 U.S. at 325 (identifying a national shoe market for one aspects of a merger and a series of local shoe markets defined around cities with populations exceeding 10,000 for another aspect of the merger).

[147] *Id.* at 325, 336 (commenting that within any broader market there may exist submarkets that are also appropriate markets for antitrust scrutiny).

[148] *See id.* at 325 (commenting that "it is necessary to examine the effects of a merger in each [economically significant market]" because if a probable lessening of competition is found in any such market, "the merger is proscribed"); United States v. E. I. du Pont de Nemours & Co. (*du Pont-General Motors*), 353 U.S. 586, 595 (1957) (similar).

[149] *See supra* notes 85–87 and accompanying text.

[150] *See* 2B AREEDA, HOVENKAMP & SOLOW, *supra* note 47, ¶ 533e, at 275 ("The function of defining a market [by the HMT] is to determine that grouping of sales that, if controlled by a single firm or a cartel, could charge noncompetitive prices.").

[151] *See* Glasner & Sullivan, *supra* note 46, at 332–33 (elaborating on this point and providing an illustrative example).

area of harm—say, the potential collusion among steel manufacturers—without prejudice to the possibility of other areas of harm. Also like the practical indicia test, nothing prohibits the use of multiple HMT markets when doing so would be helpful.[152]

Unilateral effects predictions also follow this pattern. Here, the concern is with individual exercises of market power, and the predicted price increases following the merger of two competitors identifies these competitors as being capable of exercising individual market power after merging.[153] Like the previous tests, the scope of concern is not exhaustive. A merger could, for example, have both unilateral and coordinated effects. If so, these distinct injuries would usually be scoped by distinct tests of market definition.

The idea that emerges from this discussion of market definition as magnifying glass is that helpful future tests of market definition would do well to seek lenses that offer strong magnification of the actors and actions most relevant to a particular concern. The point of this type of market is not to exhaust the full range of potential harm. The point is to help judges and litigants focus their attention on one area of serious concern at a time.

B. The cast of characters

Another role of market definition is to move antitrust concerns out of the abstract world of political and economic theories and into the more familiar courtroom context of actual people and companies doing things in the world. Competitors are identified and given substance, victims are pinpointed and given voices, the heroes and villains of an antitrust story spring to life, all within the universe of a market as it is defined. Do not be fooled into thinking this is squishy, poetic, and trivial—it is not.[154]

Take the markets implicitly defined by unilateral effects predictions. Sophisticated mathematical models are often used to produce these predictions. The jargon alone can be an obstacle to understanding the methodology. But the story the predictions tell is another matter. These two companies are close competitors; if they merge, they may be able to raise their prices.[155] Here are

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[152] *See id.* at 326–36 (providing an extended defense of the delineation of multiple relevant markets using something like the HMT).

[153] *See* sources cited *supra* note 112 (summarizing unilateral effects models).

[154] *See* Gregory J. Werden, *Why (Ever) Define Markets? An Answer to Professor Kaplow*, 78 ANTITRUST L.J. 729, 740–43 (2013) (discussing the narrative role that market definition plays in antitrust litigation); Steven C. Salop, *The First Principles Approach to Antitrust, Kodak, and Antitrust at the Millennium*, 68 ANTITRUST L.J. 187, 191-92 (2000) (observing how market definition identifies key actors in a theory of harm).

[155] *See* sources cited *supra* note 112 (summarizing unilateral effects models).

the consumers who would feel the pinch of that price increase.[156] Here are the other competitors best positioned to stop the price increase if they reposition or introduce new products.[157] The actual interactions of these characters is what will determine whether the feared competitive injury takes place. This is not some simplistic dumbing down of the underlying economic theory; it is the precise translation of that theory into statements about how the interactions of these real actors will or will not result in competitive harm.

As another example, consider how the HMT facilitates evaluation of tacit collusion. Economic models paint collusive agreements as enticing but unstable.[158] Every member of a collusive agreement stands to profit from joining it. But, as soon as an agreement is struck, every member would profit by cheating on it. An agreement to join your competitors in a ten percent price increase sounds great; a secret plan to poach customers while your competitors blindly raise their prices may sound even better. The threat of collusion therefore turns upon how likely the members of a collusive group are to stabilize their agreements. How many members would be in the collusive group? More members means more ways for things to collapse.[159] Do all the members have similar incentives? More diversity in interests means more opportunities for agreements never to get reached in the first place.[160]

Now consider what the HTM does. It defines a market as a potential collusive group: a group of competitors with the joint market power to collude. The members of an HMT market are the characters whose interactions will determine whether collusive behavior takes off. Are there many companies in

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[156] *See* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 6.1, para. 4 (identifying the subset of consumers most likely affected by such a merger).

[157] *See id.* § 6.1, para. 8 (discussing the potential responses of non-merging competitors). Whether we call this market structure or entry analysis, the substance is the same. *See* Coate & Fischer, *supra* note 118, at 433 (suggesting that market structure analysis, entry analysis, and repositioning considerations all address common concerns).

[158] *See, e.g.*, Louis Kaplow & Carl Shapiro, *Antitrust*, *in* 2 HANDBOOK OF LAW AND ECONOMICS 1073, § 3.2.1 (A. Mitchell Polinsky & Steven Shavell eds., 2007) (summarizing elements of successful collusion in economic models of oligopoly).

[159] *See id.* at 1112 ("Collusive outcomes are less likely to occur in industries with more firms because greater numbers make it more difficult to satisfy the . . . conditions necessary for successful collusion."); Ordover & Willig, *supra* note 90, at 555 ("The view that a reduction in the number of firms facilitates coordinated use of assets among the incumbent firms is a rock upon which much of industrial economics has been built."); George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 55 (1964) (modeling cartel stability as a function of market concentration, itself a function of the number of important competitors in a market).

[160] *See generally* Jonathan B. Baker, *Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws*, 77 N.Y. U. L. REV. 135 (2002) (discussing incentive-heterogeneity considerations at length).

this group? Do certain of them have incentives that differ from the others?[161] Again, market definition translates abstract economic theory into concrete inquiries about companies in the world. And market definition really is where this translation takes place. The number and incentives of companies in a market defined by something other than the HMT may not have *any* reliable relationship to the risk of possible collusion among market participants.

Brown Shoe's practical indicia test is more grounded in political and social philosophy than in modern economics, and it constructs its cast of characters around this different focus. During the heyday of Warren Court antitrust, concerns did not run from changes in concentration to changes in specific types of market power. The inference was more direct. Increasing concentration was understood as harm to competition.[162] The goal of preserving markets of small and local competitors was offended by any meaningful increase in concentration. Increasing concentration was not evidence of a problem—it *was* the problem.[163]

By scoping markets around recognizable industries, the practical indicia test identifies the important characters in this stance on antitrust. Those characters are not individual companies but whole markets and entire industries. If the objective is to preserve a deconcentrated shoe market, for instance, then the central character in the plot is the shoe market. The features of that market, its history and its likely future, become character traits relevant and important to applying the substantive law.[164]

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[161] *Cf.* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 7.2 (listing these and many related factual considerations).

[162] *E.g.*, George J. Stigler, *Mergers and Preventive Antitrust Policy*, 104 U. PA. L. REV. 176, 181-82 (1955) (describing a tight connection between industrial concentration and effectiveness of competition); *see* Jonathan B. Baker, *Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws*, 77 N.Y. U. L. REV. 135, 138 (2002) (The dominant and largely unquestioned view among economists and antitrust commentators [at this time] was that when only a few firms competed in an industry, they readily would find a way to reduce rivalry, collude tacitly, and raise prices above the competitive level); *cf.* CARL KAYSEN & DONALD F. TURNER, ANTITRUST POLICY: AN ECONOMIC AND LEGAL ANALYSIS 132-36 (1959) (suggesting the presumptive illegality of any merger resulting in a firm with more than a twenty percent share of the market).

[163] *See, e.g.*, Brown Shoe Co. v. United States, 370 U.S. 294, 315 (1962) (noting "fear of what was considered to be a rising tide of economic concentration in the American economy"); *id.* at 346 ("We cannot avoid the mandate . . . that tendencies toward concentration in industry are to be curbed in their incipiency . . . ."); *id.* at 345 n.72 (concluding that Congress sought "to prevent even small mergers that added to concentration in an industry").

[164] *See, e.g.*, *Brown Shoe*, 370 U.S. at 322 n.38 ("[O]nly . . . examination of the particular market—its structure, history and probable future—can provide the appropriate setting for judging the probable anticompetitive effect of the merger."); United States v. Cont'l Can Co., 378 U.S. 441, 458–66 (1964) (discussing various features of the metal can and glass industries and how a merger would change the nature of competition in these industries); *see also* United

The takeaway, for future tests of market definition, is the value in translating abstract economic or political theories into manageable accounts of the interactions of concrete characters. Nothing compels that markets must serve this role, but they have historically done so, and the courtroom application of antitrust law has doubtless benefited from it.

C. The test lab

Another role of market definition is to construct test labs for the analysis of antitrust concerns. Market definition has long been described as helping to organize antitrust analysis.[165] It does that, but it does more. Entry analysis is almost always an important question in antitrust litigation. Unless there are barriers to entry, new firms can enter to restore lost competition and alleviate concerns. Judges and juries must therefore ask how easy it would be for new firms to enter a market—a question which really only makes sense within the context of a market.[166] In this and other ways, markets act like test labs for those conducting antitrust analysis.

What types of analysis take place in the test lab? For the evaluation of possible post-merger tacit collusion, Philip Areeda rattles off a withering list of questions that typically need to be explored:

> [Market structure inferences] do not purport to be determinative but are to be considered along with ease of entry, degree of product homogeneity, next closest products or producers excluded from the market definition, buyer concentration, information availability or exchanges, economic performance,

States v. Bethlehem Steel Corp, 168 F. Supp. 576, 583 (S.D.N.Y. 1958) ("The contending positions of the parties can be understood only against the background and general pattern of the iron and steel industry, the making and distribution of steel and steel products, the nature, size and location of the companies in the industry, the nature of competition in the industry generally . . . .").

[165] *See* SULLIVAN, *supra* note 93, at 64 ("[T]he only purpose for defining a market is to organize available data in a way which facilitates judgment about the extent of that power."); Franklin M. Fisher, *Economic Analysis and "Bright-Line" Tests*, 4 J. COMPETITION L. & ECON. 129, 130 (2008) ("Market definition can be a useful tool, a way to begin organizing the material that must be studied.").

[166] *See* Fisher, *supra* note 165, at 131 ("Ease of entry must also be considered, and one might reasonably say that such a consideration requires one to know what it is that is being entered."); Werden, *supra* note 154, at 729 ("Even if antitrust analysis never used market shares, the relevant market would remain essential for examining entry prospects and the durability of market power."); *see also* Crane, *supra* note 106, at 48 (questioning how entry can be assessed "in a 'direct' market power analysis since entry barriers require identification of a market into which entry is difficult").

> prior disruptiveness of a merging firm, and such practices as price protection clauses, product standardization, delivered pricing, past collusion, and other matters affecting the ease of tacit price coordination.[167]

He could have kept going. Historic market stability can be an important consideration,[168] as can things like the frequency of contact between competitors across different markets[169] and the way that a merger changes the incentives of merging firms.[170] You can see how tightly bonded these inquiries are with market boundaries. Product homogeneity, next closest products excluded from the market, buyer concentration—these inquiries are intuitive and sensible only within the context of a given market.

For the structuralist and protectionist concerns behind the practical indicia test, market definition serves the related function of acting as a laboratory for examining characteristics of an industry. In *Brown Shoe*, the Court noted "Congress' express intent" that mergers be assessed "within an industry framework almost inevitably unique in every case."[171] Markets were the focus of this inquiry: "only a further examination of the particular market—its structure, history and probable future—can provide the appropriate setting for judging the probable anticompetitive effect of the merger."[172] In a market trending toward greater concentration over time, a relatively insignificant merger could be seen as anticompetitive.[173] Again, these inquiries make sense only within the context of a given market.

Test-lab functions are even performed by the markets defined by unilateral effects predictions. You could easily miss this if you concentrated on the

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[167] Areeda, *supra* note 79, at 309.

[168] *See* Edward J. Green & Robert H. Porter, *Noncooperative Collusion under Imperfect Price Information*, 52 ECONOMETRICA 87, 90–91 (1984) (relating this and other aspects of competitive structure to the feasibility of self-enforcing collusion); *see also* Subhasish M. Chowdhury & Carsten J. Crede, *Post-Cartel Tacit Collusion: Determinants, Consequences, and Prevention*, 70 INT'L J. OF INDUS. ORG., May 2020, at 1 (discussing experimental evidence on how prior success at collusion may similarly facilitate coordination).

[169] *See* B. Douglas Bernheim and Michael D. Whinston, M*ultimarket Contact and Collusive Behavior*, 21 RAND J. ECON. 1 (1990) (suggesting how multimarket contact may facilitate collusion); Federico Ciliberto & Jonathan W. Williams, *Does Multimarket Contact Facilitate Tacit Collusion? Inference on Conduct Parameters in the Airline Industry*, 45 RAND J. ECON. 764 (2014) (providing empirical evidence on this relationship).

[170] *See* Baker, *supra* note 162, at 166-77 (describing different ways that a merger may facilitate collusion by changing the incentives of one of the merging parties).

[171] Brown Shoe Co. v. United States, 370 U.S. 294, 322 n.38.

[172] *Id.*

[173] *See, e.g.*, United States v. Von's Grocery Co., 384 U.S. 270, 277–78 (1966).

apparent precision of these models.[174] But apparent precision is not the same as actual precision, and the literal accuracy of unilateral effects predictions is limited to the toy models of competition they assume.[175] The more that actual competition diverges from these toy models, the more that unilateral effects predictions work like educated guesses.[176] In empirical studies to date, unilateral effects models have had little success in predicting actual behavior.[177]

This does not undermine the usefulness of unilateral effects predictions; it simply means that these predictions are not the end of antitrust analysis but the beginning. Shapiro has made this very point, saying that "measuring upward pricing pressure, or even performing a full merger simulation, typically is not the end of the story" because "[r]epositioning, entry, innovation, and efficiencies must also be considered."[178] When not a part of the underlying model, the potential price responses of other firms must also be considered. The scope of trade within which all of these questions must be evaluated is the market implicitly defined by the predicted exercise of market power. Like all other tests of market definition, unilateral effects predictions construct and act as laboratories in which antitrust analysis can be performed.

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[174] *See supra* note 118 and accompanying text.

[175] *See* Cameron, Glick, & Mangum, *supra* note 130, at 734 (warning not to confuse the predictions of a restricted economic model with accurate statements about complex, real-world markets); *see also* Franklin M. Fisher, *Games Economists Play: A Noncooperative View*, 20 RAND J. ECON. 113, 115 (1989) (decrying economic testimony "that one should analyze real markets by using [simple models of competition]" as "theory run riot").

[176] *See supra* notes 131–133 and accompanying text.

[177] *See* Craig Peters, *Evaluating the Performance of Merger Simulation: Evidence from the U.S. Airline Industry*, 49 J. L. & ECON. 627, 627 (2006) (reporting that "standard simulation methods, which measure the effect of the change in ownership on unilateral pricing incentives, do not generally provide an accurate forecast"); Dennis W. Carlton & Mark Israel, *Will the New Guidelines Clarify or Obscure Antitrust Policy?*, ANTITRUST SOURCE, Oct. 2010, 1, at 4 ("[T]here is only weak empirical evidence establishing the usefulness of merger simulation as a tool to predict anticompetitive mergers."); *see generally* Jonas Björnerstedt & Frank Verboven, *Does Merger Simulation Work? Evidence from the Swedish Analgesics Market*, 8 AM. ECON. J. 125 (2016) (reporting some successes, but also several respects in which merger simulation failed to adequately explain the apparent price and share effects of an observed merger); Lars Mathiesen, Øivind Anti Nilsen, & Lars Sørgard, *A Note on Upward Pricing Pressure: The Possibility of False Positives*, 8 J. COMPETITION L. & ECON. 881 (2012) (illustrating false positives in UPP analysis); Matthew C. Weinberg, *More Evidence on the Performance of Merger Simulations*, 101 AM. ECON. REV., May 2011, at 51 (reporting a retrospective study in which merger simulations substantially underpredicted the actual estimated price effects of a merger); *see also* Douglas D. Davis & Bart J. Wilson, *Differentiated Product Competition and the Antitrust Logit Model: An Experimental Analysis*, 57 J. ECON. BEHAV. & ORG. 89, 91 (2005) (describing uninspiring experimental results.).

[178] Carl Shapiro, Update from the Antitrust Division, Remarks as Prepared for the American Bar Association Section of Antitrust Law Fall Forum 26 (Nov. 18, 2010), https://www.justice.gov/atr/file/518246/download.

The point, for future market tests of market definition, is that markets are the context in which most substantive antitrust analysis takes place. Whatever considerations are needed to vet a given concern should fit within at least the local neighborhood of a market as it is defined.

III. Modular Market Definition

The different tests of market definition are transparently not the same, so why have we spent so long trying to use them like interchangeable hammers? Perhaps we have been led by an unconscious recognition of the common roles these tests play in the analysis of their respective concerns. For all their many differences, it still does make sense to group the various tests together in the antitrust toolbox. If nothing else, this organization simplifies the comparison of tests when deciding how to define markets in a given application. But that, of course, presumes that we have a method of selecting between the different tests. And that is where modular market definition steps in.

Modular market definition presents a two-step solution for selecting the right test in any given application. First, identify the substantive purposes for which markets are being defined. Second, select the test of market definition that best serves those purposes. (If no existing test adequately serves the needs of substantive analysis, then a new test is required.) This modular system accepts and exploits the differences between different tests of market definition. It seeks the most helpful test for the needs of each individual concern.

Is modular market definition the systematic and reliable tool that antitrust needs? One way judge this is to look at how modular market definition works in practice. Below, I provide a guided introduction to the tool, applying it to situations in which market definition is today imprecise or ambiguous. By providing a systematic and reliable method of choosing between different market definition tests, modular market definition promises to reduce the errors and variability we see in antitrust litigation today. As it happens, looking at modular market definition in action also brings into focus some old and stubborn misconceptions about markets that impede antitrust reasoning and that can be eliminated to improve antitrust enforcement.

A. Example applications

The following is a no-frills guide to using modular market definition in a variety of situations. Following the strong-magnification strategy of all recent tests,[179] each of the following applications identifies a test of market definition

[179] *See supra* note 143 and accompanying text.

tailored to the needs of a specific concern. If a case or transaction implicated multiple concerns, then a different test would be needed for each concern.[180]

1. Coordinated effects enabling tacit collusion

In a standard coordinated effects theory, the concern is that a merger will allow the exercise of joint market power through tacit collusion. Put another way, the worry is that the members of a possible collusive group will, because of the merger, become capable of colluding on things like joint price increases. As discussed before, the HMT was born for this concern.[181] The HMT, implemented by hypothesizing the joint exercise of market power as a small but substantial price increase over prevailing prices, is the right test for defining markets in this particular context.

With that said, some of the fussier mechanics of the HMT as described in the 2010 Horizontal Merger Guidelines can be safely omitted. The Guidelines talk about expanding markets to fill perceived gaps in the set of products in the market,[182] a heuristic sometimes called the "circle principle."[183] They also talk about shrinking markets to match the smallest group of competitors that could plausibly collude,[184] a heuristic sometimes called the "smallest market principle."[185] As descriptions of how the antitrust agencies go about their internal analysis, these heuristics are questionable judgement calls but nothing more. That tolerance does not extend, however, to treating these heuristics as immutable parts of the market definition process.

Confusion about this point has led to errors and near misses. The market definition mistakes of *FTC v. Rag-Stiftung*, for example, trace to excessive reliance on a few technical asides in the 2010 Guidelines. Mistaking the smallest market principle and some language about supply-side substitution for the

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[180] This approach was endorsed by the Supreme Court in *Brown Shoe*. *See* Brown Shoe Co. v. United States, 370 U.S. 294, 324–28, 335–39 (1962) (conducting separate market definition for the vertical and horizontal concerns raised by the merger). It enjoys theoretical as well as practical justifications. *See* Glasner & Sullivan, *supra* note 46, § III (providing an extended argument for defining multiple markets).

[181] *See supra* notes 102–103 and accompanying text.

[182] 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 4.1.1, para. 4 (suggesting the inclusion of products in a market when those products are perceived to be interstitial to other products already included in the market).

[183] *E.g.*, United States v. Aetna Inc., 240 F. Supp. 3d 1, 37 (D.D.C. 2017).

[184] 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 4.1.1, para. 5 ("[W]hen the Agencies rely on market shares and concentration, they usually do so in the smallest relevant market satisfying the hypothetical monopolist test.").

[185] *E.g.*, United States v. H & R Block, Inc., 833 F. Supp. 2d 36, 59 (D.D.C. 2011).

test of market definition itself,[186] the judge ended up defining markets so narrow that they repelled, rather than facilitated, substantive analysis of the concern before him.[187] In *United States v. H&R Block*, another judge narrowly escaped an invitation to uncritically expand markets by treating the circle principle as if it were part of market definition itself.[188]

The way to reliably avoid these errors is to start from the reasons for defining markets in this setting. The question, here, is whether a group of competitors could potentially collude to raise prices. If not—because the group members lack the joint market power to raise prices without help from outsiders—then expansion is necessary. But, if so, it simply makes no difference that some other broader or narrower group of competitors could also exercise joint market power.[189] The HMT is a strong-magnification test of market definition.[190] It identifies scopes of potential harm; it does not exhaust the range of harm. If broader or narrower markets could also satisfy the HMT criteria, then all that we have learned is that these may constitute alternative scopes of trade in which harm is possible. Alternative HMT markets can add to the list of potential injuries to be considered; they cannot subtract from it.

2. Coordinated effects entrenching tacit collusion

In a different version of the coordinated effects theory, tacit collusion has already taken hold among a group of competitors and the concern is that a merger will entrench the ongoing exercise of joint market power. Put another way, the harm threatened by this type of merger is not the exercise of new joint market power, but the stabilization of old joint market power.[191] Vetting entrenchment theories requires market analysis.[192] What test should be used to define those markets?

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[186] *See* FTC v. RAG-Stiftung, 436 F. Supp. 3d 278, 292–93 (D.D.C. 2020) (treating the smallest market principle as a rule of market definition); *id.* at 293–300 (plucking language from explanatory footnotes and asides to create a novel framework for deciding when it would be permissible to accept a broad market if narrower markets were possible).

[187] *See supra* notes 22–26 and accompanying text.

[188] *H & R Block*, 833 F. Supp. 2d at 65–66.

[189] *See supra* note 151 and accompanying text.

[190] *See supra* notes 149–152 and accompanying text.

[191] *See* Philip Areeda, *Market Definition and Horizontal Restraints*, 52 ANTITRUST L.J. 553, 564 (1983) (commenting that "[m]erger precedents have been concerned not only with combinations creating new power but also with those reinforcing present power" and that "a merger which reinforces pre-existing monopoly or oligopoly pricing" may be anticompetitive); 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 1, para. 5 ("[M]ergers should not be permitted to create, enhance, or entrench market power or to facilitate its exercise.").

[192] *See generally* Sean P. Sullivan, *Anticompetitive Entrenchment*, 68 U. KAN. L. REV. 1133 (2020) (discussing entrenchment theories of harm in merger enforcement).

Because it scopes markets around joint market power concerns, the HMT is the place to start. But applying the HMT by hypothesizing a price increase over prevailing prices now leads to strange results. Suppose that ongoing collusion has already raised prices as high as they profitably can go. Applying the HMT to these elevated prices reveals that the collusive group lacks the joint market power to raise prices further (which is true) but would then go about expanding the market on the assumption that the collusive group lacks joint market power (which is false).[193] Worse than wrong, this brings us back to the fox and henhouse problem:[194] the higher the tacitly collusive group manages to raise its prices, the wider the market becomes, and the more freedom group members have to lock in their successful collusion through merger.

These problems trace to a mismatch between the usual HMT and the concern in entrenchment theories. The usual HMT identifies a scope of trade in which new joint market power could be exercised. But entrenchment is about old joint market power. The concern is that ongoing collusion may be bronze cast by a merger involving members of an already collusive group—and this can happen without any new market power being created.

One way to define markets around the entrenchment concern would be to run the HMT by asking whether the members of the apparently collusive group have the joint market power to raise prices above a reasonable guess at what the price would be but for their collusion.[195] More directly, we could seek a scope of trade in which the defection of one of the merging parties could destabilize ongoing coordination. These are complex inquiries, but they are not insuperable. In *Valspar Corp. v. E.I. Du Pont De Nemours & Co.*, the Third Circuit recently affirmed summary judgement against a plaintiff's price fixing claim, reasoning that the members of a titanium dioxide oligopoly were tacitly colluding without express agreement to do so.[196] In any merger involving the members of this oligopoly, an entrenchment theory could use these same facts to strictly limit the market to that tacitly collusive group.

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[193] *See* Salop, *supra* note 154, at 194 (describing similar interpreting errors under the labels of the "Cellophane trap" and the "Price-Up trap").

[194] *See* text following note 47.

[195] *See* Glasner & Sullivan, *supra* note 46, 319–24 (discussing this point as an example of a broader need to match the HMT to the specifics of alleged collusion); Salop, *supra* note 154, at 197 ("Using the lower price that would prevail in the absence of the alleged anticompetitive conduct as the competitive benchmark is appropriate whenever it is alleged that a restraint will prevent price from falling to a lower level.")

[196] Valspar Corp. v. E.I. Du Pont De Nemours & Co., 873 F.3d 185, 200 (3d Cir. 2017) ("It makes sense that each firm would implement [parallel pricing] strategies, since conscious parallelism allows firms in an oligopoly to in effect share monopoly power and maintain prices at a profit-maximizing, supracompetitive level." (internal quotation marks omitted)).

3. Concerted conduct

The concerted actions of competitors often raise joint market power concerns. Unless the conduct in question would be illegal per se—something like naked price fixing or market division—market definition can be a useful step in evaluating whether this conduct is anticompetitive.[197] Because the focus is on exercises of joint market power, there are overlaps between market definition in this setting and in coordinated effects analysis. There are also differences, tracing to how alleged conspiracies direct analysis.

As a concrete example, consider *Todd v. Exxon Corp.*, in which the plaintiff alleged that a group of oil companies was using an information exchange to suppress employee wages.[198] In describing how the plaintiff might seek to prove her case, then-Judge Sotomayor identified proof of actual anticompetitive effects as an alternative to market definition and proof that the defendants held a large share of this market.[199] These are well-supported options in antitrust law,[200] but they suggest a curious distinction. If market definition is done right, what would be the difference?

Start with the market definition option. The plaintiff complained that Exxon, Mobil, B.P., and others were exchanging information in order to suppress wages. If wages were already suppressed as a result, then a helpful market would ask whether the alleged group of companies would have the joint market power to suppress wages relative to where they would be but for the ongoing information exchange.[201] This is the conduct-analogue of the HMT as applied to an entrenchment theory of coordination.[202] That question could be answered by circumstantial evidence of market power, but the most compelling proof would be evidence of actual wage suppression.

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[197] *See* Cal. Dental Ass'n v. FTC, 526 U.S. 756, 779 (1999) (commenting that even when a per se rule would ultimately be applied "considerable inquiry into market conditions" may be required to justify the per se rule).

[198] Todd v. Exxon Corp., 275 F.3d 191, 195 (2d Cir. 2001).

[199] *Id.* at 206 ("If a plaintiff can show that a defendant's conduct exerted an actual adverse effect on competition, this is a strong indicator of market power. In fact, this arguably is more direct evidence of market power than calculations of elusive market share figures.").

[200] *See, e.g.*, FTC v. Ind. Fed'n of Dentists, 476 U.S. 447, 460–61 (1986) (noting that reduced output "can obviate the need for an inquiry into market power" through market definition).

[201] *See* Salop, *supra* note 154, at 197 (noting that if it is alleged "that certain conduct has already permitted a firm to raise its price," then "the proper competitive benchmark is not the current price [but] the lower price that would have prevailed absent the alleged restraint"). Put another way, the *Cellophane* fallacy, widely recognized as complicating market definition in the monopolization context, applies equally in the concerted action context. *Cf.* sources cited *supra* note 47 (discussing the *Cellophane* fallacy).

[202] *See supra* Part III.A.2.

Now consider the direct proof of effects option. Here, the plaintiff presents evidence that the defendants' conduct was resulting in observable wage suppression.[203] Unless this ends the inquiry, it may still be helpful to identify markets in which further analysis can be conducted—entry barriers, business justifications, and similar inquiries are difficult to study in a vacuum.[204] As we have discussed, however, evidence of actual effects is itself compelling proof that those engaged in the challenged conduct have the joint market power to constitute a relevant market.[205]

The market definition and direct proof inquiries thus ask the same questions and lead to the same results. When proof of effects is unavailable, market definition is the only path forward. But when proof of effects is available, the two coincide. Put another way, proof of anticompetitive effects does not obviate market definition; proof of actual effects *is* market definition.[206]

Now, what happens when the challenged conduct has not yet had time to cause actual effects? Suppose the oil companies in *Todd* had only just begun to swap information. Here, market definition asks whether the coconspirators would have the joint market power to bring about future wage suppression. This is the conduct-analog of the HMT as applied to standard coordination theories.[207] Prevailing prices—here, wages—are the appropriate baseline for the tests, and the feasibility of the exercise of joint market power can only be tested by circumstantial evidence.

4. Undifferentiated-product unilateral effects

Returning to merger analysis, one type of unilateral effects concern straddles the line between individual and joint market power. The operative setting is an undifferentiated product space: a context in which competing products are almost perfectly interchangeable. If a merger of competitors creates a firm with a large enough market share in this setting, that firm may be able to profit by curtailing its own production. The artificial scarcity this curtailment creates drives up the price for all producers.[208] Hence, this is an exercise of joint

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[203] *E.g.*, *Todd*, 275 F.3d at 214 (alleging ongoing salary suppression and specific reductions in wage competition over prior years).

[204] *See supra* Part II.C (discussing markets as test labs).

[205] *See generally* Crane, *supra* note 106 (discussing direct inferences of market power from conduct); John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 B. U. L. REV. 1169, 1196 (2018) (elaborating on how and when market power can be identified from conduct).

[206] *See supra* notes 123–135 (similarly interpreting unilateral effects predictions).

[207] *See supra* Part III.A.1.

[208] *See* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 6.3, para. 1 (describing concern that "the merged firm will find it profitable unilaterally to suppress output and elevate *the market price*" (emphasis added)).

market power. But, because of its large size, the merged firm collects enough of the profits to find curtailment worthwhile even without the cooperation of its competitors. Hence, this is unilateral conduct.[209]

In economic models of this unilateral effects concern, features of a market like the relative shares of the merging parties and the likely supply responses of non-merging rivals inform the seriousness of the concern.[210] How should markets be defined when trying to identify these features?

While this is a theory of unilateral conduct, the effect is still an exercise of joint market power, and so the HMT is again the appropriate test for the job. In fact, this is the one setting in which the fussier aspects of market definition as described in the 2010 Horizontal Merger Guidelines may be applicable.[211] Since the theory of harm is an automatic price increase propagated across all producers by a supply retraction, scoping the impact of the price increase, and how much of the profit would return to the merged firm, may well require filling in gaps and identifying sufficiently narrow markets in this setting.

5. Differentiated-product unilateral effects

The more common unilateral effects concern today is the one that arises from a merger of close competitors in a differentiated product space. Think, for example, of a merger of tobacco companies or soft-drink manufacturers. Here, the concern is not that a merger will facilitate the exercise of joint market power by all competitors but that it will facilitate the exercise of individual market power by the merging parties.[212] The appropriate test of market definition in this setting is the credible prediction of a unilateral price increase,[213] a prediction which can be supplied by various economic models.[214]

The one important exception to this rule is a special case of unilateral effects analysis in which market shares in a broader relevant market are used to substitute for more precise measures of the closeness of competitors.[215] There

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[209] *See* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 6.3 (discussing this concern in greater detail).

[210] *See id.,* para. 2 (listing relevant factors); *see generally* Joseph Farrell & Carl Shapiro, *Horizontal Mergers: An Equilibrium Analysis*, 80 AM. ECON. REV. 107 (1990) (describing price and welfare effects of merger in this context); R. Preston McAfee & Michael A. Williams, *Horizontal Mergers and Antitrust Policy*, 40 J. INDUS. ECON. 181 (1992) (similar); Luke M. Froeb & Gregory J. Werden, *A Robust Test for Consumer Welfare Enhancing Mergers among Sellers of a Homogeneous Product*, 58 ECON. LETTERS 367 (1998) (similar).

[211] *See, e.g.*, *supra* notes 182–185.

[212] *See supra* notes 110–113 and accompanying text.

[213] *See supra* notes 123–135 and accompanying text.

[214] *See* sources cited *supra* note 132.

[215] *See, e.g.*, Willig, *supra* note 108, at 299-305 (explaining this approach).

are serious theoretical limitations to this approach, and these typically limit share-based unilateral effects predictions to the shallow waters of data scarcity and time constraints.[216] But, when this path is taken, the HMT is a reasonable process for scoping a market in which shares could at least potentially identify frequency of head-to-head competition.

6. Monopolization

In contrast to the identification of general market definition tests in the previous examples, it is harder to find broadly appropriate tests for monopolization cases. The problem is not the tool but the subject. It is settled law that monopolization involves the possession of monopoly power and the acquisition or maintenance of that power through exclusionary conduct.[217] It is also settled law that market definition can help in proving both elements.[218] But that is where the firm ground ends. Ambiguities in what these terms mean and how they interreact leave open the possible need for different tests to address different types of conduct and different interpretations of this law.

The possession of monopoly power, for example, is mostly defined today as "something greater than [normal] market power."[219] But other definitions are still common. Monopoly power is also described as "the power to control prices or exclude competition."[220] And, in the past, it was defined as insufficient availability of alternatives[221] or a size "great enough to cause just anxiety on the part of those who love their country more than money."[222] These are not the same thing and a test of market definition suited to one interpretation of monopoly power would be ill-suited to another. For the significant market

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[216] *See* Jerry Hausman, *2010 Merger Guidelines: Empirical Analysis*, ANTITRUST SOURCE 1 (Oct. 2010) (noting that this approach requires the IIA property, which is "unrealistic in many situations"); Willig, *supra* note 108, at 301 (commenting that the assumptions behind this approach "are unlikely to be valid in many areas of application").

[217] United States v. Grinnell Corp., 384 U.S. 563, 570–71 (1966).

[218] Market shares can help to establish the monopoly power element of the offense. *See supra* notes 6–10 and accompanying text (describing the identification of monopoly power by market share in *Alcoa*). Market shares can also help to establish the exclusionary conduct element. *See* HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE 110–11 (5th ed. 2016) (citing predatory pricing, foreclosure, and tying as examples of exclusionary conduct offenses "that are plausible only [when] the defendant occupies a large portion of the relevant market in question").

[219] Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 481 (1992).

[220] United States v. E. I. du Pont de Nemours & Co. (*Cellophane*), 351 U.S. 377, 391 (1956).

[221] United States v. Aluminum Co. of Am., 148 F.2d 416, 427 (2d Cir. 1945) (describing the illegality of monopolization as reflecting a preference for "a system of small producers . . . [over] one in which the great mass of those engaged must accept the direction of a few").

[222] N. Sec. Co. v. United States, 193 U.S. 197, 407 (1904) (Holmes, J., dissenting).

power interpretation, a version of the HMT could suffice, as discussed below. That test would not be much help, however, if monopoly power was defined as having a dominant share of a recognizable industry or the mere ability to exclude competitors.[223] For these, the practical indicia test would be a better approach. And if monopoly power was defined by the value a company alone, then market definition is entirely unnecessary.

Another complexity arises from the basic difference between *acquisition* and *maintenance* of monopoly power. Assume that monopoly power means significant market power. A firm without significant market power could acquire such power through acts of exclusion. In this case, the firm's possession of monopoly power would be tested by its increase in market power, and the market used to assess its possession of monopoly power would inquire about its changed ability to raise prices after the acts of exclusion. In a maintenance of monopoly power case, on the other hand, the monopolist could already be pricing near the limit of its power. Markets would then need to serve different roles. One role would be to evaluate the possession of monopoly power, asking if the monopolist could raise its prices above a competitive baseline. Another role would evaluate the monopolist's ability to protect its market power through exclusionary acts.[224] These markets may, but need not, overlap. This is to say nothing of the possibility that the different parts of monopolization could have different meanings.

By now, you may have given up hope on this particular example application. Because modular market definition selects the test of market definition by looking to the analytical needs of the substantive law, it can never be clearer than the substantive law itself.[225] Until some of the stubborn ambiguities in monopolization doctrine are resolved, all that modular market definition can do is prescribe a series of tests appropriate to different possible applications of this area of law.

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[223] Here, mere injury to competitors contrasts with an expectation that injury to competitors would translates into harm to consumers. *See generally* Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Gain Power Over Price*, 96 YALE L.J. 209 (1986) (discussing in detail the different possible standards of exclusion).

[224] *Cf.* Salop *supra* note 154, at 195 (observing that, standing alone, a firm's ability to price above marginal cost "does not mean that the firm can maintain or enhance its power by engaging in specific conduct alleged to be anticompetitive").

[225] *Cf.* Thomas E. Kauper, *Section Two of the Sherman Act: The Search for Standards*, 93 GEO. L.J. 1623 (2005) (describing, with exasperation, more than a century of uncertainty about the standard of illegality in monopolization cases).

7. Structuralism and protectionism

We have yet to address the type of structuralism that was prominent in 1960s antitrust, and for good reason. It has been a long time since antitrust last fought for the retention of unconcentrated industries and the protection of small businesses.[226] But while these concerns do not move cases today, the history of antitrust law is one of shifting norms and policy goals,[227] and recent events may signal the return of structuralism, and perhaps even protectionism, to the antitrust stage.

Bearing the short title "Consolidation Prevention and Competition Promotion Act of 2019,"[228] a bill introduced by Senator Klobuchar in 2019 recited that "unprecedented consolidation is reducing competition and threatens to place the American dream further out of reach for many consumers in the United States."[229] As discussed previously, another bill recently introduced by the Senator would erect presumptions of illegality for mergers and exclusionary conduct undertaken by firms with more than a fifty percent share of any relevant market.[230] Meanwhile, a recent House subcommittee report urges greater congressional attention to "increased market concentration in our economy"[231] and references with apparent approval a recommendation that Congress should "investigate factors which tend to … injure small business … or promote undue concentration of economic power …."[232]

The results of these initiatives remain to be seen. If the outcome is indeed the return to antitrust of structuralism concerned with concentration itself,[233] or of the protectionism that sought to defend small businesses against larger rivals even if doing so meant lower efficiency,[234] then this will have follow-on effects in market definition. Simply put, tests like the HMT are inappropriate for pursuing industry-level concentration concerns or the protection of small businesses. Changes in market power do not exhibit systematic relationships

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[226] *See supra* note 78 and accompanying text.

[227] *See* sources cited *supra* note 32 (discussing the evolution of antitrust norms); *see also* Robert Pitofsky, *The Political Content of Antitrust*, 127 U. PA. L. REV. 1051, 1052–52 (noting attention to "political" concerns throughout most of antitrust history).

[228] S. 307, 116th Cong. § 1 (2019).

[229] *Id.* § 2.

[230] S. 225, 117th Cong. §§ 4, 26A (2021).

[231] STAFF OF H. SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. OF THE COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 7 (Comm. Print 2020) [hereinafter DIGITAL MARKETS REPORT].

[232] *Id.* at 7–8.

[233] *See* Herbert Hovenkamp, *The Looming Crisis in Antitrust Economics*, B.U. L. REV., 43–44 (forthcoming 2021) (critiquing at least one bill as "focused far too much on increased concentration or absolute size for their own sake").

[234] *See supra* notes 52–55 and accompanying text.

with either of these concerns. Instead, the return of these interests to antitrust would necessitate a corresponding return to something like *Brown Shoe* and the practical indicia test.[235] Markets scoped by popular perception are the appropriate setting for addressing concerns about industrial concentration qua concentration and for pursuing protectionist objectives.

B. Old problems and new promises

Watching modular market definition in action, a few defining features of the tool stand out. First, modular market definition always starts from an understanding of the operative concern.[236] It uses this understanding to identify the test best suited to the needs of that concern. Second, modular market definition favors high-magnification markets.[237] The point is to identify markets suited to the evaluation of specific concerns, not to ensure that every possible consideration can be subsumed into a single monolithic market. Third, modular market definition uses markets only for the concerns around which they are defined.[238] An HMT market, defined to study possible coordinated effects, would never be blindly repurposed to look at unilateral effects concerns.

To a one, these features are missing from the hammer approach to market definition. The consequences go beyond unpredictable and unreliable results in individual cases. The hammer approach drags antitrust into error and confusion. Modular market definition, in contrast, opens a path to more effective and efficient antitrust enforcement.

As a starting point, consider how the hammer analogy injects Hobson's choices into market definition in the form of rules that restrict markets to fit one specific mold or none at all. Judges in the Nineth Circuit have spent over a decade now reciting the claim of *Newcal Industries v. Ikon Office Solution* that markets "must encompass the product at issue as well as all economic substitutes for the product."[239] Markets omitting any such substitutes are declared defective.[240] The *Newcal* rule traces to the hammer analogy. Only the early commodity concept tests had such exhaustive scope. But since all tests are the same in the hammer analogy, any test may bind every market.

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[235] *See supra* notes 73–77 and accompanying text.

[236] *See, e.g.,* text accompanying notes 189, 195, 201, and 207.

[237] *See supra* Part II.A (discussing magnification strategies).

[238] *See supra* Part III.A (using different markets to assess different concerns).

[239] Newcal Indus., Inc. v. Ikon Office Sol., 513 F.3d 1038, 1045 (9th Cir. 2008).

[240] *See, e.g.*, AFMS LLC v. United Parcel Serv. Co., 105 F. Supp. 3d 1061, 1077–78 (C.D. Cal. 2015), *aff'd sub nom.* AFMS LLC v. United Parcel Serv., Inc., 696 F. App'x 293 (9th Cir. 2017); Payment Logistics Ltd. v. Lighthouse Network, LLC, No. 3:18-CV-00786-L-AGS, 2018 WL 5311907, at *3 (S.D. Cal. Oct. 24, 2018).

Other courts enforce a similar rule in merger litigation. When seeking to enjoin mergers, the government now must define markets by the HMT even when its complaint turns on nothing but unilateral effects predictions,[241] and even when these HMT markets had nothing to do with the substantive basis for seeking the injunction in the first place.[242] It does so for the simple reason that judges demand this.[243] Here, no less than in the Nineth Circuit, we see a single test of market definition being forced upon every application.

From the perspective of modular market definition, these restricted rules of market definition are unfounded and unwise. The Newcal rule is especially odd, as not since the dawn of disco has antitrust sought exhaustive markets.[244] Amazingly, the one lonely authority that *Newcal* produces for its claim is the very page of *Brown Shoe*—the full page is cited—in which the Court first excused markets from matching the breadth of the commodity concept tests.[245] The rules are unwise because they break communication between the purpose of market definition, which varies from case to case, and the process of market definition, which is frozen solid under these rules.

Another analytic error reveled by modular market definition involves the tortured history of market concentration inferences.[246] From about the 1950s to the 1960s, industrial organization economists reported what seemed to be strong relationships between industrial concentration and various measures of market power. This research was soon attacked as suffering from measurement problems (market power is hard to measure) and causality issues (concentration can actually result from market power).[247] Decades of handwringing later, only echoes of the initial claims remain. Few today would deny that there is a positive but hard-to-generalize relationship between concentration

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[241] *See, e.g.*, Shapiro, *supra* note __ (reassuring listeners that DOJ "recognizes the necessity of defining a relevant market as part of any merger challenge we bring").

[242] *Compare* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 6.1, paras. 6–7 (disclaiming the need to define markets in unilateral effects analysis), *with* Shapiro, *supra* note 114, at 56 (disclaiming the ability to skip market definition "when going to court").

[243] *See supra* notes 134–135 and accompanying text.

[244] *See supra* Part I.B.

[245] *Newcal*, 513 F.3d at 1045 (citing Brown Shoe v. United States, 370 U.S. 294, 325 (1962)).

[246] *See generally* Richard Schmalensee, *Inter-industry Studies of Structure and Performance*, *in* 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 951 (Richard Schmalensee & Robert Willig eds., 1989) (providing a critical review of this literature).

[247] *See* Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSP. 44, 46–47 (2019) (summarizing similar concerns); Jonathan B. Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power*, *in* HANDBOOK OF ANTITRUST ECONOMICS 1, 24-25 (Paolo Buccirossi ed., 2008) (same).

and price in many industries,[248] but the usual soundbite is that economics has not established more than a "weak" empirical relationship between concentration and market power.[249]

Looked at from the perspective of modular market definition, this whole project is a curiosity. Modular market definition acknowledges that there are different ways of defining markets.[250] It also acknowledges that there are different types of market power.[251] The unstated assumption in the research and antitrust conversation seems to be that concentration and market power must admit some one-size-fits-all relationship. But if different tests of market definition connect different versions of market concentration to different types of market power, then what exactly are we averaging here?[252] Seen from this perspective, weakness in the observed relationship between concentration and market power could owe as much to muddled market thinking as it does to any actual absence of economic relationships in the data.

One last error revealed by modular market definition involves the misuse of market concentration screens in modern antitrust thinking. This error is a big one. Ever since 1982, the merger guidelines have set aside certain mergers as unlikely to require serious analysis. These unproblematic mergers are identified by their small size or consequence for market concentration in a market defined by the HMT.[253] Mergers not meeting minimum concentration thresholds are, today, rarely investigated at all—the thresholds are thus safe harbors or quasi-safe harbors depending on who you ask.[254]

Looked at from the perspective of modular market definition, it is simply astonishing that this practice has remained undisturbed for so long. Why use

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[248] *See* Schmalensee, *supra* note 246, at 988 (summarizing the literature as supporting the stylized fact: "In cross-section comparisons involving markets in the same industry, seller concentration is positively related to the level of price").

[249] *See, e.g.*, Carlton, *supra* note 119, at 4 ("Unfortunately, there is only a weak link between change in market share and change in competitive performance . . . .").

[250] *See supra* Part I.

[251] *See supra* Part II.

[252] *Cf.* Berry, Gaynor & Scott Morton, *supra* note 247, at 45, 47–48 (noting that there is no single causal relationship between concentration and price, but actually a series of different relationships, a subset of which may be applicable in any given context).

[253] *See* 1982 MERGER GUIDELINES, *supra* note 82, § III.A.1.a; 1992 HORIZONTAL MERGER GUIDELINES, *supra* note 100, §§ 1.0, 1.51; 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 15, § 5.3, para. 6.

[254] *Cf.* FED. TRADE COMM'N & U.S. DEP'T OF JUSTICE, HART-SCOTT-RODINO ANNUAL REPORT 5–6 (FY 2019), https:// www.ftc.gov/system/files/documents/reports/federal-trade-commission-bureau-competition-department-justice-antitrust-division-hart-scott-rodino/p110014hsrannualreportfy2019_0.pdf (reporting that only about two to three percent of merger notifications were subject to requests for additional information and documentary material in recent years).

lack of concentration in a single way of defining the market as a plenary screen for identifying unproblematic mergers?[255] Sure, evidence that a merger would secure high concentration in an HMT market should flag it as having the potential to enable tacit collusion in this market.[256] And sure, an unconcentrated HMT market reduces concern about coordinated effects within that scope of trade.[257] But neither of these inferences tells us anything about other anticompetitive concerns. A merger may, for example, create unilateral market power without raising any risk of coordinated behavior at all.[258]

Is there any justification for giving concentration in an HMT market such sweeping effect? This screen can be justified as economizing on government budgets and as increasing the predictability of merger enforcement.[259] But the same arguments could be made to justify turning patients away at the hospital doors if they do not present with high blood pressure. Both practices save resources and increase predictability, but they do so only by ignoring many potential problems.[260] This market concentration screen also may be defended on the theory that a really narrow HMT market may approximate a unilateral effects prediction. But why torture HMT markets to serve this role when better tests are already available for unilateral effects concerns?[261]

In the end, there is no salvaging a rule that ignores one antitrust concern on the basis of evidence against another *different* concern. Screens based on market concentration may be a principled way of disposing concerns that fall within that particular market. It is fair, for example, to interpret low concentration in an HMT market to mean there is little risk of tacit collusion within that scope of trade. But screens based on market concentration are not a principled way of disposing concerns that would arise in different markets. Those looking to strengthen antitrust enforcement should make reforming this odd an unnecessary practice a top priority.

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[255] *Cf.* Shapiro, *supra* note 114, at 69 (commenting that despite the increased emphasis on unilateral effects concerns, the "DOJ continues to apply the HHI thresholds to all horizontal mergers").

[256] *See supra* notes 158–160 and accompanying text.

[257] *See* 1982 MERGER GUIDELINES, *supra* note 82, § III.A.1.a (commenting that "implicit coordination among firms is likely to be difficult [in unconcentrated markets]").

[258] *See supra* notes 116–122 and accompanying text.

[259] *See* John Kwoka, *The Structural Presumption and the Safe Harbor in Merger Review: False Positives or Unwarranted Concerns?*, 81 ANTITRUST L.J. 837, 844-45 (2017) (summarizing the history and policy goals of safe harbor provisions in merger analysis).

[260] *See* Salop, *supra* note 154, at 191–98 (similarly critiquing of the idea that market definition acts as a preliminary "filter" for ruling out competitive effects).

[261] *See supra* notes 123–135 and accompanying text.

Conclusion

Market definition is in rough shape today, but there is hope. I cannot, and I do not, refute the accusations of critics that market definition is a crude and clumsy tool of antitrust analysis.[262] These titles are well deserved, especially in the current grip of the hammer analogy and the confused mashup of different tests it encourages. But the truth is that market definition has been clumsy at other times as well. Every inflection point in antitrust history seems to suffer from a grinding of gears as old ideas about market definition abrade against new objectives in antitrust policy.

Yet the clumsiness of market definition during changes in policy actually reflects a great a strength of the tool. It reflects the way that previous tests had become shaped to fit previous concerns. This is obvious when you think about it: market definition could not have survived for so many decades, and endured so many changes in antitrust policy, if it did not have the ability to change and grow with the underlying law. A drill is a perfect instrument when the right drill bit is used. The freedom of market definition is the freedom to choose the right drill bit for every job.

Modular market definition embraces this freedom and directs it against the type of clumsiness that market definition does not need—clumsiness deriving not from flexibility but from recalcitrance. It separates the existing tests of market definition and recasts them as bespoke market definition modules, each module suited to addressing specific concerns. In so doing, it cuts down on the clumsiness of market definition while still retaining the flexibility of the tool to develop with the underlying law.

That flexibility is important today. Giants of the tech world now face scrutiny and challenge on novel grounds.[263] Matters of long-term innovation and privacy competition increasingly sound in antitrust.[264] Opposing philosophies are entering into an ugly battle over control of the next few decades of

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[262] *See supra* notes 119–120 and accompanying text.

[263] *See, e.g.*, Complaint for Injunctive and Other Equitable Relief, Federal Trade Commission v. Facebook, Inc., No. 1:20-CV-03590-JEB (D.D.C. Jan. 13, 2021); Complaint, United States v. Google, LLC, No. 1:20-CV-03010 (D.D.C. Oct. 20, 2020); *see generally* DIGITAL MARKETS REPORT, *supra* note 231 (outlining cases against Amazon and Apple as well).

[264] *See, e.g.*, Erika M. Douglas, *The New Antitrust/Data Privacy Law Interface*, YALE L.J. F. 647 (2021); Giulio Federico, Fiona Scott Morton, & Carl Shapiro, *Antitrust and Innovation: Welcoming and Protecting Disruption*, *in* 20 INNOVATION POLICY AND THE ECONOMY (Josh Lerner & Scott Stern eds., 2020).

antitrust policy.[265] The gathering clouds portend little certainty in this area of law and the need for flexibility in all tools of analysis.

Modular market definition responds to that need. What are the boundaries of the general search market? What products should be included in the scope of personal social networking services? The answers to these seemingly mundane questions will soon touch more lives than thousands of other legal disputes combined. Those answers deserve more than the unpredictable and unreliable coin flip of modern market definition. They deserve an approach that responds to the actual concerns raised in each case. They deserve a modular approach to market definition.

[265] *See generally* A. Douglas Melamed, *Antitrust Law and Its Critics*, 83 ANTITRUST L.J. 269 (2020) (summarizing and synthesizing current debates over antitrust policy); Daniel A. Crane, *The New Crisis in Antitrust (?)*, 83 ANTITRUST L.J. 253 (2020) (similar).